

IDENTIFYING PRINCIPALS' PRACTICES THAT AFFECT  
ACHIEVEMENT AND ACCREDITATION OF PUBLIC ELEMENTARY, MIDDLE, AND  
HIGH SCHOOLS IN VIRGINIA

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ABSTRACT

The purpose of this study was to investigate the practices of elementary, middle, and high school principals that are associated with the Standards of Learning accreditation status of schools in Virginia. A number of factors that discriminate between Accredited with Warning and Fully Accredited schools were investigated.

Questionnaires were administered to 142 principals and 567 teachers. Items in the questionnaires were associated with sub-domains that affect the accreditation status of schools. Characteristics of principals, teachers, and schools were collected in a demographic section of each questionnaire. A principal components analysis was applied to reduce the number of sub-domains to a smaller set of meaningful measures. A combination of predictor variables was used in the final analysis. They are factors derived from the characteristics of principals—*principal's years of experience, principal's years of experience in his or her current position, gender of the principal, principal's highest degree (master's or less or more than master's); and principal's school level assignment (elementary, middle, or high);* characteristics of schools—*percentage of children receiving free or reduced-price lunches and school setting (urban, suburban, or rural);* and principal practices—*providing instructional assistance and support, establishing infrastructure, implementing the curriculum, and being sensitive to students.* The overall Wilks' lambda ( $\lambda=.69$ ) was significant ( $p\leq.00$ ) indicating that the predictors discriminated between the two groups.

Discriminant function analysis indicated that the best predictors of accreditation status were *percentage of students receiving free or reduced-price lunches, school setting urban v. other (suburban and rural), principal assignment middle v. other (elementary and high), and principal assignment elementary v. other (middle and high).*

When classification analysis was applied, 79.5 percent of the cases for Accredited with Warning and Fully Accredited schools were correctly classified. Schools Accredited with Warning had higher mean scores on the percentage of children receiving free or reduced-price lunches. These schools were more likely to be in urban settings than suburban or rural settings, and they were more likely to be middle schools than elementary or high schools. Fully Accredited schools were more likely to be elementary schools than middle or high schools. None of the principals' practices--providing instructional assistance and support, establishing infrastructure, implementing the curriculum, and being sensitive to students--discriminated between the two levels of accreditation status of the schools.

## DEDICATION

*"It is not the mountain we conquer but ourselves."  
Edmund Hillary*

To my wife Tamara: I have a deep and abiding admiration for your devotion to our family, professionalism as an educator, and untiring and unwavering dedication to student learning and teaching. Your understanding of the instructional practices principals and teachers need when assisting students in their efforts to pass Standards of Learning tests was invaluable and generated concepts I was able to process, organize, and convey in my writing. Your untiring support and encouragement were motivational and helped me maintain focus through the completion of this project.

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To my granddaughters Aubrey Kellan and Mary Berkley: "With greater confidence in yourself and your abilities, you will set bigger goals, make bigger plans and commit yourself to achieving objectives that today you only dream about" (Bryan Tracy).

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## CHAPTER ONE

### THE PROBLEM

Educational reform prompted changes in the instructional leadership role of principals. Principal accountability for student achievement and overall school performance has never been greater. In Chapter One reforms that affected change in principal responsibilities, emphasis on the importance of principal leadership, and a method for identifying practices of principals that affect achievement and accreditation are addressed. A context of the study, purpose of the study, problem statement, literature review, theory, model of the theory, review of the research, definitions, and research question are presented.

#### Context of the Study

The principal is accountable for appropriately implementing academic content, testing procedures, and instructional practices leading to student and school success more than any other educator. The principal's role as manager and instructional leader continues to impact the academic success of a school. Principals are expected to apply instructional skills, methods, and strategies to the changes in guidelines, procedures, and mandates brought about by reform. The current accountability movement, a product of reform, indicates that principals play a key role in establishing criteria for improving student achievement, measuring student achievement, and measuring overall school success. Researchers have studied principals' practices and their effects on student achievement since reform in education began. The study of principals' effects as a phenomenon motivates researchers to employ various methods for determining why principals are generally recognized for their strength of leadership. Despite researchers' efforts, it is difficult to find a significantly large measurable direct or indirect effect linking principals' practices and student achievement. However, it is widely believed that if principals' practices falter in improving student achievement, school success leading to standards accreditation will likely not occur.

Chapter 1 is an overview of reform efforts in education and the changes in accountability encountered by principals. Interest in studying the effects of principals' practices on student achievement is presented from the researcher's perspective. A summary of several research studies conducted on the effects of principal practices on

student achievement is presented to establish a continuing need for studying the effect of principals on student achievement and school performance. Using the Standards of Accreditation for Virginia's public elementary, middle, and high schools, an investigative method for studying principal practices affecting school accreditation was developed.

### *Reform Leading to Changes in Principal Leadership*

In this era of national and state educational reform, an elaborate standardized testing process has become the norm for measuring instructional accountability. Underlying the movement toward this elaborate process were several documents that sparked governmental concerns about the state of education in the United States. Each document helped forge the reform movement in education. One of the initial documents, the *Coleman Report*, developed by J.S. Coleman in 1966, contained ambiguous and controversial information related to the variables affecting education in the United States. Dissatisfaction with the results of the report led educators to research practices in public schools responsible for affecting student achievement.

When Coleman investigated the opportunities for all students to learn in the late 1970s and concluded that education was not as important to a child's learning as family influence, concerns about the state of education in the United States arose among educators (Effective Schools, 2001). In an effort to prove Coleman wrong, studies were conducted in schools to identify practices being used to stimulate success. A common set of practices emerged that Edmonds(1979) referred to as "Five Correlates of Effective Schools" (Becker, 1992. p. 7). The correlates were a precursor to the effective schools movement and researchers' interest in principals' practices influencing student achievement and school success. A later document, *A Nation at Risk: The Imperative for Educational Reform* (National Commission on Excellence in Education, 1983), echoed many of the concerns expressed by Coleman. *A Nation at Risk* was published with the goal of raising political and public awareness of a decline in education. The authors offered suggestions for drastically improving academic rigor and student achievement.

Governmental concern for the state of education in the United States was heightened in the early 1980s. The National Commission on Excellence in Education (1983) suggested that educational practices in the United States were in great need of

improvement. The Commission cited 13 shortcomings that contributed to a major decline in educational performance and cited them as detriments to intellectual advancements in a rapidly advancing age of technology. These shortcomings were: (1) low student achievement compared to similar industrialized countries, (2) a large population of illiterate adults and teenagers, (3) lowest performance on standardized tests since the 1950s, (4) scores from tests designed to measure gifted student ability do not correspond with the achievement grades of the same gifted students receive at the school level, (5) seventeen year decline in Scholastic Aptitude Test (SAT) results, (6) decline in physics and English SAT scores, (7) decline in numbers of students scoring 650 or higher on SATs, (8) decline in number of 17-year-olds able to demonstrate understanding of written material, (9) decline in the ability of 17-year-olds to write persuasive essays and use necessary steps to solve math problems, (10) steady decline in 17-year-olds' science achievement scores from 1969 to 1977, (11) dramatic increase in the number of students participating in remedial mathematics courses in college between 1975 and 1980, (12) decline in achievement scores for students graduating from college, and (13) large expenditures for remediation of those entering military service (National Commission on Excellence in Education [NCEE], 1983, pp. 7- 8). The Commission stressed that public schools needed to set higher standards that would toughen academic offerings, greatly improve student achievement, and accentuate overall school performance. Continuing, the commission recommended the following:

Standardized tests of achievement (not to be confused with aptitude tests) should be administered at major transition points from one level of schooling to another and particularly from high school to college or work. . . . The tests should be administered as part of a nationwide (but not federal) system of state and local standardized tests. This system should include other diagnostic procedures that assist teachers and students to evaluate student progress. (NCEE, 1983, p.19)

Though the Commission cited no specific methods for improving education, it advocated support for an enhanced curriculum that would encompass all academic offerings in public schools in the United States (NCEE, 1983). The curriculum is

recognized in public schools today as an established regimen of expanded academic offerings in English, mathematics, science, social studies, technology, and foreign language. According to the Commission, for reform to occur, several influences must be present to ensure support for the reform effort. With the availability of viable instructional resources, it was the Commission's contention that change could only happen with exceptional educational leaders (NCEE, 1983). Principals as leaders were expected to strengthen the educational processes within individual schools by implementing required standards.

Coleman (1966), Edmonds (1979), and NCEE (1983) set in motion an effective schools movement that evolved into the current standards movement. Information generated by the effective schools movement stimulated government realization that reforms were necessary for the United States to be competitive in a rapidly growing world of technology. As the nation focused its efforts to improve education, state governments began establishing standards for school districts to use in improving education.

### *Establishing Standards*

The early years of the effective schools movement lacked direction among states and coordination of efforts that would provide a common benefit to all students in the United States. Evident was the notion that improvement in education would only occur through stringent changes in the processes influencing student achievement and overall school performance (Firestone, 1991). The disconnectedness that existed among the states changed in 1989 when President George Bush and the nation's governors met to lay the groundwork for "national educational goals called *America 2000*" (Relic, 2004, p. 1). The purpose of *America 2000* was to develop high educational standards, develop standardized tests designed to measure student achievement, and produce a workforce that would be competitive in a "global economy" (Relic, p. 1). The goals for *America 2000* were announced by the Bush administration in 1991. Money was appropriated for states willing to establish standards (Relic, p. 1). The Clinton administration adopted the goals of *America 2000*, renamed the goals--*Goals 2000: Educate America*, and Congress "appropriated funds to the United States Department of Education . . . to

develop voluntary national tests” (Relic, p. 1). However, state governments opted to assess student performance on state-developed standards.

States adopted some or all of the targeted subject areas suggested by the NCEE as standards. The core areas of English, math, social studies, and science are recognized as the core subjects in the school curriculum. Results of standards testing are used to indicate success in student achievement. States use the results of all student test scores to develop school performance indicators. Virginia uses end-of-year grade-level tests in elementary or end-of-course tests in middle and high schools to measure student achievement. The results of each subject content area were used to develop a procedure for accrediting schools. The procedure followed by Virginia was established after attempts to use competency testing to measure student achievement failed.

#### *Standards and School Accreditation in Virginia’s Public Schools*

Virginia introduced the Literacy Passport Test (LPT) in 1989 as a standardized means for measuring student achievement (Margheim, 2001). Beginning in the sixth grade, students were required to pass minimum competency tests in reading, writing, and math. By 1995 the pass rates for the number of students taking the LPT for the first time had not exceeded the 1989 pass rate of 60% (Margheim, 2001). The Virginia Department of Education surmised that instructional practices were not improving student achievement. An alternative approach to strengthening academic requirements, instructional leadership of the principal, teachers’ instruction of content, student achievement, and school performance was adopted. According to Margheim (2001), the following occurred:

The Virginia Board of Education approved its new K-12 curriculum, Standards of Learning (SOL), in June of 1995. The SOL in English, math, science, and social studies were distributed to school divisions in July of 1995 with the expectation that these standards would become the basis of curricular offerings in every school division in the Commonwealth. (p. 5)

Adoption of the SOL by the Virginia Board of Education provided opportunity to place measurable outcomes on schools to successfully implement academic content. Revised in 1996, adopted in October of 1997, and revised again on July 28, 2000, the

*Regulations Establishing Standards for Accrediting Public Schools in Virginia* (8 VAC 20-131-10 et. seq.) were used by the Virginia Board of Education to guide the standards movement in Virginia (Margheim, 2001). Published in the *Regulations Establishing Standards for Accrediting Public Schools in Virginia* (SOA), accreditation standards were “designed to ensure that an effective educational program is established and maintained in Virginia’s public schools” (Virginia Department of Education, 2000, p. 1). The “Purpose” was to (1) provide an essential foundation of educational programs of high quality in all schools for all students, (2) encourage continuous appraisal and improvement of the school program for the purpose of raising student achievement, (3) foster public confidence, (4) assure recognition of Virginia’s public schools by other institutions of learning, and (5) establish a means of determining the effectiveness of schools (Virginia Department of Education, 2000, p. 1). Accreditation standards establish guidelines for accrediting schools, criteria for measuring school performance, and strategies for assisting schools that do not meet desired SOL end-of-year test results.

The SOA (Virginia Department of Education, 2000) stipulate that public elementary, middle, and high schools meet pre-accreditation compliances before they can be considered for accreditation. The division superintendent and principal are required to submit the following information to the Virginia Department of Education: (1) plans for maintaining and improving standards from year to year, (2) verification to the Virginia Board of Education by July 1 of each year that the SOL is an integral part of the curriculum, and (3) verification that students taking SOL tests are receiving instructional resources (SOA, 2000). Each school that complied with pre-accreditation was rated as: “Fully Accredited, Accredited with Warning, or Conditionally Accredited” at the end of the 2004-05 school year (Virginia Department of Education, 2000, p. 32). Schools were rated “Fully Accredited, Accredited with Warning, Accreditation Denied, Conditionally Accredited, or Accreditation Withheld/Improving School Near Accreditation” following the end of the 2005-06 school year (Virginia Department of Education, 2000, p. 32).

Schools that did not meet the required pass rates of 70% in the four core academic areas were not rated Fully Accredited. For accreditation purposes, 75% of students enrolled in third and fifth grade English/Reading and 50% of all students

enrolled in third grade science and history/social science were required to accomplish pass proficient status. A rating of other than Fully Accredited suggested improvements are needed. Accreditation standards provided opportunity for those schools rated Accredited with Warning to improve the instructional methods being used to improve the success of students on SOL tests.

The Virginia Department of Education developed a process for reviewing and assisting schools Accredited with Warning. An academic review is performed prior to assessing a school's need to develop a "three year School Improvement Plan" with annual reports containing information related to the continued efforts of the school to attain Full Accreditation (Virginia Department of Education, 2000, p. 35). The Virginia Board of Education provided an updated list of instructional methods for schools to use in improving English and math instructional practices. The Virginia Department of Education maintained an updated "Technical Assistance Resource Document that contains the Virginia Board of Education board approved recommended list and background information on recommended models, board-approved selection criteria, and disclaimers" (Virginia Department of Education, 2001). Students were expected to participate in learning processes where SOL instructional practices are being implemented.

Students in grades seven and eight who did not pass SOL tests as required by SOA (Virginia Department of Education, 2000) faced the possibility of not being promoted. Consequences for grades nine through 12 could mean the difference between graduating or not graduating. Students in these grades had to pass a required number of SOL tests in the four core areas to receive the required number of verified credits. To achieve a verified credit, students had to perform at the Pass Proficient or Pass Advanced level on each SOL test taken and pass the course. The SOA (Virginia Department of Education, 2000) provided ample opportunity for students to pass SOL tests by allowing schools to develop remediation steps for assisting students who did not pass. Most contingencies for accommodating students have not been overlooked in an attempt to ensure student and school SOL success. The Standards of Accreditation regulations had special provisions for students with disabilities, students who transfer, and schools experiencing pre-accreditation compliance for the first time.

### *Accreditation and the Role of the Principal*

Principals assume responsibility for ensuring successful SOL implementation while shouldering the inherent consequences of SOL test results. The SOA (Virginia Department of Education, 2000) recognized the importance of the principal as suggested by the following:

The principal is recognized as the instructional leader of the school and is responsible for effective school management that promotes positive student achievement, a safe and secure environment in which to teach and learn, and efficient use of resources. As a matter of policy, the Board, through these standards, recognizes the critically important role of principals to the success of public schools and the students who attend those schools. The Board recommends that local school boards provide principals with maximum authority available under law in all matters affecting the school including, but not limited to, instruction and personnel, in a manner that allows the principal to be held accountable in a fair and consistent manner for matters under his direct control.

(p. 20)

The SOA (Virginia Department of Education, 2000) require principals to (1) maximize instructional time, (2) ensure student safety and eliminate unnecessary disruption of academic learning time, (3) review testing data and classroom instructional practices to detect where remediation is needed and methods of instruction can be improved, (4) maintain accurate student records, (5) evaluate teacher performance and prepare teachers through appropriate staff development measures, and (6) use dropout prevention strategies to keep students in school. The accreditation of a school relies on the use of practices that encourage successful student achievement. The importance placed on the principal as instructional leader in the standards movement has encouraged the use of research to indicate how principal practices are affecting student achievement and school accreditation.

#### Purpose of the Study

The purpose of this study was to investigate principals' practices in Virginia's public elementary, middle, and high schools that (1) distinguish Fully Accredited schools from Accredited with Warning schools and (2) are related to student performance on

Standards of Learning tests. Perhaps the results from the study will yield information that is beneficial to all educators and to those principals striving to meet the stringent demands of state standards regulations and federally mandated Annual Yearly Progress (AYP) goals established by No Child Left Behind Legislation adopted in 2002.

#### Problem Statement

The accreditation status of elementary, middle, and high schools in Virginia is based on the achievement results of students on Standards of Learning (SOL) tests. Since testing began in 1998, there has been an ongoing effort by state and local educators to identify variables that affect student performance on SOL tests. Though 92 percent of schools were rated Fully Accredited by the 2005-06 school year, a problem exists with some schools throughout the Commonwealth remaining Accredited with Warning. Because principals have been perceived to have primarily indirect effects on student performance, a study of principal practices that may directly affect student performance and school accreditation may have benefits for those principals who are struggling with state accreditation of their schools.

#### Literature Review

As schools meet or fail to meet state-mandated requirements for accreditation, principals' practices affecting student achievement are becoming more and more a focus of researcher interest in the educational community. Practices that target strategies for improving student success on states' standardized tests prompt researchers to focus on principals' implementation of those practices and the resulting effect on student achievement. Though it has been relatively difficult to determine a principal's effect on student achievement, general understanding of the importance of principal leadership in education has not wavered. Schools would basically be dysfunctional without leadership to organize and implement the educational processes needed to ensure student success (DiPaola & Tschannen-Moran, 2003). Principals continue to encounter increased responsibilities as high-stakes testing becomes an integral part of the standards process. The principal's accountability for improved student achievement and school success has shifted the role from one of management to one of instructional leader.

### *Researchers' Interest in Studying the Effects of Principals' Practices*

The reform movement in education motivated educators to study practices leading to increased student achievement and overall school success. As principals were identified as key individuals in establishing successful practices, researchers began studying the effects of principals' behaviors on student achievement. Principals' influences on student achievement have generally been studied from either a direct effect or indirect effect perspective (Heck, 1998; Leithwood & Jantzi, 1999; Witzers, Bosker, & Kruger, 2003). As the standards movement evolved, principals encountered a shift in emphasis in responsibilities. A particular responsibility that generates attention is the principal's use of practices that enhance a student's chances for achieving success on standardized tests.

Poor student performance on state-generated standardized tests, such as the Virginia Standards of Learning (SOL) tests, results in high stakes consequences for individual students who do not pass the required tests, schools that do not meet expected pass rates, and school districts that do not provide the leadership necessary for improving both student and school performance. Principals must be open to change and be willing to adopt new instructional strategies to meet the accountability demands associated with high stakes testing (Diapola & Tschannen-Moran, 2003). Principals are one step removed from classroom instruction and two steps removed from student learning; therefore, it is difficult for researchers to ascertain direct or indirect effects of principals' practices on student achievement and overall school success. The current wisdom suggests that the effect of principals on student learning is indirect through the principal's influence on teachers, the school culture, and the physical environment in which learning occurs.

### *Principal's Effect, Distributed Leadership, and Shared Leadership*

Identifying a principal's effect on student achievement becomes problematic when distributed leadership is assumed to be the appropriate approach to operating a school. Some researchers suggest that the responsibilities of the principal must be distributed to meet demands and expectations of the accountability movement. Elmore (2000) deemed that standards accountability creates a "knowledge-intensive enterprise" of "teaching and learning" that is too complex for principals to manage alone (p.15). It

takes a whole school community to meet the demands and expectations. Elmore (2000) points out that distributed leadership does not exclude the principal as sole leader of a school. The principal's role in distributed leadership implies that the principal as administrative leader collaboratively initiates improvement in teacher knowledge and instructional skills, common expectations for the productivity of all learners, and collective accountability for the performance of the school.

Distributed leadership embodies a unity among the members of a school's educational community (Poff, 2008). This unity is developed through principal leadership. As a result, the school uses its instructional skills collectively and aspires to a common philosophy that supports the school's culture, assumes high accountability for student performance, and supports strengthening of knowledge within the entire teaching and learning community.

Some researchers (Marks & Printy, 2003; Marzano, 2003) suggest that principals alone cannot assume accountability for the reform of their schools. Both leadership and accountability must be spread across all members of the school community. Marzano recognized the increasing number of demands placed on the role of the principal since the effective schools movement began. He surmised that the success of a school could not be accomplished solely by the principal and suggested the following:

The notion that an individual can effect change by sheer will and personality is simply not supported by the research. In fact, the evidence supports the assertion that a substantive change initiative must be supported both by administrators and by teachers. (p. 174)

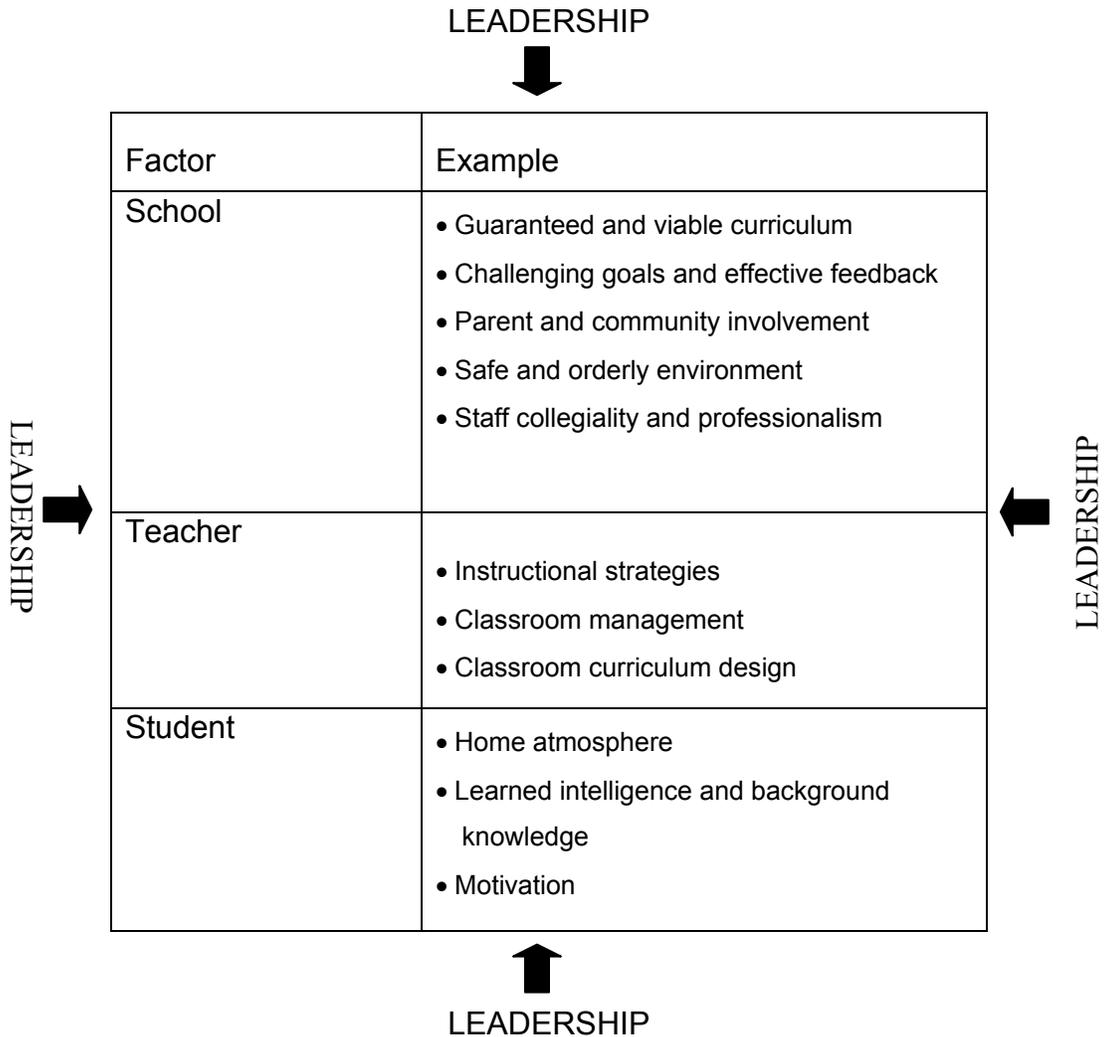
Shared leadership is recognized as a necessity if successful school reform is to occur. The complexities of the principal's job and the ensuing demands have moved researchers to study how distributed leadership affects student achievement. According to Marks and Printy, "Schools depend on leadership throughout the organization to shape productive futures through a process of self-renewal" (p. 370). Principals and teachers are expected to demonstrate a high level of support for improving the achievement of all students. Marzano (2003), likewise, supported the notion of shared leadership and its impact on change and reform in education. He emphasized that the

strength of school leadership affects all aspects of the educational environment and those who participate administratively, instructionally, and as a student.

Figure 1 is a diagram of the relationship that exists between school leadership and other school variables as described by Marzano (2003). Principal leadership is depicted as an encompassing influence on the school, teachers, and students. The various leadership variables affecting student learning and success for each school factor are fundamental to creating a teacher effect on student achievement. For a

## Leadership Factors Affecting Student Achievement

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*Figure 1.* Marzano's complete representation of a leadership model for change at all levels. From "What Works in Schools," by R.J. Marzano, 2003, p. 173. Copyright 2003 by the Association of Supervision and Curriculum Development. Reprinted with permission.

school to improve, the leadership must incorporate a more direct and proactive stance toward a comprehensive approach to teacher instruction and student success.

According to Danielson (2002a):

Serious school improvement . . . does not consist of merely fiddling around the edges of the school's organization or establishing a partnership with a business community; rather, the process should be comprehensive and should encompass everything done in the school. (p. 117)

At the heart of a comprehensive approach to student learning is evidence of another consideration. The closer the principal is to the instructional process, the greater the opportunity for the principal to have a significant effect on student achievement. If strong indicators of a principal's effect on student achievement exist, would the effect, whether direct or indirect, be mitigated by a role of distributed leadership? Fiedler and Garcia's (1987) development of a cognitive resource theory of leadership and responding group performance lends insight into a possible approach for indicating direct or indirect effects of principal leadership on school outcomes.

Fiedler (1994) recognized several cognitive resources that affect leadership. These cognitive resources are the "intellectual abilities, experiences, and job-relevant knowledge and skills" used by leaders to influence the performance of an organization (Fiedler, 1994, p. vii). Fiedler linked cognitive resource theory with "contingency theories" which "postulate that situational factors moderate the relationship between the leader's personality or behaviors and organizational performance (Fiedler, 1994, p. xi). Fiedler's (1994) theory can be applied to effects of principals and distributed leadership on teacher and student performance if cognitive resources are identified as factors that influence school leadership, student performances are recognized as outcomes, and principals' practices are substituted for behaviors.

The theory would be: If principals acquire adequate leadership skills, the leadership practices used would strongly enhance group instructional practices and student achievement. Principal leadership could predict a significant direct effect on teacher performance and significant indirect effect on student performance. If the principal displays inadequate leadership skills, the instructional group could acquire the necessary distributed leadership skills required to enhance student performance. Thus,

distributed leadership could predict a significant direct effect on student performance in the absence of a principal's effect. Inability of the principal or the instructional group to provide adequate leadership could predict an insignificant direct or indirect effect of either on student performance. Student performance in the absence of principal leadership or distributed leadership could be determined by external influences. In light of principal effect and distributed leadership concepts, Fiedler and Garcia (1987) provide a model applicable to developing an approach for studying the variables that connect principals' practices and their effect on student achievement (see Figure 2). The distributed leadership concept, however, is left for further study.

#### *Why Study the Effects of Principals' Practices on Student Achievement and Accreditation?*

Prior studies (Edmonds et al., 1979; Marzano, 2003, and others) support the importance of the principal's leadership role in education and lend purpose to further study of the principal's effect phenomenon. Much ambiguity remains in this phenomenon. Perhaps alternate approaches can be developed for inspecting principals' practices and their effects on student achievement, void of teacher influence, distributed leadership, or shared leadership. The changing and ever-growing demands placed on principals throughout the years make the findings of early studies irrelevant to the new work of principals, thus necessitating continuing research. The role of instructional leader remains a mystery. Some principals seem to have mastered it (whatever it is) while others seem to miss the point entirely. Further research may identify those elements of the role that make it more comprehensible and transferable among principals. Of particular continuing interest is the effect of what principals do in this role of instructional leader that affects student learning. This, too, remains to be identified.

#### *Traditional Role of the Principal*

The roles and accompanying expectations of principals have varied as much as the responsibilities required for being effective in this type of educational leadership position (*The Institute for Educational Leadership, 2000*). Principals' practices and effects, direct or indirect, were not initially measures of principal leadership performance. Prior to the effective schools movement, the effectiveness of the principal was measured by how well certain leadership expectations were met. Principal effect on

student achievement lay at the periphery of administrative importance. Each stakeholder, principal included, conceptualized evaluative perceptions of what a good principal did, or needed to do, to be effective. Expectations for administrators included being an administrative leader, building manager, public relations liaison, instructional staff mentor, and instructional leader (Hallinger, Bickman, & Davis, 1996; *The Institute for Educational Leadership*, 2000; Lambert, 1998; Whitaker, 2003). Elmore (2000) termed such expectations as “buffers” (p. 6).

Principals, acting as instructional managers, or middle managers, were held responsible by school boards and superintendents for providing school environments free of outside influences that might affect teacher performance while projecting an image that fostered community support (Blank, 1987; Elmore, 2000; *Institute for Educational Leadership*, 2000; DiPaola & Tschannen-Moran, 2003, Cooley and Shen, 2003). Although the instructional role and influence of principals has always been present, principals were perceived as emphasizing the managerial part of their jobs. They were seen as providing managerial stability in the organization rather than focusing on instruction, curriculum, learning, assessment, and student achievement (*The Institute for Educational Leadership*, 2000).

Changes in the expected responsibilities of principals from managers to instructional leaders occurred during school improvement efforts in the 1970s (Hallinger & Heck, 1996). As education became more complex and demanding, a greater dependency on principals for instructional leadership was generated. Void of administrative leadership qualities, teachers generated a high level of dependency on principals (Lambert, 1998). Principals nurtured this dependency in the educational work environment, and teachers developed such high levels of dependency that they simply could not perform without the candid leadership provided by the principal (Lambert). As the principal’s influence over teacher performance gained strength, perceptions about the principal’s role as instructional leader changed.

With the development of the effective schools models in the early 1980s, understanding who influenced student achievement became a more important concern

### Cognitive Resource Theory

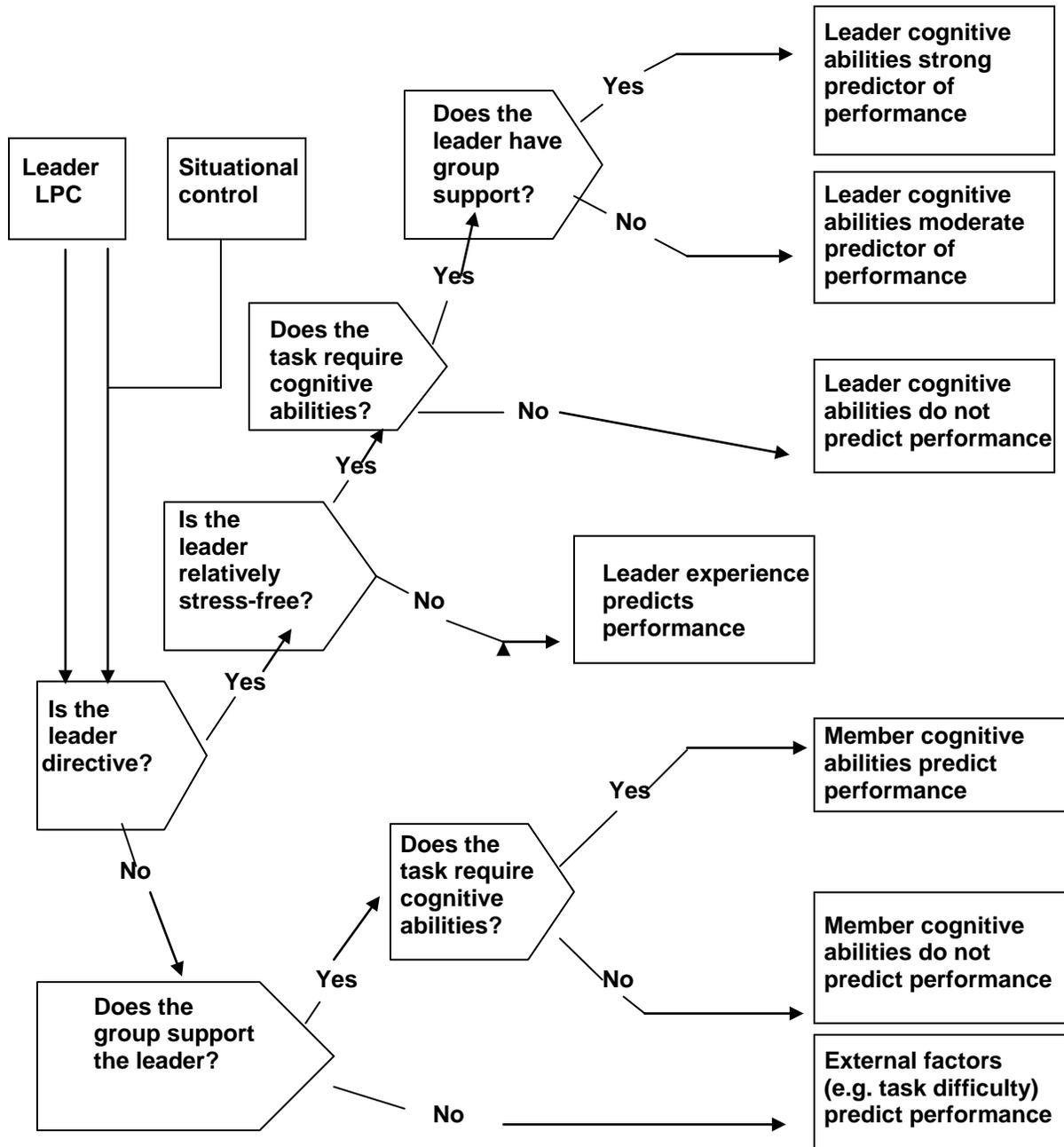


Figure 2. A schematic representation of the cognitive resource theory.

From "New Approaches to Effective Leadership: Cognitive Resources and Organizational Performance" by F. Fiedler and J. Garcia, 1987. Copyright 1987 by John Wiley and Sons. Reprinted with permission.

than what schools were producing collectively to satisfy political and public sentiment. (Hallinger, Bickman, & Davis, 1996). The effective schools movement ushered in a renewed effort to indicate which characteristics of leadership were responsible for affecting student outcomes. Identifying characteristics and practices of principals that influenced student achievement and school performance were difficult. There were efforts to identify functions that principals performed to help their schools become more effective.

Functions performed by principals were studied as influencing variables on student achievement. How well principals adapted their functions to changes in instructional practices encouraged by societal and governmental demands had a profound effect on student success (DiPaola & Tschannen-Moran, 2003). In 1982, Brookover identified the principal's function in education according to "five factors that promote student achievement" (Chapman, 1998). According to Chapman (1998), the factors included the promotion of:

- (1) a school climate conducive to learning,
  - (2) an emphasis on basic skills instruction,
  - (3) teachers who hold high expectations for all students to achieve,
  - (4) a system of clear instructional objectives for monitoring and assessing student performance, and
  - (5) a school principal who is an instructional leader.
- (pp. 12 -13)

It should be remembered that the establishment of functions that indicated influence on student achievement were established in an era of the effective schools movement. Principals as formal leaders were expected to be cognizant of their ability to implement effective school programs. It was vital that principals give attention to managing all aspects of a school while maintaining ever higher expectations for student learning success (Lambert, 1998). Effective leadership by the principal was apropos to all conditions founded and generated by the effective schools movement. The effective schools movement gradually moved beyond the collective nature of determining who was responsible for student achievement. As the bar of accountability began to rise, greater expectations for those responsible for individual student achievement began to emerge. With these expectations, the focus on who was responsible for student

achievement moved to the forefront of direct accountability and influence on individual student achievement.

### *Current Expectations of the Principal's Role*

Earlier studies of the principal's role in education provided related information that aided researchers in the study of principals' effects on student achievement and successful schools. The research fell into two categories, each with different intentions for determining what practices were used to gain results in schools. The first category of studies that originated in the early 1970s focused on what became known as "effective schooling research" (Cotton, 2003, p. 2). Differences between "high-achieving and low-achieving schools" were based on studies of schools that had similar characteristics among student populations and the variables that influenced their success (Cotton,p.2). The second category included studies conducted in the early- to mid-1980s that focused on the instructional practices of the principal (Cotton, 2003).

Between 1970 and 1980, changes in the roles and responsibilities of principals expanded in complexity. The expectations for principals to accomplish more in terms of instructional accountability have become even greater. Earlier attempts by researchers to identify principals' effects on student achievement were mired in attempts to understand the principal's role in the effective schools movement. Past roles and expectations of principals were not well defined. With the complexities encompassing the role of the principal today, it still remains difficult to determine which practices of principals are more closely linked to student achievement. Cooley and Jianping (2003) appropriately emphasized the lack of understanding of the principal's effect when they commented, "Community expectations, bureaucratic demands, changing school cultures, diverse learners, and evolving social systems outside the classroom have created unclear expectations for the role of the principal" (p. 10). However, the perspective on expectations drastically changed when states began establishing educational standards, mandating implementation of specific content, and testing student performance on the standards. Principals are now held accountable for meeting standards and the implementation of practices leading to improved student success on standardized tests and overall school success.

The standards movement of the 1990s generated new expectations for the principal that were more diverse and demanding than those found in the effective schools movement of the 1970s and 1980s. Currently, states recognize the need to develop higher educational standards for strengthening academic accountability for school districts and individual schools. The requirements are based on targeted measures of educational progress usually determined by some form of statewide-standardized testing results. The measures are used to indicate district- and school-wide achievement based on individual student performance. Each school district recognizes that the principal's level of administrative leadership is crucial to implementation of state standardized programs. With such recognition comes the additional responsibility of meeting new challenges produced by more demands, comprehensive expectations, and accountability (Cooley & Jianping, 2003).

#### *Expanding Accountability*

State demands are now coupled with federal efforts to improve student academic performance. This became evident when greater demands for state accountability were implemented through the No Child Left Behind (NCLB) Act signed into law on January 8, 2002. Principals' accountability for improving their schools is greater than was ever anticipated during the effective schools movement. According to McLeod, D'Amico, and Protheroe (2003), "As with so many other educational mandates and regulations, no matter what their origin, many of these related to NCLB eventually fall to the principal to carry out" (p. 2). Principals can no longer perform their responsibilities simply as building level managers, administrators, or instructional leaders. Principals' accountability falls under the umbrella of high stakes testing and stakeholder accountability (McLeod et al., 2003). With the expectations for principals created through NCLB, researchers discovered a new set of variables related to the principal's leadership that could affect student achievement.

No Child Left Behind provides specific expectations for the leadership roles principals are to assume and the practices they are to apply to meet high academic accountability expectations. Principals will improve student achievement, manage the quality of the instructional staff, and maintain a high level of curriculum and instruction. Principals are expected to ensure student progress and implement methods for

managing, analyzing, and disaggregating testing data to measure student academic progress (McLeod et al., p. 3, 2003). Community stakeholders are to be engaged and periodically informed about school performance and achievement progress. At the end of each school year, principals' schools are required to meet "adequate yearly progress" (AYP) goals (McLeod et al., p. 2, 2003). Schools that meet AYP are rewarded. Consequences for failure to meet AYP can be severe. Failure can result in the denial of accreditation, re-staffing, loss of federal funds, loss of students through the option to attend schools that meet AYP, and rigorous state-generated corrective actions.

The combination of state and federally mandated standards caused researchers to revitalize their efforts to better understand not only the roles and expectations of principals but the practices they employ to benefit student achievement. Principals are more commonly assuming greater accountability for an all-encompassing practice of management, administration, and instructional leadership that has a profound effect on student outcomes. As part of a more inclusive leadership role, they are expected to be motivators that shape the total educational community (Renchler, 1992). Leadership has taken on new meaning and is regarded as one of the most important conditions of effective educational reform. A new realm of expectations for principals was ushered in with the reform of education in the standards movement.

Marzano (2003) recognized the importance of the principal as a conceptual leader and one who is paramount to reform efforts. A conceptual leader is one who is willing to meet the expectations demanded of them by developing unity among parents, teachers, students, central office administration, school boards, and communities for the sole purpose of collectively improving student achievement. The principal as leader must gain a renewed perspective of educational accountability, insight into the importance of the principal's role in the reform effort, and a greater willingness to embrace the responsibilities that accompany greater expectations for the principal's role. Principals must conform to the goals and principles for improving student achievement that are well established within the core of required standards. The individual who assumes the role of the principal can not withstand the onslaught of accountability required by the standards, unless they are willing to conform to the movement itself. Principals, therefore, are expected to buy into the total process of the

standards movement while developing their potential for ensuring higher levels of student achievement.

As the nation continues to look for ways to improve education, it is seeking strong principal leadership. The leadership is expected to strengthen instructional programs in all schools and produce high academic achievement on standardized tests. Failure to meet achievement targets through the process of mandated accountability measures can be detrimental to an array of viable educational programs and services within the nation, state, school district, or school. Thus, it becomes the responsibility of school district leadership to reexamine the role of the principal in a reform movement that involves high stakes testing and school leadership accountability. District leadership needs to adopt policies that allow the leadership of a school the autonomy to build organizational structures that are conducive to improving teacher learning, teacher instruction, learner achievement, and, ultimately, accountability that meets the targets of success for all stakeholders.

#### *Standardizing Achievement*

A more recent movement, and one that stirs much controversy and concern among educators, parents, and communities, is that of standardized testing. The comprehensive approach to teaching and learning has given way to one that is more targeted. Teachers are required to target content, teach content, test content, and remediate content. Teachers are required to educate students with specifically designed content directed at achieving basic goals. Testing all students for understanding of the content provides data for holding teachers and administrators accountable for student performance.

Achievement is measured by individual student performance, school level performance, school district performance, and an accumulative state level of performance on state generated standardized tests. With little regard for such influences as background, ethnicity, socioeconomic status, gender, home structure, family influence, peer influence, location of residence, cognitive abilities, and location of residence, all students must endure standardized testing (or some alternative) as a measure of academic achievement. Standardized testing is the single most critical

element used to drive education reform and determine the success of educational systems. According to Danielson (2002):

Standardized assessments, by which I mean multiple-choice, machine-scorable tests, can provide schools with information about students' acquisition of basic knowledge and cognitive skills. . . . Yet despite their strengths, they can measure only a relatively small percentage of desired learning. (p. 7)

Standardized measures can be used to assess school improvement efforts and instructional effectiveness. Student results from standardized testing are driving national and state educational reform efforts. Assessment of a school's ability to meet target scores for standardized testing is required. Schools that produce significant yearly academic results will not merit the sanctions and scrutiny from national and state officials as those schools that do not perform well. Without strong leadership from the principal, coordination of efforts towards improving student achievement are not likely to occur. The principal's comprehensive approach to teaching and learning is still vital to the overall importance and success for maintaining educational equity and balance for all students. Yet, it is still difficult to ascertain the direct or indirect effects of principals' practices on student achievement.

#### *Direct and Indirect Effects of Principal Leadership*

Understanding of the principal's effect on student achievement has been obscured by the focus of past research. The organization of schooling prior to and including the 1960s and 1970s was "based on locally centralized bureaucracy" (Elmore, 2000, p. 5). Principals, board members, and administrators participated in a practice known as "loose coupling" (Elmore, 2000, p. 5). Loose coupling involved the blocking of outside influences by members of an educational organization that could have interfered with what teachers were teaching in the classroom (Elmore, 2000). The results of learner outcomes were not revealed to the public. Research had little practicality during the period (Hallinger & Heck, 1996). Studies of influences on student achievement were basically non-existent. Research methods did not change for several years.

Hallinger and Heck (1996) revealed that studies of the effects of administrators conducted from 1967-1980, a notable period of the effective schools movement, were not distinguishably different from those done in earlier years. Though the studies were

considered to be “state-of-the-art” and focused more on “student outcomes,” they continued to rely excessively “on survey designs, questionnaires of dubious reliability and validity, and relatively simplistic types of statistical analysis” (Hallinger & Heck, 1996, p. 8). However, the research during the depicted time period raised the consciousness of educators interested in improving the instructional influences affecting student outcomes. It raised awareness of those responsible for implementing educational programs at federal, state, and district levels. The results further created a heightened need for improving education overall. A residual of the movement involved holding someone accountable for implementation of the instructional process at the school building level. At the forefront of individuals targeted for guarding instructional implementation and student achievement results was the principal.

Principals were expected to be more directly involved in the implementation of instruction that included influencing teacher practices and ultimately student outcomes. This ushered in a renewed interest for researchers to study the impact of principals’ practices affecting student achievement. Literature drawn from the effective schools movement of the 1980s provided researchers with information that induced the use of empirical research methods for studying the various influences associated with improved school performance (Hallinger & Heck, 1996). Researchers included a number of specific variables to be studied on various aspects of effective schools and eventually targeted principal leadership. Research was generated to gain better insight into administrative and instructional effects on student outcomes. Heck (1998) explained:

In part driven by policymakers’ concerns over educational accountability and in part the result of researchers’ concerns that educational outcomes must be at the heart of examinations of administrative behavior and its impact on school improvement, studies on principal leadership expanded in scope conceptually, methodologically, and geographically between 1980 and 1995. (p. 51)

The effects were not considered as direct or indirect influences. It was difficult to connect principals’ practices to student outcomes.

In the late 1980s and early 1990s researchers attempted “to link empirical efforts to theoretical issues involving relationships among school environment factors, principal

leadership, in-school processes, and school outcomes” (Hallinger & Heck, 1996 p. 15). Direct or indirect effects of principal leadership were difficult to measure with researchers expressing skeptical views for indicating either effect. For example, Witziers, Bosker, and Krüger (2003) suggested that effects could only be indicated as indirect influences if influences could be measured at all. Leithwood and Jantzi (1999) concluded that studies of the effects of principal leadership, direct or indirect, provided negligible findings. Researchers’ use of different methods for studying intervening variables and their effects on student achievement yielded some favorable findings. Regardless of the obscure nature and relevance of the studies, researchers came to a common understanding that principals’ practices produced some type of effect.

Various researchers conveyed the importance of indicating which principals’ practices had the greater influence on student achievement and school success (Brewer, 1993; Hallinger, Bickman, & Davis, 1996; Hallinger & Heck, 1996; and Zigarelli, 1996). Efforts to study principal effects evolved from a qualitative studies approach, used prior to and during the effective schools movement, to a quantitative approach. With the inception of the effective school reform movement and the more recent standards movement of the 1990s and early 2000s, quantitative research methods have been applied to study significant relationships among principals’ practices, student achievement, and school performance.

### Theory

Results of Standards of Learning testing between the school years 1997-98 and 2005-06 provide dramatic differences in success rates. Only 2% of the public schools in Virginia were Standards of Learning (SOL) Fully Accredited in 1998. Revisions in the Standards of Accreditation in 2000, expanded Standards of Learning (SOL) instructional resources, benchmark testing, and improved division and school practices resulted in 92% of the schools in Virginia meeting the SOL rating of Fully Accredited (Virginia Department of Education, 2006). Awareness of these results should stimulate inquiry into the practices, especially leadership practices at the school level, being used to attain such a high rate of full accreditation.

Seven sets of principal practices, hereafter referred to as leadership domains, were identified as potentially having an effect on student achievement and,

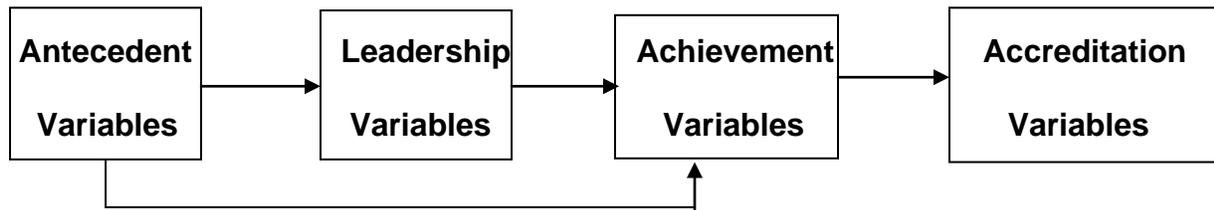
consequently, school accreditation. These practices are: (1) leadership, (2) curriculum alignment, (3) curriculum implementation, (4) student motivation, (5) intervention strategies, (6) data analysis, and (7) assessment. The percentage of free or reduced-price lunches was used as a control variable, and the following descriptive data were collected on both principals and teachers: gender, highest degree earned, current assignment, years experience, professional certification, and school setting. Teachers were asked to report whether they teach an elementary, middle, or high school SOL subject and an SOL subject that requires a culminating end-of-year test. Free and reduced-price lunches, principals' practices, and descriptive data were the predictor variables in the theory. The criterion variable was the accreditation status of the school. Accreditation status was based on the percentage of students meeting the state requirement for accreditation. Those schools not meeting the requirement were labeled as accredited with warning.

Having considered the predictor and criterion variables for this study, the following hypothesis was developed: The principal's intentional implementation of the selected practices in public elementary, middle, and high schools improves student achievement on SOL tests and, consequently, distinguishes schools that are fully accredited from schools that are accredited with warning.

#### *A Model of the Theory*

A conceptual framework developed by Bossert et al. in 1982, reflected in Figure 3, depicts the first two variables as an "antecedent system of causal relationships" and intervening variables situated in a "mediation position" guides the study (Pitner, 1988, pp. 99-100). The model is structured as a "mediated-effects with antecedents open paths model" (Hallinger, Bickman, & Davis, 1996, p. 530). The open paths model has recursive paths, thus enabling the researcher a better opportunity to identify direct effects of principals' practices on accreditation status. School effects and home effects function as antecedent variables affecting principal practices and, consequently, student achievement and accreditation status (see Figure 4). A model that encompasses an integration of variables under consideration in the study is in Figure 5.

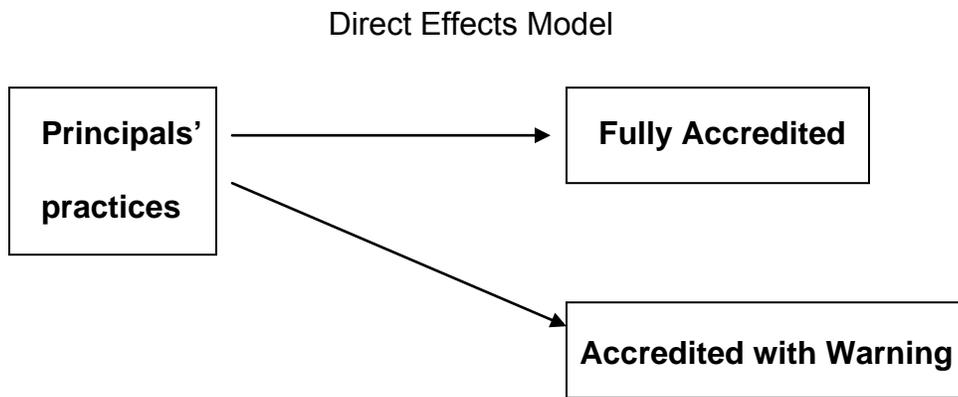
### Conceptual Framework Model



*Figure 3:* Model of effects of principals' practices on achievement and accreditation. Antecedent with mediated-effects model.

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From "School Context, Principal Leadership, and Student Reading Achievement," by P. Hallinger, et al., 1996, *The Elementary School Journal*, 96, p. 530. Copyright 1996 by The University of Chicago Press. Adapted with permission of the publisher.



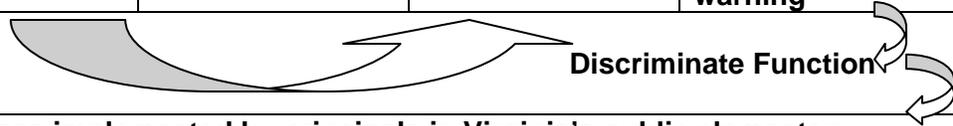
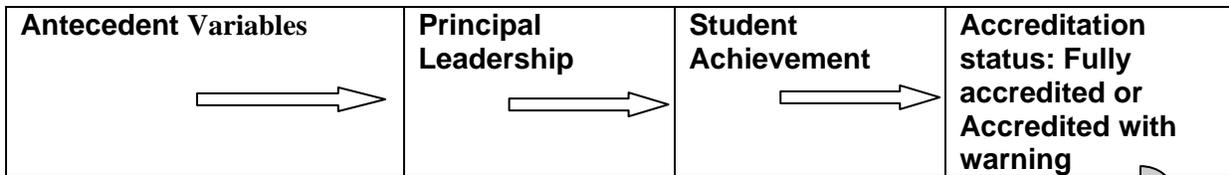
*Figure 4:* Model of the effect of principal's practices on school accreditation.

**A DIAGRAM OF THE THEORY:  
PRINCIPALS' PRACTICES THAT AFFECT  
STANDARDS OF LEARNING STUDENT ACHIEVEMENT AND ACCREDITATION**

**Q. What practices implemented by principals in Virginia's public elementary, middle, and high schools improve student achievement on Standards of Learning (SOL) tests and, consequently, affect the accreditation status of the school?**

<p><b>Antecedent or Descriptive Variables</b></p> <p><u>Student SES:</u> Percentage of free or reduced-price lunches.</p> <p><u>Principals and Teachers:</u> Gender; Highest degree; Current assignment; Years experience; Years current assignment; Professional certification; School setting; Teach SOL subject; and Teach SOL subject with culminating test.</p>	<p><b>Leadership Variables</b></p> <p><u>Principals' Practices:</u></p> <p>Leadership; Student motivation; Intervention strategies; Data analysis; Assessment; Curriculum alignment; and Implementing curriculum.</p>	<p><b>Intervening or Mediating Variables</b></p> <p><u>Student Achievement:</u></p> <p>Math English Social Studies Science</p>	<p><b>Dependent Variables</b></p> <p><u>Accreditation Status:</u></p> <p>Accredited with warning  Fully accredited</p>
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Assumption of Influence	Assumption of Causality	Assumption of Effect	Assumption of Causality and Effect
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**Hypothesis: Practices implemented by principals in Virginia's public elementary, middle, and high schools improve student achievement on Standards of Learning (SOL) tests and, consequently, affect the accreditation status of schools.**

Figure 5: A theoretical model that encompasses a theory statement, integration of variables under consideration, and a hypothesis.

From "School Context, Principal Leadership, and Student Reading Achievement," by P. Hallinger, et al., 1996, *The Elementary School Journal*, 96, p. 530. Copyright 1996 by The University of Chicago Press. Adapted with permission of the publisher.

## Review of the Research

A study of the research was conducted to determine principals' practices that have a significant effect on student achievement. The practices were divided into seven domains: (1) leadership, (2) curriculum alignment, (3) curriculum implementation, (4) student motivation, (5) intervention strategies, (6) data analysis, and (7) assessment. Studies were used to support the theory being applied in the study. Each study is described, including tables and figures, and is introduced under the section on *Principals' Practices Affecting Student Achievement*. The information in the leadership section may be referenced when the information in subsequent domains are reviewed.

## Definitions

The definitions in Table 1 have four components: (1) the variable name -- the word or phrase that identifies a variable in the study, (2) the constitutive definition -- the explanation of the idea behind the variable, (3) the operational definition -- the measure used to collect the data on the variable, and (4) the coding of the data -- the numerical values used in SPSS to identify measured levels of the variable.

Table 1

*Definitions*

Variable	Constitutive definition	Operational definition	Codes
Accreditation status of elementary, middle, and high schools in Virginia.	The status assigned to schools in Virginia by the Virginia Board of Education based on student test results in the four core areas of science, mathematics, English, and social studies.	<p>The assigned accreditation status for 2005-2006:</p> <p>Accredited with Warning: A school does not attain the required pass rates on SOL tests in at least one of the four core subject areas.</p> <p>Fully Accredited: A school that has a 70% pass rate or higher on each of the four core subject areas, 75% pass rate or higher in third and fifth grade English, and 50% pass rate or higher in third grade science and history/social science.</p>	<p>1 = Accredited with Warning. 2 = Fully Accredited.</p>
Gender	Gender identification provided by principals and teachers responding to the questionnaire.	<p>Gender identification:</p> <p>Male and female.</p>	<p>1 = Male. 2 = Female.</p>

*(table continues)*

Table 1 (continued)

Variable	Constitutive definition	Operational definition	Codes
Highest degree earned.	Highest degree earned by principals and teachers responding to the questionnaire.	Highest degree: Bachelor's, Master's, Education Specialist, Certificate of Advanced Graduate Study; Doctorate.	1 = Bachelor's. 2 = Master's. 3 = Education Specialist. 4 = Certificate of Advanced Graduate Study. 5 = Doctorate.
Assignment.	Principal and teacher school level assignment.	School level assignment:  Elementary - grades three, four and five.  Middle – grades six, seven, and eight.  High – grades nine, 10, 11, and 12.	1 = Elementary. 2 = Middle. 3 = High. 4 = Other.
Years experience.	The number of years of experience as a principal or teacher.	The number of years experience provided by teachers and principals responding to the questionnaire.	___ Number Years of experience.

*(table continues)*

Table 1 (continued)

Variable	Constitutive definition	Operational definition	Codes
Years in current assignment.	The number of years principals and teachers have been assigned to their current position.	The number of years in their current assignment provided by teachers and principals responding to the questionnaire.	___ Number Years in current assignment.
Professional certificate.	The type of educational licensure held by principals and teachers.	<p>The assigned certification:</p> <p>Fully licensed principals and teachers qualify for a five-year, renewable license in Virginia.</p> <p>Provisionally licensed principals and teachers qualify for three-year non-renewable license in Virginia.</p>	<p>1 = Fully Licensed.</p> <p>2 = Provisionally licensed.</p>
Standards of Learning subject taught.	The type of Standards of Learning subject taught or not taught.	Teachers who teach a Standards of Learning subject in math, English, science, or social studies.	<p>1 = No (Do not teach).</p> <p>2 = Yes (Teach).</p>

(table continues)

Table 1 (continued)

Variable	Constitutive definition	Operational definition	Codes
Standards of Learning culminating test.	Teachers who teach Standards of Learning subjects requiring yearly end-of-course tests.	Teachers who teach a Standards of Learning subject that requires a culminating test in Math, English, social studies, or science.	1 = No (Do not teach). 2 = Yes (Teach).
School setting.	Location of school indicate by principals and teachers.	Principals and teachers indicate the location of their instructional setting as urban, suburban, rural, or other.	1 = Urban 2 = Suburban 3 = Rural ___ Other
Socio-economic status of the student body.	The economic background of the families of the students in the school.	The percentage of students who receive free or reduced-price lunches.	The percentage of students who receive free or reduced-price lunches.

*(table continues)*

Table 1 (continued)

Variable	Constitutive definition	Operational definition	Codes
<p>Principals' practices in elementary, middle, and high schools.</p>	<p>Principals' practices that influence (1) student test results in the four core areas of science, mathematics, English, and social studies and (2) accreditation status.</p>	<p>This concept has two measures: (1) the principal's observation that practices are being implemented and (2) the teacher's observation that the practices are being implemented. If the teacher(s) indicated that the principal implemented the practice, then the principal was credited with that practice.</p>	<p>Principal implements each practice:  0 = No 1 = Yes</p>
	<p>(1) leadership practices –</p> <p>(a) creating a strong sense of mission,</p> <p>(b) setting goals for student achievement,</p>	<p>Total of items 1-5 on the Principals' Practices Questionnaire (PPQ) in Appendices F and G.</p> <p>Total of items 6-10 on the PPQ in Appendices F and G.</p>	

*(table continues)*

Table 1 (continued)

Variable	Constitutive definition	Operational definition	Codes
	(c) building a strong culture of collaboration.	Total of items 11-15 on the PPQ in Appendices F and G.	
	(2)curriculum alignment –  (a) connecting specific content to state standards,  (b) reviewing teachers instructional documents,	Total of items 16-20 on the PPQ in Appendices F and G.  Total of items 21-25 on the PPQ in Appendices F and G.	
	(3) implementing curriculum -  (a) using guides,	Total of items 26-30 on the PPQ in Appendices F and G.	
	(4) motivation of students -  (a) knowing student conditions,	Total of items 31-35 on the PPQ in Appendices F and G.	

*(table continues)*

Table 1 (continued)

Variable	Constitutive definition	Operational definition	Codes
	(b) recognizing student accomplishments,	Total of items 36-40 on the PPQ in Appendices F and G.	
	(c) providing additional learning time.	Total of items 41-45 on the PPQ in Appendices F and G.	
	(5) intervention strategies –		
	(a) using student achievement data,	Total of items 46-50 on the PPQ in Appendices F and G.	
	(b) developing varied approaches to instruction,	Total of items 51-55 on the PPQ in Appendices F and G.	
	(c) involving the community in the learning process.	Total of items 56-60 on the PPQ in Appendices F and G.	
(6) data analysis –			
(a) collecting data,	Total of items 61-65 on the PPQ in Appendices F and G.		
(b) analyzing data,	Total of items 66-70 on the PPQ in Appendices F and G.		

(table continues)

Table 1 (continued)

Variable	Constitutive definition	Operational definition	Codes
	(c) using data.	Total of items 71-75 on the PPQ in Appendices F and G.	
	(7) assessment – (a) training staff,	Total of items 76-80 on the PPQ in Appendices F and G.	
	(b) monitoring student progress	Total of items 81-85 on the PPQ in Appendices F and G.	

*Note:* Variable and constitutive definitions, pages 42-46, in Table 1 retrieved from the following study -- Governor's Best Practice Centers, (2000). *A study of effective practices in Virginia's schools: Educator's perspectives of effective practices leading to student success on sol tests* (pp. 1-44). Richmond, VA: Virginia Department of Education. Adapted with permission of the Virginia Department of Education.

## Leadership Practices Affecting Student Achievement

Leadership practices are hypothesized as having a direct or indirect effect on student achievement. Both principal and teacher leadership are considered within the context of the term leadership. The context in which leadership is studied depends on what the researcher is trying to find and the research method used. Leadership creates a strong sense of mission, strong culture of collaboration, and sets high expectations for student achievement.

The Governor's Best Practice Centers (2000) concluded that leadership ranks highest in improving student achievement among educators in selected low socioeconomic public elementary, middle, and high schools in Virginia, rated Standards of Learning (SOL) Fully Accredited. Seven of 16 effective schools practices were identified by educators as important to student achievement on SOL tests. The percentage of times each practice was voluntarily identified by schools participating in the study and interview groups of two and three in each school was used to determine which practice yielded the highest level of importance. Mean Likert-scale ratings were calculated for each practice mentioned, and the percentage of times effective practices were voluntarily identified by interview participants was recorded. Seven of 16 effective practices, reflected in Table 2, yielded higher percentages and importance ratings than the other nine effective practices.

The authors of the study concluded that leadership practices identified by teachers and administrators had a positive effect on student achievement. Student achievement was gathered from results on SOL tests. The schools participating in the study were rated SOL Fully Accredited. Of the 26 schools participating in the study, 25 identified leadership as an important factor in their schools. Twenty of the 25 schools had two interview groups that identified leadership as an important factor and 17 had three interview groups that identified leadership as an important factor. Leadership yielded a mean Likert scale rating of 3.69 and the percentage of times leadership was volunteered as an important factor by interview groups was 92.0. It was indicated that principals created a "clear vision and mission, . . . took steps to keep informed of what was going on in the classrooms, . . . and . . . created a sense of shared-work ethic among staff" (Governor's Best Practice Centers, 2000, pp. 14–15).

Table 2

*The Importance of Seven Effective Practices in Effective Schools, Virginia N=26*

Effective practice	N <sup>a</sup>	Interview groups <sup>b</sup>	Interview groups <sup>c</sup>	Mean Likert scale rating <sup>d</sup>	Percentage of times volunteered <sup>e</sup>
Leadership	25	20	17	3.69	92.0
Student motivation	23	16	6	3.43	84.0
Intervention strategies	25	23	10	3.40	79.0
Data analysis	22	21	13	3.51	76.0
Assessment	24	20	11	3.40	76.0
Curriculum alignment	23	18	12	3.69	72.0
Curriculum mapping and pacing	23	21	12	3.90	71.0

*Note.* <sup>a</sup>Number of schools naming the practice, out of 26 schools. <sup>b</sup>Number of schools having at least two interview groups naming the practice. <sup>c</sup>Number of schools having all three interview groups naming the practice. <sup>d</sup>Mean Likert-scale rating: 1 = Less important, 2 = Somewhat important, 3 = Important, and 4 = Very important. <sup>e</sup>Percent of time practice was a volunteered response. From “A Study of Effective Practices in Virginia’s Schools: Educator’s Perspectives of Effective Practices Leading to Student Success on SOL Tests” by Governor’s Best Practice Centers, 2000, pp. 14-23. Richmond, VA: Virginia Department of Education. Reprinted with permission.

Zigarelli (1996) found that school culture and principal leadership had a positive effect on student achievement. He conducted a study of the effects of six effective schools variables on student achievement. Student achievement data were extracted from the National Educational Longitudinal Study of 1988 (NELS 88) for 7,407 eighth grade students enrolled in public and private schools throughout the United States. In the NELS 88 study, eighth grade students were pre-tested in 1988 and post-tested as twelfth graders in 1992. Scores on reading comprehension, mathematics, science, and history/citizenship/geography achievement tests, developed by the Educational Testing Service (ETS), were collected for both testing periods. The twelfth grade battery of tests served as the dependent variables in Zigarelli's study.

Questionnaires developed for NELS 88 were used to gather descriptive data on students, parents, teachers, and principals. Data was applied from the questionnaire responses of 1,100 public schools used in the NELS 88 to development of the components of the six effective schools variables. Using linear regression, Zigarelli (1996) estimated effective schools parameters individually (Equation 1) and interactively (Equation 2). Beta coefficients, reflected in Table 3, were statistically significant in both equations for emphasizes achievement and class time.

Beta coefficients were statistically significant in Equation 1 for one component of principal leadership—principal influence over hiring and firing. Zigarelli (1996) concluded that student achievement is positively affected by a school culture that has “high expectations for students, frequent monitoring of student progress, emphasis on basic skill acquisition, a significant amount of time in class, and a clear, academically oriented mission of the school” (p.2).

Table 3

*Regression Analysis*

Variable	Equation 1 <sup>a</sup>	Equation 2 <sup>b</sup>
School culture		
Emphasizes achievement	0.294**	0.354***
Class time	0.023***	0.023***
Principal Influence		
Over policy matters	-0.084	
In distribution of funds	0.050	
Over hiring and firing	0.264**	
Teacher's perceptions	0.117	
Principal interaction		0.000
School relations		
Management relations	-0.067	
Teacher relations	0.212	
Relations		0.028
Teacher influence		
Over school policy decisions	-0.0545	
Over classroom policy	0.099	
Influence		0.000

*(table continues)*

Table 3 (continued)

Variable	<sup>a</sup> Equation 1	<sup>b</sup> Equation 2
Teacher quality and satisfaction		
Poor teacher	0.021	
Excellent teacher	-0.00095	
Master's in education	0.911	
Teacher preparation	0.017	
Morale	0.731*	
Quality		0.000
Parent volunteers		
Volunteers	0.022	0.024
Student variables		
Pretest	0.833***	0.832***
Homework hours	0.293***	0.293***
Effort	1.474***	1.485***
Academic	4.807***	4.714***
Asian	0.805	0.757
Black	-4.805***	-5.029***

*Note.* <sup>a</sup>Equation 1 estimates effective schools parameters individually. <sup>b</sup>Equation 2 estimates the interaction of influences of the principal, teacher control, teacher quality, and school relations to detect a combining of these influences to generate achievement effects. From "An Empirical Test of Conclusions From Effective Schools Research," by M. Zigarelli, 1996, *The Journal of Educational Research*, 90, pp.108-109. Reprinted with permission of the editor.

\* $p = .05$ . \*\*  $p = .01$ . \*\*\*  $p = .001$ .

Hallinger, Bickman, and Davis (1996) found positive intervening causal effects between principal leadership and student achievement but no direct effects. Three structural equation models were studied. A mediated-effects with antecedents (open paths) model was designed to interconnect independent variables and dependent variables.

The Connecticut School Effectiveness Questionnaire (CESQ) served as the source for the approximately 275 items, with 1,300 teachers (> 90%) completing questionnaires. Drawn from teachers' questionnaires were several constructs about principal leadership. Measures of instructional climate came from mission, learn-time, and parental involvement derived from the CESQ. An expectations scale was drawn from the School Structure and Climate Study and CESQ. Instructional organization was measured by teacher observations of grouping of students by achievement within grades. Data on the student achievement variable were collected from third- and sixth-grade student pre-test (fall 1984) and posttest (spring 1985) reading scores. Student learning was determined by achievement measures from the Basic Skills Test developed by the Tennessee Department of Education. Means and standard deviations were calculated for the school-level variables developed from the CESQ. Means were calculated for indicating the percentages of teachers who use group reading practices in schools. Gain scores in reading achievement, computed as spring scores minus fall scores, were regressed on the reading pretest level, and "residuals of the regression served as the final achievement gain variable" (Hallinger, et al., 1996, p. 537).

The mediated-effects with antecedents (open paths) model, reflected in Figure 6, indicated positive intervening causal links between principal leadership and student reading achievement on school climate and school context ( $p < .01$ ), instructional leadership and school mission ( $p < .01$ ), and instructional climate ( $p < .05$ ) Instructional organization yielded no significant relationship to student achievement.

Mediated-effects with Antecedents: Open Paths

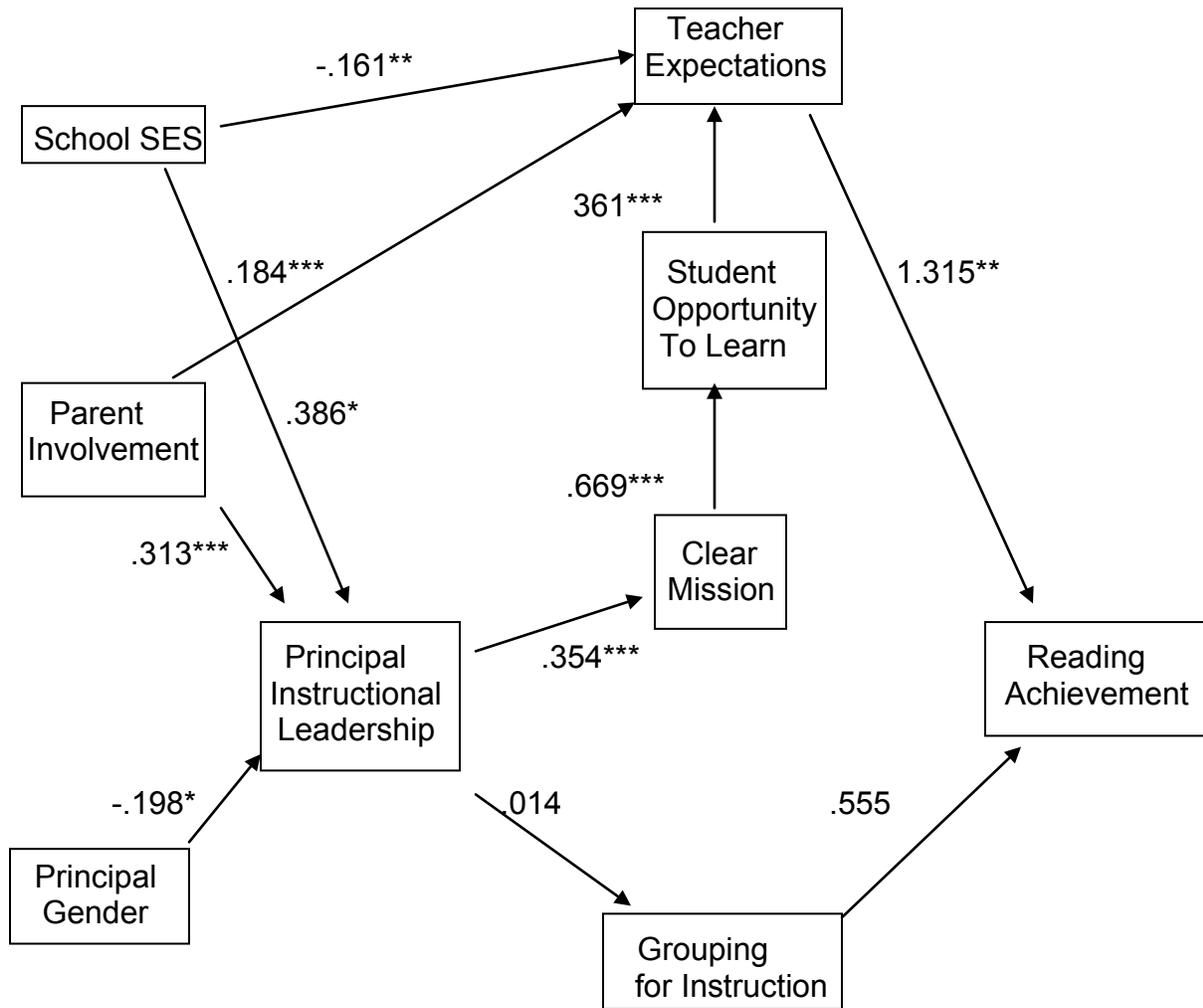


Figure 6. Final model of principal effects on school effectiveness.

From "School Context, Principal Leadership, and Student Reading Achievement" by P. Hallinger, et al, 1996, *The Elementary School Journal*, 96(5), p.540. Copyright 1996 by the University of Chicago Press. Reprinted with permission of the publisher.

Leithwood and Jantzi (1999) found that student participation in school and student identification with school is affected by principal leadership. Results indicated that principals who are knowledgeable of the combined effect of family educational culture and school conditions on student performance are likely to develop practices that will improve the conditions of their schools. Teacher leadership was studied in the same context as principal leadership with no findings of a teacher leadership effect on student participation and identification with school. Regression analysis was conducted to predict the effect of principal and teacher leadership on student engagement.

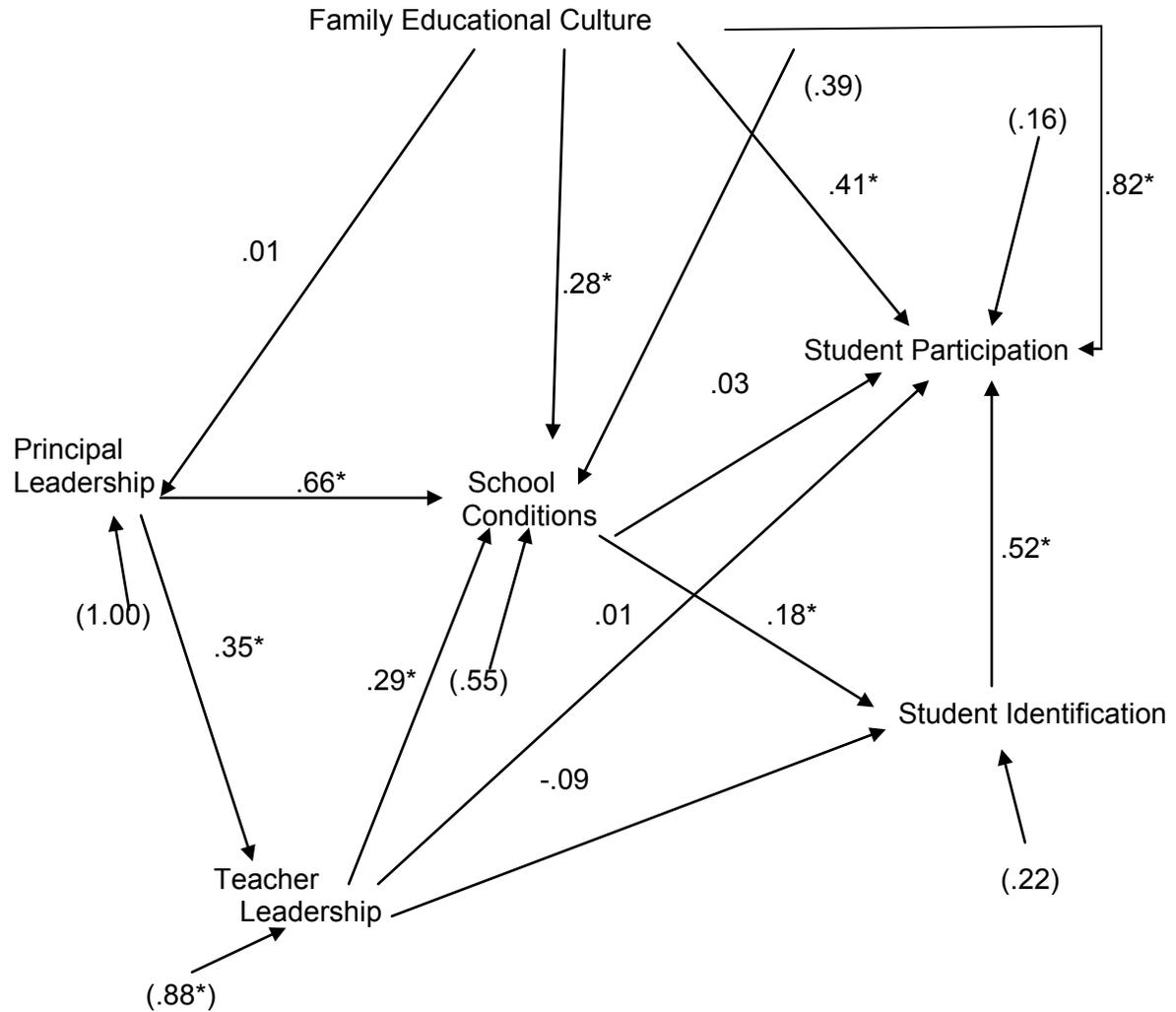
Leadership was the independent variable in this study. School conditions was the mediating variable and was identified as leadership practices most likely to have a direct influence on student outcomes. School condition variables were “purposes and goals, . . . planning, . . . organizational culture, . . . structure and organization, . . . and . . . information collection and decision making” (Leithwood & Jantzi, 1999, pp. 682-684). Student engagement with school was the dependent variable identified as the student behaviors attendance, preparedness, responses to instruction, classroom participation, enthusiasm, initiative to spend extra time on homework, participation in extracurricular activities, school governance, feeling of belonging, and identifying with school. The moderating effects of principal and teacher leadership on student engagement, with family educational culture as the moderating variable, were investigated. Family educational variables were defined as “the assumptions, norms, values, and beliefs held by the family about intellectual work in general, school work in particular, and the conditions that foster both” (Leithwood & Jantzi, pp. 686-687).

The Organizational Conditions and School Leadership Survey served as the source for the approximately 142 items, with 1762 (71%) teachers completing questionnaires. Teachers’ responses to each item were rated on a 5-point Likert scale from strongly agree to strongly disagree with and an added response of not applicable. Drawn from teacher’s questionnaires were two constructs. Measures on school conditions and leadership came from five sets of school conditions and the perceived influence of teacher and principal leadership in the school. Data on organizational conditions and leadership were collected from K-9 teachers. The Student Engagement and Family Culture Survey served as the source for the approximately 52 items, with

9,941 (100%) students completing questionnaires. Students' responses to each item were rated on a 5-point Likert scale from strongly agree to strongly disagree with an added response of not applicable. Drawn from students' questionnaires were two constructs. Measures on student engagement with school came from student participation in school, student identification with school, and students' perceptions of their family educational culture. Data on student engagement with school were collected from students in one class of the three highest grades of each K-9 school. Means and standard deviations were calculated and aggregated at the school level on all items assessing leadership, school conditions, family educational culture, and student engagement. Student engagement—*student participation* and *student identification*, were regressed on family educational culture, teacher leadership, principal leadership and school conditions.

The path analysis model, reflected in Figure 7, indicated that the relationship of principal leadership ( $p < .05$ ), family educational culture ( $p < .05$ ), and (school conditions ( $p < .05$ ) as a whole affected student participation and student identification with school. Figure 7 also indicated a strong relationship between principal leadership and school conditions ( $p < .05$ ). Teacher leadership had no significant effect on these variables.

### Path Analysis Estimating the Effects of Principal and Teacher Leadership on Student Engagement



Total Effects	Student Participation	Student Identification
Family	.88*	.88*
Teacher Leadership	.01	-.03
Principal Leadership	.07*	.09*
School Conditions	.13*	.18*

Figure 7. Results of path analysis estimating the effects of principal and teacher leadership on student engagement. From "The Relative Effects of Principal and Teacher Sources of Leadership on Student Engagement with School" by K. Leithwood and D. Jantzi, 1999, *Educational Administration Quarterly*, 35, p. 687. Copyright 2003 by the University Council for Educational Administration. Reprinted by permission of Sage Publications.

Witziers, Bosker, and Krüger (2003) concluded that educational leadership accounted for only 1% of the variation in student achievement. The authors used quantitative meta-analyses to integrate the research results of a number of multinational research studies to estimate the effect sizes and the mean effect sizes of educational leadership on student achievement. Samples were taken from 37 studies between the years 1986 and 1996 conducted in 25 countries.

To measure student achievement against principal leadership, literacy data from the International Association for the Evaluation of Educational Achievement (IEA) were used. The independent variable was school leadership behaviors and the dependent variable was reading literacy. The Instructional management Rating Scale (PIMRS) was used to categorize principal behaviors. Meta-analyses were conducted using Fisher's  $Z$  transformation. This statistical formula was used to convert Pearson's  $r$  correlations, not normally distributed, to the normally distributed variable  $z'$ . This formula was used to account for large variations in reported correlations in all studies.

The purpose of this study was to compare different research approaches to three methods of analyses. Three meta-analyses were conducted on the same multi-national research studies to investigate which method yielded the greater effect sizes of educational leadership on student achievement. The findings of all the studies were first analyzed. Empirical evidence was gathered and average effect sizes investigated to measure strength of relationship between leadership and achievement. A second analysis was conducted using studies designed to measure one dimension of educational leadership. This analysis was conducted based on the assumption that some researchers view leadership as a one dimensional role, thus limiting the scope of factors that can be studied to indicate the effects of leadership. The third analysis used a number of meta-analyses to study the effect of specific group of leadership behaviors. The three meta-analyses yielded small effect sizes and small mean effect sizes for the leadership behaviors defining and communicating mission, supervising and evaluating the curriculum, monitoring student progress, coordinating and managing the curriculum, visibility, promoting school improvement and professional development, and achievement orientation. The effect was more prominent in primary schools than in secondary schools. The relationship was below .10.

## Curriculum Alignment Practices Affecting Student Achievement

Curriculum alignment practices are conducted in schools that perform successfully using well established purposes and learning goals to improve student achievement. The relationship of the goals to learning objectives, organization of instruction, and assessments of student achievement are well documented. Curriculum is systematically and periodically reviewed by the administrators and teachers.

The Governor's Best Practice Centers (2000) determined that curriculum alignment practices identified by teachers and administrators had a positive effect on student achievement. Of the 26 schools participating in the study, 23 identified curriculum alignment as being used in their school. Eighteen of the 23 schools had two interview groups that identified curriculum alignment and 12 had three interview groups that identified curriculum alignment as an important factor in school effectiveness (see Table 2). Curriculum alignment yielded a mean of 3.69, and the percentage of times curriculum alignment was volunteered by interview groups as an important practice was 72.0. According to the Governor's Best Practice Centers(2000), "curriculum alignment involved comparing what had been taught previously to what needed to be taught, focus on identifying critical elements to be taught at each grade level, and taking responsibility for monitoring what needed to be taught throughout the school year" (p. 22).

Leithwood and Jantzi (1999) found that instructional purposes and learning goals were combined as a school condition that affects how students engage in school. Student engagement variables used in the study were identification and participation. Family educational culture, described as the " academic and occupational aspirations and expectations of parents/guardians, the provision of adequate health and nutritional conditions, and a physical setting conducive to academic work in the home," was chosen as the moderating variable for student engagement (Leithwood &Jantzi, 1999, p. 687). Student engagement was described as student participation in activities not associated with academic performance.

Leithwood and Jantzi (1999) hypothesized that students who identify with school "feel that they belong" and will improve their engagement with school (p. 684). For this to happen, the leadership of the school wrote learning goals that provided direction for the school, school staff, and students. In their study, "goals and purposes explained a

significant (although quite small) proportion of variation in student engagement” (Leithwood & Jantzi, 1999, p. 699). Regression analysis using purposes and goals as a single variable indicated “*Effects on Participation = .04 and Effects on Identification = ns*” (p. 695).

#### Curriculum Implementation Practices Affecting Student Achievement

Curriculum implementation is accomplished through the development of curriculum maps and pacing guides. These maps and guides include content and timelines for achieving curriculum goals. Curriculum goals are linked to specific learning objectives, instruction, and assessment.

The Governor’s Best Practice Centers (2000) found that curriculum implementation practices identified by teachers and administrators had a positive effect on student achievement. Of the 26 schools participating in the study, 23 identified the practices as being used in their schools. Twenty-one of the 23 schools had two interview groups that identified the practices and 12 had three interview groups that identified the practices (see Table 2). The practices yielded a mean of 3.90, and the percentage of times curriculum implementation practices were volunteered by interview groups was 72.0. Principals provide support to teachers by providing curriculum materials and guides. The Governor’s Best Practice Centers (2000) determined that the implementation of curriculum mapping and pacing guides was necessary for schools to improve their SOL test results. Curriculum implementation, like curriculum alignment, is based on clear learning goals. Curriculum implementation was measured by SOL driven rather than textbook driven instruction and outlining instructional practices using appropriate timelines.

Hallinger et al, (1996) hypothesized that instructional organization had a significant influence on student achievement. Instructional organization was defined as “practices such as grouping for instruction and curricular tracking, as well as formal features of the formal curriculum” (Hallinger, et al., 1996, p. 535). Curricular tracking establishes timelines for curriculum implementation, evaluation, and assessment associated with instruction. Students are assessed and placed in the appropriate learning environment. The authors found no significant effects of instructional organization, an intervening variable, on student achievement (see Figure 6).

## Student Motivation Practices Affecting Student Achievement

Student motivation practices are accomplished through teacher and administration awareness of student conditions, interests, and accomplishments. Students are provided with information on how to gain recognition. Schools provide incentives and rewards to help students gain recognition.

The Governor's Best Practice Centers (2000) provided data that student motivation practices identified by teachers and administrators had a positive effect on student achievement. The authors gathered data from schools with high numbers of students on free or reduced-price lunches. Students' conditions were an important moderating variable for the study. Student achievement was indicated from results gathered on SOL test results. The schools participating in the study were rated SOL Fully Accredited. Of the 26 schools participating in the study, 23 identified motivational practices as being used in their schools. Sixteen of the 23 schools had two interview groups that identified motivational practices and six had three interview groups that identified motivational practices as important factors in student performance (see Table 2). Motivational practices yielded a mean of 3.43, and percentage of times motivational practices were volunteered by interview groups was 84.0. Successful schools examine students' interests, problems, and accomplishments to find ways to give students recognition. Incentives and rewards are provided in a number of ways to students throughout the school year. Guidelines are provided for students to help them find the means for getting recognized.

Zigarelli (1996) found that successful schools provided students with opportunities to become successful in the classroom. Information provided in Table 3 suggests that optimum, uninterrupted time in the classroom was provided to give students time to learn ( $\beta = 0.02, p = .001$ ). Schools that emphasized achievement had positive and significant effects on student performance ( $\beta = 0.29, p = .01$ ). Hallinger et al. (1996) concluded that principals who place emphasis on students' opportunity to learn enhanced student academic achievement (see Figure 6). According to the authors, effective schools have effective principals who provide learning opportunities that create and provide incentives for students to learn (Hallinger, et al. 1996, p. 533).

## Intervention Strategies Affecting Student Achievement

Intervention strategies are designed after assessment of student achievement test results are evaluated. From a review of the data, varied approaches to instruction are developed that allow for additional learning time and use family and key community members to interact with student learning.

The Governor's Best Practice Centers (2000) indicated that intervention strategies identified by teachers and administrators had a positive effect on student achievement. Of the 26 schools participating in the study, 25 identified intervention strategies as being used in their schools. Twenty-three of the 25 schools had two interview groups that identified intervention strategies and 10 had three interview groups that identified intervention strategies as an important to student performance (see Table 2). Intervention strategies yielded a mean of 3.40, and the percentage of times intervention strategies were volunteered by interview groups was 79.0. Principals used disaggregated student achievement data to identify student instructional needs, design instructional strategies for diverse student populations, and elicit teaching assistance from the community. Schools reported that SOL test data were useful in identifying students who needed additional instructional support. The disaggregation of data was ongoing throughout the school year and was used to make instructional decisions, design interventions, assess interventions, provide additional learning material, develop remediation materials, and provide additional learning time.

Leithwood and Jantzi's (1999) study of student engagement revealed that family educational culture had a significant influence on student achievement. Emphasis on student achievement was supported by family beliefs. The authors alluded to Walberg's description of family educational culture in 1984 as the "alterable curriculum of the home" (Leithwood & Jantzi, 1997, p. 68). Family educational culture included "family work habits, academic guidance and support, and stimulation to think about issues in the larger environment" (p. 687). Zigarelli (1996) found that the number of hours students spend doing homework was significantly ( $\beta = 0.29, p = .001$ ) influenced by parents (see Table 3). Hallinger et al. (1996) used parent involvement and student socioeconomic status to determine the effect of these two variables on principal instructional leadership. Both variables were significantly positively related to the

instructional leadership provided by principals. Teachers identified their principals as “active instructional leaders” in schools with high levels of parent involvement (Hallinger, et al., 1996, p. 541). Likewise principals tended to be more actively engaged in providing instructional leadership in schools with high numbers of low socioeconomic status students.

#### Data Analysis Practices Affecting Student Achievement

Student achievement data are used to make decisions about a school’s overall instructional program. Data are used to develop plans for improving classroom and school-wide performance.

The Governor’s Best Practice Centers (2000) concluded that data analysis practices identified by teachers and administrators had a positive effect on student achievement. Of the 26 schools participating in the study, 22 identified the data analysis as being used in their schools. Twenty-one of the 22 schools had two interview groups that identified the data analysis and 13 had three interview groups that identified data analysis as important in school effectiveness (see Table 2). Data analysis yielded a mean of 3.51, and the percentage of times data analysis was volunteered by interview groups was 76.0. Principals worked with teachers to systematically collect student data from various sources, disaggregate collected student achievement data, and use data to evaluate the effect of instruction on student learning. Analysis was conducted across grade levels within schools and between schools.

Leithwood and Jantzi (1999) included information collection and decision making as variables constituting school conditions. Information was collected on decision-making techniques to assist school members in developing school level policies for monitoring student progress. The intent of involving all school members in the process allowed them to collaboratively improve the overall effectiveness of the school organization and establish an accurate means of monitoring and evaluating student achievement. Data collection for decision making was not significantly related to student achievement to student engagement (Leithwood & Jantzi, 1996, p. 695). Figure 7 indicates that when information collection and decision making are aggregated into school conditions there is a significant effect on student engagement.

## Assessment Practices Affecting Student Achievement

Assessment practices are used by instructional leaders to design an instructional program for improving student achievement. Staff is trained in using assessment to monitor student progress and develop improvements in instructional practices.

Assessment practices are developed through collaboration between administrators and teachers.

The Governor's Best Practice Centers (2000) determined that assessment practices identified by teachers and administrators had a positive effect on student achievement. Of the 26 schools participating in the study, 24 identified the assessment practices as being used in their schools. Twenty of the 24 schools had two interview groups that identified assessment practices and 11 had three interview groups that identified assessment practices as important to school effectiveness (see Table 2). Assessment practices yielded a mean of 3.40, and the percentage of times assessment practices were volunteered by interview groups was 76.0. Schools used classroom assessments to monitor student progress on mastery of content and skills.. Teachers used assessments to provide periodic testing to assess student performance and improve the test taking skills of students. Assessments were used to identify areas of student weakness in learning to provide additional instructional support.

Witziers et al. (2003) concluded that monitoring student progress was directly influenced by principal leadership. Another variable considered in the study was promoting school improvement and professional development. Results yielded a significant negative effect on student achievement. Witziers et al. could not account for the result, but explained that some principals are "compelled to take action to improve their schools" . . . when they work in schools . . ."with low expected achievement levels of students" (p. 412).

### Research Question

In an effort to identify principal practices that affect Standards of Learning accreditation in the Commonwealth of Virginia's public schools, the following question will be investigated: What principals' practices in Virginia's public elementary, middle, and high schools distinguish Fully Accredited schools from Accredited with Warning schools?

## CHAPTER TWO METHODOLOGY

The purpose of this study was to investigate principals' practices that improve student achievement and school-wide performance leading to Standards of Learning (SOL) Full Accreditation of schools. The findings do not support the assumption that effective schooling practices used by principals in elementary, middle, and high schools can be implemented to increase student achievement and meet school accreditation standards. The populations, samples, setting, and procedures for data collection, data management, and data analysis are described in this chapter.

### Populations

School accreditation ratings for the 2005-2006 school year were based on student achievement Standards of Learning (SOL) test results for the 2004-05 school year. Virginia elementary, middle, and high schools that were rated SOL Accredited with Warning and Virginia schools rated Fully Accredited for 2005-2006 are the two populations in this study. Accredited with Warning schools numbered 129, and Fully Accredited schools numbered 1,686 (Virginia Department of Education, 2006). There were 1057 elementary, 275 middle, and 294 high schools rated SOL Fully Accredited (Virginia Department of Education, 2006).

### Samples and Responding Principals and Teachers

This section contains descriptions of the samples of the Accredited with Warning and Fully Accredited elementary, middle, and high schools selected for study and an explanation of the method principals used to select teachers in their schools to participate. Descriptive data on principal and teacher respondents are presented.

### *Samples*

The entire population of Accredited with Warning elementary, middle, and high schools was selected for participation in the study (see Table 4). There were 49 elementary, 49 middle, and 16 high schools rated Accredited with Warning in 2005-2006. For the purpose of ensuring that a sufficient comparison was made with Accredited with Warning schools, twice the total number of elementary, middle, and high schools were randomly selected from the Fully Accredited population. Ninety-eight

elementary, 98 middle, and 32 high schools were randomly selected from the population for participation in the study (see Table 4).

One principal and five to seven teachers (or all teachers in schools with seven or fewer teachers) were asked to participate in each Accredited with Warning and each Fully Accredited school in the samples. Principals were instructed to systematically select every nth teacher from the school's roster until five teachers were selected to respond to the teachers' questionnaire. Principals were asked to select any five teachers or all of the teachers if the total number of teachers was less than five. Principals from Accredited with Warning schools equaled 114 and teachers equaled approximately 570. Principals selected from Fully Accredited schools equaled 222 and teachers equaled approximately 1140. The option for school divisions, principals, and teachers to participate and the teacher selection procedure provided to principals did not guarantee the projected number of desired respondents. Therefore, approximate numbers of participants were expected.

Table 4

*Populations, Samples, and Participants Based on 2004-2005 Standards of Learning Data*

Groups	School level	Populations						Samples						Participants					
		Schools		Teachers <sup>b</sup>		Principals		Schools		Teachers		Principals		Schools		Teachers		Principals	
		<i>N</i>	<i>Col %</i>	<i>N</i>	<i>Col %</i>	<i>N</i>	<i>Col %</i>	<i>n</i>	<i>Col %</i>	<i>n</i>	<i>Col %</i>	<i>n</i>	<i>Col %</i>	<i>n</i>	<i>Row %</i>	<i>n</i>	<i>Row %</i>	<i>n</i>	<i>Row %</i>
Accredited with Warning	Elementary	49	43.0	U	U	49	43.0	49	43.0	245	43.0	49	43.0	15	30.6	44	18.0	11	22.5
	Middle	49	43.0	U	U	49	43.0	49	43.0	245	43.0	49	43.0	15	30.6	65	26.5	15	30.6
	High	16	14.0	U	U	16	14.0	16	14.0	80	14.0	16	14.0	8	50.0	48	60.0	5	31.3
	Total	114 <sup>a</sup>	100	U	U	114	100	114	100	570 <sup>d</sup>	100	114	100	38	33.3	157 <sup>e</sup>	27.5	31 <sup>f</sup>	27.2
Fully Accredited	Elementary	1057	65.0	U	U	1057	65.0	98	43.0	490	43.0	98	43.0	75	76.5	237	48.4	61	62.2
	Middle	275	16.9	U	U	275	16.9	98	43.0	490	43.0	98	43.0	17	17.4	60	12.2	18	18.4
	High	294	18.1	U	U	294	18.1	32	14.0	160	14.0	32	14.0	28	87.5	104	65.0	23	71.9
	Total	1626	100	U	U	1626	100	228 <sup>c</sup>	100	1140 <sup>d</sup>	100	228	100	120	52.6	401 <sup>e</sup>	35.2	102 <sup>f</sup>	44.7

*Note.* <sup>a</sup>The entire population of Accredited with Warning elementary, middle, and high schools was used in the study. <sup>b</sup>Unknown number-- all teachers in the identified schools. <sup>c</sup>The number of fully accredited schools was doubled to assure sufficient number of responses for data analysis. <sup>d</sup>Principals were asked to select every *n*<sup>th</sup> teacher or all teachers if there were fewer than seven from the school roster. The target was five teachers per school. <sup>e</sup>Data reflect the number of identified Accredited with Warning and Fully Accredited schools extracted from the total number of questionnaires returned by teachers and calculated as follows: 558 = 567 (total returned) - 4 (elementary) - 2 (middle) - 2 (high) - 1 (other), that did not identify their schools. <sup>f</sup>Data reflect the number of identified Accredited with Warning and Fully Accredited schools extracted from the total number of questionnaires returned by principals and calculated as follows: 133 = 142 (total returned) - 5 (elementary) - 3 (middle) - 1 (high), that did not identify their schools.

### *Participating Schools*

Guidelines for accessing *Principal's Practices Questionnaire Form A* (for principals) and *Principal's Practices Questionnaire FORM B* (for teachers) at [survey@vt.edu](mailto:survey@vt.edu) were sent in letters via the United States Postal Service and emails to the population of 114 principals of schools rated Standards of Learning Accredited with Warning and 228 schools rated Standards of Learning Fully Accredited. Schools that opted not to complete the questionnaires online were sent cover letters and copies of each questionnaire on 8½ by 11 plain paper enclosed in 10x13 clasp envelopes containing self-addressed pre-paid postage stamped 9x12 clasp envelopes for returning completed questionnaires. Thirty-eight schools returned usable questionnaires.

Questionnaires were completed by 142 principals and 567 teachers. These numbers differ from the data in Table 4 for two reasons. First, nine principals and nine teachers did not identify their school in the descriptive portion of their respective questionnaires and accreditation status could not be determined. However, this group of principals and teachers responded to multiple questions and provided useful data that were included in some of the descriptive analyses in the study. Second, the data in Table 4 reflects the numbers and percentages of completed questionnaires from principals and teachers who reported the names of their schools. Thus it could be determined that usable questionnaires were completed by 133 principals and 558 teachers of Accredited with Warning and Fully Accredited schools. Numbers of usable questionnaires for each school level of Accredited with Warning schools were low to moderate, ranging from 30.6% for elementary and middle to 50.0% for high schools. Numbers of usable questionnaires for each school level of Fully Accredited schools were low to high, ranging from 17.4% for middle to 76.5% for elementary, and 87.5% for high schools.

### *Responding Principals and Teachers*

Profiles for responding principals and teachers were developed from data collected with the *Principal's Practices Questionnaire FORM A* (see Table 5) and the *Principal's Practices Questionnaire FORM B* (see Table 6). Data for principals and teachers were gathered on gender, highest degree held (bachelor's, master's, educational specialist, certificate of advanced graduate study, doctorate), school level

Table 5

*Descriptive Data on Responding Principals and Their Schools*

Descriptor		<i>N</i>	<i>%</i>	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>
Gender	Male	66	46.5				
	Female	76	53.5				
	Total	142	100.0				
Highest degree held	Master's	98	69.0				
	Educational specialist	12	8.5				
	Certificate of advance graduate study	13	9.2				
	Doctorate	19	13.4				
	Total	142	100.1				
School-level assignment	Elementary	76	53.5				
	Middle	37	26.1				
	High	29	20.4				
	Total	142	100.0				
Professional certificate held	Full certification	138	97.2				
	Provisional certification	4	2.8				
	Total	142	100.0				

*(table continues)*

Table 5 (continued)

Descriptor		<i>N</i>	%	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>
School setting	Urban	28	19.7				
	Suburban	11	7.7				
	Rural	103	72.5				
	Total	142	100.0				
School accreditation rating	Accredited with warning	31	21.8				
	Fully accredited	102	71.8				
	Missing	9	6.3				
	Total	142	99.9				
Years of experience as principal	Valid	141	99.3				
	Missing	1	0.7				
	Total	142	100.0	8.33	8.53	0	49
Years of experience in current principalship	Valid	140	98.6				
	Missing	2	1.4				
	Total	142	100.0	4.11	4.09	0	35

(table continues)

Table 5 (continued)

Descriptor		<i>N</i>	<i>%</i>	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>
School free or reduced-price lunch rate	Valid	133	93.7				
	Missing	9	6.3				
	Total	142	100.0	48.18	17.21	8.25	87.50

Table 6

*Descriptive Data on Responding Teachers*

Descriptor		<i>N</i>	<i>%</i>	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>
Gender	Male	96	16.9				
	Female	464	81.8				
	Missing	7	1.2				
	Total	567	99.9				
Highest degree held	Bachelor's	294	51.9				
	Master's	239	42.2				
	Educational specialist	11	1.9				
	Certificate of advance graduate study	7	1.2				
	Doctorate	1	.2				
	Missing	15	2.6				
	Total	567	100.0				
School-level assignment	Elementary	285	50.3				
	Middle	127	22.4				
	High	154	27.2				
	Other	1	.2				
	Total	567	100.1				

*(table continues)*

Table 6 (continued)

Descriptor		<i>N</i>	<i>%</i>	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>
Professional certificate held	Full certification	535	94.4				
	Provisional certification	29	5.1				
	Missing	3	.5				
	Total	567	100.0				
School setting	Urban	94	16.6				
	Suburban	42	7.4				
	Rural	431	76.0				
	Total	567	100.0				
School accreditation rating	Accredited with warning	157	27.7				
	Fully accredited	401	70.7				
	Missing	9	1.6				
	Total	567	100.0				

(table continues)

Table 6 (continued)

Descriptor		<i>N</i>	<i>%</i>	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>
Teacher of a Standards of Learning subject	No	118	20.8				
	Yes	443	78.1				
	Missing	6	1.1				
	Total	567	100.0				
Teacher of a Standards of Learning subject with an end-of-year test	No	228	40.2				
	Yes	331	58.4				
	Missing	8	1.4				
	Total	567	100.0				
Years of teaching experience	Valid	544	95.9				
	Missing	23	4.1				
	Total	567	100.0	14.30	10.21	1	40
Years in current teaching assignment	Valid	535	94.4				
	Missing	32	5.6				
	Total	567	100.0	7.80	7.67	0	40

(table continues)

Table 6 (continued)

Descriptor		<i>N</i>	<i>%</i>	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>
School free or reduced-price lunch rate	Valid	558	98.4				
	Missing	9	1.6				
	Total	567	100.0	48.11	17.59	8.25	87.50

assignment (elementary, middle, high), professional certificate held (full certification, provisional certification), school setting (urban, suburban, rural), school accreditation rating (accredited with warning, fully accredited), years of experience as principal, years of experience in current principalship, and school free and reduced-price lunch rate. Additional teacher data included ‘teacher of a Standards of Learning subject’ and “teacher of a Standards of Learning subject with an end-of-year test.”

Principals ( $N=142$ ) responded to descriptive items in the Principal’s Practices Questionnaire FORM A. Ten more females than males participated. The largest percentage of principals (69%) had a master’s degree, with the remaining having more than a master’s. A little over half of the principals were assigned to elementary schools with the remainder assigned about equally to middle and high schools. A small percentage (2.8%) of principals was provisionally certified and all others were fully certified. About 20% reported that their schools were in urban areas, and over 70% reported that their schools were in rural areas. Less than 10% reported that their schools were in suburban areas. A little over 70% of the principals worked in schools that were Standards of Learning Fully Accredited. Principals’ years of experience ranged from zero to 49, with the average being a little over eight years. The average number of years principals worked in their current assignment was a little over four, with years ranging from zero to 35. The average percentage of students receiving free or reduced-price lunches across all schools was a little over 48% with a range of 8.25% to 87.50%.

Teachers ( $N=567$ ) responded to descriptive items in the Principal’s Practices Questionnaire FORM B (see Table 6). Slightly over eighty percent of the responding teachers were female. Large percentages of teachers held a bachelor’s degree (50%) or master’s degree (42%), with all others higher than a master’s degree. Half of the teachers were assigned to elementary schools with the other half assigned about equally to middle and high schools. Nearly all teachers were fully certified. Only a small percentage (about 5%) was provisionally certified. A small proportion of teachers served schools in urban and suburban settings with a large proportion (76%) responding from schools in rural settings. Slightly over 70% of the teachers worked in schools that were Standards of Learning Fully Accredited. Teachers’ years of experience ranged from 1 to

40, with the average being a little over fourteen. The average number of years teachers worked in their current assignment was a little less than eight, with years ranging from zero to 40. A little more than seventy-eight percent of the teachers responded that they taught a Standards of Learning subject, and slightly over 58% responded that they taught a Standards of Learning subject that had an end-of-year test.

### Setting

Public elementary, middle, and high schools located in county and city school divisions throughout the Commonwealth of Virginia served as the setting for this study. Standards of Learning Accredited with Warning and Fully Accredited schools participated from urban, suburban, and rural areas of the state.

### Data Collection Instrument

Two questionnaires were developed to collect data in this study: the Principal's Practices Questionnaire, Form A, for principals and Principal's Practices Questionnaire, Form B, for teachers. The development of the questionnaires, content validation of the questionnaires, administration of the questionnaires, reliability of the scales in the questionnaires, coding and scoring of the scales and other items in the questionnaires, administration of the questionnaires, and principal components analyses of the questionnaires are described in this section.

### *Development of the Questionnaire*

Domains, sub-domains, and items were synthesized from the literature on school effectiveness and used to build the questionnaires—*Principals' Practices Questionnaire: FORM A* and *Principals' Practices Questionnaire FORM B*. One of the primary sources was the Governor's Best Practice Centers study conducted in the year 2000 (*A Study of Effective Practices in Virginia's Schools: Educator's Perspectives of Effective Practices Leading to Student Success on SOL Tests*, pp. 43-44). In that study, interviews were conducted and surveys administered to generate data on teachers' and administrators' use of effective practices in Virginia's public elementary, middle, and high schools rated as SOL Fully Accredited. The data that were collected yielded seven domains, domain descriptions, 19 sub-domains, sub-domain descriptions, and 73 items with descriptions. Domains were ranked by level of importance perceived by participants. (see Appendix A).

Domains, sub-domains, and items for this study were derived through a process of sorting and categorizing practices identified by the Governor's Best Practice Centers study. The process yielded seven domains, 23 sub-domains, and 115 items (see Appendix B) that were used in the validation process of this study. The items were worded as practices that might be used by principals as they worked to get their schools accredited. A final set of domains and related sub-domains are in Table 7.

### *Content Validity*

Content validation was conducted using the *panel-of-experts* method. In this method, a panel of people with knowledge of the subject is identified and asked to perform three activities: (1) review the definitions of the domains being measured, analyze the content of each item, and place each item in the domain with which it is most closely associated; (2) rate the level of association of each item with the domain in which they placed it; and (3) rate the clarity of each item. In this study, the experts were asked to take four actions. First, they were asked to select the sub-domain with which each item was associated. Second, they were asked to select the domain with which each sub-domain was associated. Third, they were asked to rate the strength of association between the item and the selected sub-domain on a four-point scale: 1 = Very weak association, 2 = Weak association, 3 = Strong association, 4 = Very strong association. Fourth, they were asked to rate the clarity of each item using a three point scale: 1 = Very unclear, delete, 2 = Unclear, revise, 3 = Clear, leave as written. Participants were asked to provide (1) written comments on the document about statements that they rated very weakly or weakly associated with the selected sub-domain and (2) corrections for statements that were rated very unclear or unclear. The procedure follows that of Margheim (2001).

Table 7

*Domains and Sub-domains in the Questionnaire*

Domains	Sub-domains
Leadership	Creating a strong sense of mission. Setting goals for student achievement. Building a strong culture of collaboration.
Curriculum alignment	Connecting specific content to state standards. Reviewing teachers' instructional documents.
Implementing curriculum	Using guides.
Student motivation	Knowing student conditions. Recognizing student accomplishments. Providing additional learning time.
Intervention strategies	Using student achievement data. Developing varied approaches to instruction. Involving the community in the learning process.
Data analysis	Collecting data. Analyzing data. Using data.
Assessment	Training staff Monitoring student progress.

*Note:* Domains and sub-domains derived from the review of the literature and primarily from the following study: Governor's Best Practice Centers, (2000). *A study of effective practices in Virginia's schools: Educator's perspectives of effective practices leading to student success on sol tests* (pp. 1-44). Richmond, VA: Virginia Department of Education. Adapted with permission of the Virginia Department of Education.

An initial validation questionnaire was developed using seven domains, 23 sub-domains, and 115 items (see Appendix B). Five items that represented principals' practices were developed for measuring each sub-domain. Due to length, the validation instrument was divided into Validation Instrument A, Validation Instrument B, and Validation Instrument C. Each instrument was administered at different times to a group of 30 participants in the initial validation procedure. Revisions and redefining of sub-domains and sub-domain items into similar categories reduced the number of items for further validation. Three questionnaire instruments -- A, B, and C -- were developed for the final validation process (see Appendix C). One instrument that included the sub-domains and items not validated in the second validation procedure were used in the third and fourth validation procedures. The number of respondents was reduced in number for the third and fourth validation procedures (see Appendix E). Sub-domains were condensed to 17 and items to 85 upon completion of the final validation (see Table 8). Eighty-five items were validated for use on the final questionnaires. These items, categorized by domain and sub-domain, are in Appendices F and G.

The initial validation process was conducted in an open meeting. Participants were provided a paper version of the questionnaire to be marked in pencil. Verbal and written directions for completing the questionnaire were directly administered to participants. A copy of the questionnaire with a cover letter and the researcher's phone number was mailed to those individuals not present. The researcher was accessible by phone to clarify directions for completing the questionnaire.

The validation questionnaire was administered to four groups at different times. Participants were eight elementary school principals, three middle school principals, one middle/high school principal, three high school principals, three assistant high school principals, three assistant middle school principals, three assistant elementary school principals, one elementary school supervisor, one middle school supervisor, one high school supervisor, one assistant superintendent, four high school teachers, two middle school teachers, and forty elementary school teachers in a school district in Southwest Virginia. A cover letter explaining the purpose of the Principal's Practices Questionnaire, importance of the study, participant importance to the study, and participant

Table 8

*Results of the Content Validation of Items by Trial*

Sub-domains	Initial validation <sup>a</sup>				Follow-up validations <sup>b</sup>									
	Items		First trial validated items		Items		Second trial validated items		Third trial validated items		Fourth trial validated items		Total validated items	
	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
Creating a strong sense of mission.	5	100.0	1	20.0	5	100.0	4	80.0	4	80.0	5	100.0	5	100.0
Setting goals for student achievement.	5	100.0	1	20.0	5	100.0	4	80.0	4	80.0	5	100.0	5	100.0
Building a strong culture of collaboration.	5	100.0	3	60.0	5	100.0	4	80.0	4	80.0	4	80.0	5	100.0
Connecting content to state standards.					5	100.0			1	20.0	3	60.0	5	100.0
Reviewing teachers' instructional documents.	5	100.0	2	40.0	5	100.0	5	100.0	5	100.0	5	100.0	5	100.0
Using guides.					5	100.0	4	80.0	4	80.0	5	100.0	5	100.0
Knowing student conditions.					5	100.0	5	100.0	5	100.0	5	100.0	5	100.0
Recognizing student accomplishments.					5	100.0	5	100.0	5	100.0	5	100.0	5	100.0

*(table continues)*

Table 8 (continued)

Sub-domains	Initial validation <sup>a</sup>				Follow-up validations <sup>b</sup>									
	Items		First trial validated items		Items		Second trial validated items		Third trial validated items		Fourth trial validated items		Total validated items	
	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
Providing additional learning time.	5	100.0	2	40.0	5	100.0	4	80.0	4	80.0	5	100.0	5	100.0
Using student achievement data.	5	100.0	5	100.0	5	100.0	5	100.0	5	100.0	5	100.0	5	100.0
Developing varied approaches to instruction.	5	100.0	0	0.0	5	100.0	3	60.0	4	80.0	5	100.0	5	100.0
Involving the community in the learning process.					5	100.0	5	100.0	5	100.0	5	100.0	5	100.0
Collecting data.	5	100.0	2	40.0	5	100.0	5	100.0	5	100.0	5	100.0	5	100.0
Analyzing data.	5	100.0	1	20.0	5	100.0	3	60.0	3	60.0	3	60.0	5	100.0
Using data.	5	100.0	0	0.0	5	100.0	3	60.0	3	60.0	4	80.0	5	100.0
Training staff.	5	100.0	3	60.0	5	100.0	4	80.0	5	100.0	5	100.0	5	100.0
Monitoring student progress.	5	100.0	1	20.0	5	100.0	4	80.0	4	80.0	5	100.0	5	100.0

*(table continues)*

Table 8 (continued)

Sub-domains	Initial validation <sup>a</sup>				Follow-up validations <sup>b</sup>									
	Items		First trial validated items		Items		Second trial validated items		Third trial validated items		Fourth trial validated items		Total validated items	
	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
Knowing student dispositions <sup>c</sup> .	5	100.0	1	20.0										
Providing incentives for student performance <sup>d</sup> .	5	100.0	2	40.0										
Recognizing student performance <sup>e</sup> .	5	100.0	2	40.0										
Involving other key persons <sup>f</sup> .	5	100.0	1	20.0										
Evaluating student progress <sup>g</sup> .	5	100.0	0	0.0										
Developing learning goals <sup>h</sup> .	5	100.0	0	0.0										
Relating goals to student performance <sup>i</sup> .	5	100.0	1	20.0										

(table continues)

Table 8 (continued)

Sub-domains	Initial validation <sup>a</sup>				Follow-up validations <sup>b</sup>									
	Items		First trial validated items		Items		Second trial validated items		Third trial validated items		Fourth trial validated items		Total validated items	
	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
Integrating resources to build curriculum guides <sup>l</sup> .	5	100.0	0	0.0										
Using guides for core curriculum areas <sup>k</sup> .	5	100.0	1	20.0										
Developing instructional pacing <sup>l</sup> .	5	100.0	2	40.0										
Connecting learning goals to state standards <sup>m</sup> .	5	100.0	1	20.0										

Note. <sup>a</sup>Sub-domain items in the initial validation totaled 115. <sup>b</sup>Sub-domain items re-worded and revised in follow-up validation attempts totaled 85. After the initial validation, the sub-domains were re-worded and revised for follow-up validations as follows: <sup>c</sup>*Knowing student dispositions to Knowing student conditions*, <sup>d</sup>*Providing incentives for student performance* and <sup>e</sup>*Recognizing student performance to Recognizing student accomplishments*, <sup>f</sup>*Involving other key persons to Involving the community in the learning process*, <sup>g</sup>*Evaluating student progress to Monitoring student progress*, <sup>h</sup>*Developing learning goals* and <sup>i</sup>*Relating goals to student performance to Setting goals for student achievement*, <sup>j</sup>*Integrating resources to build curriculum guides* and <sup>k</sup>*Using guides for core curriculum areas to Using guides*, <sup>l</sup>*Developing instructional pacing to Reviewing teachers' instructional documents*, <sup>m</sup>*Connecting learning goals to state standards to Connecting content to state standards*.

confidentiality was provided to each participant (see Appendix D). Definitions of domains and sub-domains were provided to assist participants in associating items with domains and sub-domains.

Follow-up validation procedures were conducted through the United States Postal Service and e-mail according to guidelines by Dillman (2000). Criteria for inclusion of the items were 80% correctly classified with an association rating of 3.5 or better and a clarity rating of 2.5 or better. The data on all items are in Appendix E.

#### *Principal Components Analyses of the Principal's Practices Questionnaire*

Three principal components analyses were conducted in an attempt to reduce the seventeen sub-domains of the Principal's Practices Questionnaire to a smaller set of meaningful measures of what principals do to affect student achievement and the accreditation of their schools. The first principal components analysis was run using the sub-domain scores derived by summing the number of items within each sub-domain to which a principal gave an affirmative response on the Principal's Practices Questionnaire, Form A. The affirmative response indicated that the principal used the practice described in the item. The second principal components analysis was run using the sub-domain scores derived by summing the number of items within each sub-domain to which a teacher gave an affirmative response on the Principal's Practices Questionnaire, Form B. The affirmative response indicated that the teacher observed his or her principal applying the practice described in the item. The scores of the teachers in this analysis were not aggregated at the school level. The third principal components analysis was run using the sub-domain scores derived by summing the number of items within each sub-domain to which a teacher gave an affirmative response on the Principal's Practices Questionnaire, Form B. The teacher sub-domain scores were then aggregated at the school level by calculating the mean sub-domain score for all teachers responding from a school. The mean sub-domain score for a school was the principal's score on the sub-domain. A summary of the results of the three principal components analyses is in Table 9. The supporting data are in Appendix N.

A number of observations need to be made about the two instruments used to measure principals' practices. In examining the correlation matrices, it is clear that the

scores of the sub-domains are inter-correlated, with 68.4% of the coefficients for the self-reported principal's data being significant at or beyond an alpha of .05. All (100%) of the coefficients in the matrix for the non-aggregated teacher data, and all but two (1.5%) of the coefficients in the matrix for the aggregated teacher data were significant at or beyond an alpha of .05. These coefficients indicate that there is considerable shared variance among the sub-domains. This is confirmed by the commonalities in the principal components analyses. A commonality is an estimate of the proportion of variance in a sub-domain that is shared with other sub-domains. For the self-reported principal's data, the commonalities for the sub-domains ranged from .443 to .785. For the non-aggregated teacher data, the commonalities ranged from .344 to .645. For the teacher data aggregated at the school level, the commonalities ranged from .544 to .779.

Despite the considerable shared variance in the measures of the sub-domains, there were identifiable components of principals' practices in the data (see Table 9) that differ from the original domains identified at the time of the questionnaire validation. These components are comprised of varying configurations of the sub-domains depending on the data used for the analysis. This instability of the components may be due to (a) error in measurement--the instruments may not be sensitive enough for respondents to make the distinctions required to measure each component accurately or (b) differences in vantage points; that is, teachers actually see principals' practices different from the way that principals see their own practices. The differences in the components derived from the non-aggregated and the aggregated (school-level) data may indicate that there are real differences in the use of the practices across principals.

The instability of the components will require further study; however, for this study, it was decided to accept the components based on teachers' responses aggregated at the school level. These data have the advantage of having multiple observers, ranging from one to 13, of a principal's practices. It was reasoned that more observers are better than few observers to determine whether a practice is actually used. Further, reports by others, in this case teachers, should be more objective than self-reports. Thus, all analyses were based on the components found in the principal

Table 9

*A Comparison of the Classification of the Sub-domains of the Principal's Practices Questionnaire Before and After the Application of Principal Components Analysis*

Sub-domain	Original domain	Principal components based on principals' responses	Principal components based on teachers' responses regardless of school	Principal components based on teachers' responses aggregated by school
1. Creating a strong sense of mission.	A. Leadership.	5. Establishing a student-centered mission.	1. Focusing on infrastructure and students.	2. Establishing infrastructure
2. Setting goals for student achievement.	A. Leadership.	3. Focusing on student performance.	1. Focusing on infrastructure and students.	2. Establishing infrastructure.
3. Building a strong culture of collaboration.	A. Leadership.	2. Establishing infrastructure.	1. Focusing on infrastructure and students.	2. Establishing infrastructure.
4. Connecting specific content to state standards.	B. Curriculum alignment.	2. Establishing infrastructure.	2. Focusing on curriculum, instruction, assessment, and professional development.	2. Establishing infrastructure.

*(table continues)*

Table 9 (continued)

Sub-domain	Original domain	Components based on principals' responses	Components responses regardless of school	Components based on teachers' responses aggregated by school
5. Reviewing teachers' instructional documents.	B. Curriculum alignment.	2. Establishing infrastructure.	2. Focusing on curriculum, instruction, assessment, and professional development.	3. Implementing the curriculum.
6. Using guides.	C. Implementing curriculum.	1. Providing assistance and support.	2. Focusing on curriculum, instruction, assessment, and professional development.	3. Implementing the curriculum.
7. Knowing student conditions.	D. Student motivation.	4. Being sensitive to students.	1. Focusing on infrastructure and students.	4. Being sensitive to students.
8. Recognizing student accomplishments.	D. Student motivation.	4. Being sensitive to students.	2. Focusing on curriculum, instruction, assessment, and professional development.	4. Being sensitive to students.

(table continues)

Table 9 (continued)

Sub-domains	Original domains	Components based on principals' responses	Components responses regardless of school	Components based on teachers' responses aggregated by school
9. Providing additional learning time.	D. Student motivation.	2. Establishing infrastructure	2. Focusing on curriculum, instruction, assessment, and professional development.	4. Being sensitive to students.
10. Using student achievement data.	E. Intervention strategies.	5. Establishing a student-centered mission.	2. Focusing on curriculum, instruction, assessment, and professional development.	1. Providing instructional assistance and support.
11. Developing varied approaches to instruction.	E. Intervention strategies.	6. Adjusting instruction to student needs.	1. Focusing on infrastructure and students.	1. Providing instructional assistance and support.
12. Involving the community in the learning process.	E. Intervention strategies.	1. Providing assistance and support.	2. Focusing on curriculum, instruction, assessment, and professional development.	1. Providing instructional assistance and support.

(table continues)

Table 9 (continued)

Sub-domains	Original domains	Components based on principals' responses	Components responses regardless of school	Components based on teachers' responses aggregated by school
13. Collecting data.	F. Data analysis.	1. Providing assistance and support.	2. Focusing on curriculum, instruction, assessment, and professional development.	1. Providing instructional assistance and support.
14. Analyzing data.	F. Data analysis.	1. Providing assistance and support.	2. Focusing on curriculum, instruction, assessment, and professional development.	1. Providing instructional assistance and support.
15. Using data.	F. Data analysis.	3. Focusing on student performance.	2. Focusing on curriculum, instruction, assessment, and professional development.	3. Implementing the curriculum
16. Training staff	G. Assessment.	1. Providing assistance and support.	2. Focusing on curriculum, instruction, assessment, and professional development.	3. Implementing the curriculum.

(table continues)

Table 9 (continued)

Sub-domains	Original domains	Components based on principals' responses	Components responses regardless of school	Components based on teachers' responses aggregated by school
17. Monitoring student progress.	G. Assessment.	2. Establishing infrastructure.	2. Focusing on curriculum, instruction, assessment, and professional development.	3. Implementing the curriculum.

*Note.* The statistical data for these principal components analyses are in Appendix N

components analysis of teachers' observations of principals' practices aggregated by school.

The instability of the components will require further study; however, for this study, it was decided to accept the components based on teachers' responses aggregated at the school level. These data have the advantage of having multiple observers, ranging from one to 13, of a principal's practices. It was reasoned that more observers are better than few observers to determine whether a practice is actually used. Further, reports by others, in this case teachers, should be more objective than self-reports. Thus, all analyses were based on the components found in the principal components analysis of teachers' observations of principals' practices aggregated by school.

The principal components analysis prompted a revision of the domains in *A Diagram of the Theory: Principals' Practices that Affect Standards of Learning Student Achievement and Accreditation*. The revised diagram of the theory is in Figure 8.

*Scoring the Principal's Practices Questionnaire  
Following the Principal Components Analysis*

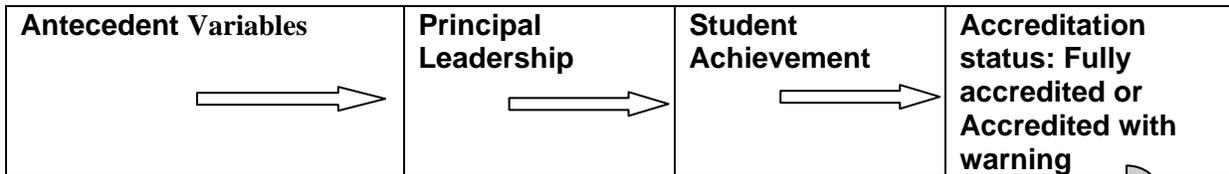
The teachers' data aggregated at the school level was used to calculate principals' scores on each of the four components: (1) Providing instructional assistance and support, (2) Establishing infrastructure, (3) Implementing the curriculum, and (4) Being sensitive to students. An exception was made in the placement of sub-domain 9, providing additional learning time, with a value of .559 on component 1 (see Table N15). It was conceptually more closely related to component 4 and was therefore placed in that domain. The score for each component was the mean score across all responding teachers and across all sub-domains within a component. The scoring is illustrated in Table 10.

**A DIAGRAM OF THE THEORY:  
PRINCIPALS' PRACTICES THAT AFFECT  
STANDARDS OF LEARNING STUDENT ACHIEVEMENT AND ACCREDITATION**

**Q. What practices implemented by principals in Virginia's public elementary, middle, and high schools improve student achievement on Standards of Learning (SOL) tests and, consequently, affect the accreditation status of the school?**

<p><b>Antecedent or Descriptive Variables</b></p> <p><u>Student SES:</u> Percentage of free or reduced-price lunches.</p> <p><u>Principals :</u> Gender; Highest degree; Current assignment; Years experience; Years current assignment;; School setting.</p>	<p><b>Leadership Variables</b></p> <p><u>Principals' Practices:</u></p> <p>Providing instructional assistance and support; Establishing infrastructure; Implementing curriculum; Being sensitive to students.</p>	<p><b>Intervening or Mediating Variables</b></p> <p><u>Student Achievement:</u></p> <p>Math English Social Studies Science</p>	<p><b>Dependent Variables</b></p> <p><u>Accreditation Status:</u></p> <p>Accredited with warning  Fully accredited</p>
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Assumption of Influence	Assumption of Causality	Assumption of Effect	Assumption of Causality and Effect
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**Hypothesis: Practices implemented by principals in Virginia's public elementary, middle, and high schools improve student achievement on Standards of Learning (SOL) tests and, consequently, affect the accreditation status of schools.**

*Figure 8: Revised theoretical model that includes the domains from the principal components analysis.*

Table 10

*Components and Associated Sub-domains in Deriving Principals' Practices Scores*

Component	Sub-domains	Score range	Score
1. Providing instructional assistance and support.	10. Using student achievement data. 11. Developing varied approaches to instruction. 12. Involving the community in the learning process. 13. Collecting data. 14. Analyzing data.	0-5	Mean of the teachers' scores in a building on sub-domains 10-14.
2. Establishing infrastructure.	1. Creating a strong sense of mission. 2. Setting goals for student achievement. 3. Building a strong culture of collaboration. 4. Connecting specific content to state standards.	0-5	Mean of the teachers scores in a building on sub-domains 1-4.

*(table continues)*

Table 10 (continued)

Component	Sub-domains	Score range	Score
3. Implementing the curriculum.	5. Reviewing teachers' instructional documents. 6. Using guides. 15. Using data. 16. Training staff. 17. Monitoring student progress.	0-5	Mean of the teachers' scores in a building on sub-domains 5-6 and 15-17.
4. Being sensitive to students.	7. Knowing student conditions. 8. Recognizing student accomplishments. 9. Providing additional learning time.	0-5	Mean of the teachers' scores in a building on sub-domains 7-9.

*Note.* The scale ranged from 0 to 5. A principal received a score of 0 when a teacher indicated that he or she observed the principal as not performing any of the 5 practices. A score of 5 was received when a teacher observed the principal using all 5 practices.

### Scoring

Principals and teachers responded to the survey by marking observed practices with values of 1=No, "principal does not implement practice," or 2=Yes, "principal implements practice." Values were re-coded to 1=0, "principal does not implement practice," and 2=1, "principal implements practice." The total of the items marked "Yes" within a sub-domain was the teacher's score for the principal in that sub-domain. The mean score across teachers and across sub-domains within a domain was the principal's score in the domain. There were four domain scores, one each for (1) Providing instructional assistance and support, (2) Establishing infrastructure, (3) Implementing the curriculum, and (4) Being sensitive to students.

#### *Reliability of Predictor Variables by Principal Components Analysis*

Reliability analysis was run for the sub-domains derived from the third principal components analysis—teacher scores aggregated at the school level (see Table 11). Domains and associated sets of sub-domains (considered to be the items in the analysis of the data) were identified as scales. There were four scales, one for each of the predictor variables. The internal consistency of items in each scale was calculated using Cronbach's *alpha*. The *alpha* coefficients, means, and standard deviations are in Table 12. Scales were considered sufficiently reliable for data analysis if they achieved an *alpha* coefficient of .70 or better. All four scales *alpha* coefficients greater than .70-- *providing instructional assistance and support* (.83), *establishing infrastructure* (.82), *implementing the curriculum* (.82), and *being sensitive to students* (.76).

#### *Instrument Administration*

Questionnaires were developed to gather data on (1) principals' observations of their practices -- *Principal's Practices Questionnaire FORM A (for principals)* (see Appendix G), and (2) teachers' observations of principals' practices -- *Principal's Practices Questionnaire FORM B (for teachers)* (see Appendix F). Seventeen sub-domains and 85 items met the validation criteria and were used to develop the questionnaires (see Appendix H). Permission to conduct the research was granted by the Virginia Polytechnic Institute and State University Institutional Review Board (see Appendix I). Each questionnaire was formatted for use with the survey service provided by Virginia Tech at [survey.vt.edu](http://survey.vt.edu).

Table11

*Reliability Coefficients for the Principal Components Analysis of Sub-domains for Responding Teachers on Form B of the Principal's Practices Questionnaire: Data Aggregated by School*

Domain and sub-domains	<i>N of items</i>	<i>M of items</i>	<i>Scale M</i>	<i>Scale SD</i>	<i>Alpha</i>
Providing instructional assistance and support. (Sub-domains: 10, 11, 12, 13, 14).	5	3.68	18.39	3.86	.83
Establishing infrastructure. (Sub-domains: 1, 2, 3, 4).	4	4.35	17.39	2.76	.82
Implementing the curriculum. (Sub-domains: 5, 6, 15, 16, 17).	5	3.71	18.53	4.29	.82
Being sensitive to students. (Sub-domains: 7, 8, 9).	2	3.60	10.80	2.48	.76

*Note.* See Appendix F for the content of the sub-domains.

A pre-notice letter to conduct research and a request to conduct research in the selected schools were sent to each school division superintendent (see Appendix J). Phone numbers, URLs for e-mail responses, and return address for responses by mail were provided for superintendents to acknowledge permission for their schools to participate.

Principals of participating schools received pre-notice letters that an important questionnaire would arrive at their school in a few days (see Appendix K). A cover letter with directions for selecting teacher participants, accessing the questionnaire, and completing the questionnaire were mailed to the principals of Accredited with Warning and Fully Accredited schools (see Appendix L). Directions for marking responses on the survey were provided at the beginning of the questionnaire.

Teachers of participating schools were selected according to guidelines provided in the cover letters sent to their principals. Each teacher received a cover letter containing directions for accessing the questionnaire and completing the questionnaire (see Appendix M). Directions for marking responses on the survey were provided at the beginning of the questionnaire.

Follow-up procedures were conducted through mail and e-mail according to guidelines by Dillman (2000). A follow-up letter or e-mail was sent to non-responding superintendents urging them to allow selected schools in their division to participate in the study. Messages were sent two weeks after the initial request was sent. A second follow-up was conducted by letter or e-mail explaining that others had responded and time was running out for their school division to participate in such an important study. A third and final follow up was conducted by phone.

A follow-up letter or e-mail was sent to non-responding principals urging them to participate in the study. Messages were sent two weeks after the initial request was sent. A second follow-up was conducted by letter or e-mail four weeks after the initial request explaining that others had responded and time was running out for their school division to participate in such an important study. A third and final follow-up was conducted by phone six weeks after the initial request informing principals of their last opportunity to participate in the study.

A follow-up letter or e-mail was sent to non-responding teachers urging them to participate in the study. Messages were sent two weeks after the initial request was sent. A second follow-up was conducted by letter or e-mail four weeks after the initial request explaining that others had responded and time was running out for their school division to participate in such an important study. A third and final follow-up was conducted by phone six weeks after the initial request informing teachers of their last opportunity to participate in the study.

#### *Data Management*

Data were collected in the Survey Maker program provided by Virginia Tech. The data were exported to the Statistical Package for the Social Sciences (SPSS) (SPSS Inc., 2007). Descriptive statistics were run in SPSS to compile and calculate frequencies, means, standard deviations, minimum values, and maximum values for the domains, sub-domains, and demographic information. The descriptive data were reviewed for outliers and errors. Needed corrections and recoding of data were completed prior to analysis.

#### *Data Analysis*

Univariate and multivariate procedures were conducted to examine the distribution of scores for each of the variables in the study. Univariate analyses were used to examine the relationships between the criterion variables and predictor variables without regard to shared variance among the predictor variables. Discriminant function analysis was applied to predict how principals' practices affect the accreditation status of the school. Principals' practices, principals' characteristics, and school characteristics are the predictor variables in the study. Standards of Learning Accreditation status is the dichotomous criterion variable.

## CHAPTER THREE

### FINDINGS

The findings are presented in two sections. The first section contains univariate analyses of the relationships between the criterion variable—the accreditation status of the school—and the characteristics of principals, teachers, and their schools. Each relationship is assessed separately without regard to shared variance among the predictor variables. The relationships between the accreditation status and the four domains of practice are then assessed with analysis of covariance with the percentage of children receiving free or reduced-price lunches as the covariate. The second section contains the multivariate analyses of the relationships between the criterion variable—the accreditation status of the school—and the characteristics of principals and schools with consideration for the shared variance in the predictor variables.

#### Section One: Univariate Analyses for Accreditation Status by Principal and School Variables

The relationships between the accreditation status of the school (Accredited with Warning or Fully Accredited) and the following principal and school variables were assessed (see Table 12). The type of analysis conducted is specified for each variable.

- Percentage of children receiving free or reduced-price lunches (independent t-test).
- Principal's years of experience as a principal (independent t-test).
- Principal's years of experience in his or her current position (independent t-test).
- Gender of the principal (chi-square).
- Principal's highest degree, recoded to 1= "master's or less" and 2= "more than master's" (chi-square).
- School level (elementary, middle, high) (chi-square).
- School setting (urban, suburban, rural) (chi-square).
- Principal's professional certificate held (full or provisional) (chi-square).
- Principal's domains of practice derived from the principal components analysis of the teachers' perceptions of the principal's practices, as follows:

- Domain 1: Providing instructional assistance and support (independent t-test and analysis of covariance with the percentage of students receiving free or reduced-price lunches as the covariate).
- Domain 2: Establishing infrastructure (independent t-test and analysis of covariance with the percentage of students receiving free or reduced-price lunches as the covariate).
- Domain 3: Implementing the curriculum (independent t-test and analysis of covariance with the percentage of students receiving free or reduced-price lunches as the covariate).
- Domain 4: Being sensitive to students (independent t-test and analysis of covariance with the percentage of students receiving free or reduced-price lunches as the covariate).

Table 12

*Relationships Between the Accreditation Status of the School (Accredited with Warning or Fully Accredited) and Principal and School Variables, N=133*

Predictor Variable	SOL rating	<i>Levene's F</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>SE Mean</i>	<i>Mean diff</i>	<i>df</i>	<i>t</i>	$\chi^2$	<i>Cramer's V</i>
School's free and reduced-price lunch rate.	Accredited with warning.	.00	31	59.93	16.00	2.87	15.32	131	4.67**		
	Fully accredited.		102	44.61	16.00	1.58					
Years principal experience.	Accredited with warning.	1.95	31	9.48	10.17	1.83	1.19	130	.67		
	Fully accredited.		101	8.30	8.19	.81					
Years current assignment principal.	Accredited with warning.	1.94	31	3.10	2.56	.46	-1.42	130	-1.66		
	Fully accredited.		101	4.51	4.53	.45					

(table continues)

Table 12 (continued)

Predictor variable	SOL rating	<i>Levene's F</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>SE Mean</i>	<i>Mean diff</i>	<i>df</i>	<i>t</i>	$\chi^2$	<i>Cramer's V</i>
Aggregated teacher score on component 1: providing instructional assistance and support.	Accredited with warning.	.26	31	3.72	.67	.12	-.01	131	-.05		
	Fully accredited.		102	3.72	.71	.07					
Aggregated teacher score on component 2: establishing infrastructure.	Accredited with warning.	.13	31	4.32	.60	.11	-.08	131	-.61		
	Fully accredited.		102	4.40	.63	.06					
Aggregated teacher score on component 3: implementing the curriculum.	Accredited with warning.	.44	31	3.75	.81	.15	-.01	131	-.03		
	Fully accredited.		102	3.76	.82	.08					

(table continues)

Table 12 (continued)

Predictor variable	SOL rating	<i>Levene's F</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>SE Mean</i>	<i>Mean diff</i>	<i>df</i>	<i>t</i>	$\chi^2$	<i>Cramer's V</i>
Aggregated teacher score on component 4: being sensitive to students.	Accredited with warning.	3.73	31	3.68	.56	.10	.03	131	.21		
	Fully accredited.		102	3.64	.83	.08					
Gender of the principal.			133					1		.18	.04
Highest degree of the principal (master's or less than master's).			133					1		1.70	.11
School level assignment of the principal (elementary, middle, and high).			133					2		12.12**	.30**
School setting (urban, suburban, and rural).			133					2		7.31*	.23*
Professional certificate of the principal.			133					1		1.25	.10

Note. The data tables for the chi-square tests are in Appendix 0.

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

### *Independent Samples t-Test Analyses*

Independent samples t-tests were conducted to evaluate the difference between the means of schools rated Accredited with Warning and Fully Accredited for each of the following predictor variables: a school's free or reduced-price lunch rate, years principal experience, years principal has been in current assignment, and aggregated teachers' scores on principal components 1-4: providing instructional assistance and support, establishing infrastructure, implementing the curriculum, and being sensitive to students (see Table 12). Only one test had a significant difference between means: Schools Accredited with Warning had a larger proportion of students on free or reduced-price lunches than schools that were Fully Accredited [ $t(131) = 4.67, p \leq .01$ ]. Accredited with Warning schools and Fully Accredited schools did not differ on any of the other continuous variables.

### *Chi-Square Analyses*

Chi-Square Tests were used to measure the relationship between accreditation status and *gender, highest degree, school level assignment, setting, and professional certificate* held by the principal (see Table 12). Supporting data are in Appendix O. Counts and expected counts for principal's gender did not differ significantly. Being male or female was not related to the accreditation status of the principal's school (see Table O1). Counts and expected counts for the principal's highest degree did not differ significantly. Possessing a master's degree or less or more than a master's degree was not related to accreditation status (see Table O2). The chi-square statistic ( $\chi^2 = 12.12, p \leq .01, V = .30$ ) was significant for *school level assignment*. There were more Fully Accredited elementary schools than expected and fewer Fully Accredited middle schools than expected. Counts and expected counts did not differ for Accredited with Warning and Fully Accredited high schools (see Table O3). The chi-square statistic ( $\chi^2 = 7.31, p \leq .05, V = .23$ ) was significant for *setting*. There were fewer Fully Accredited schools than expected in urban settings. Suburban and rural schools had more Fully Accredited schools than expected (see Table O4). Counts and expected counts for *professional certificate* did not differ significantly. The accreditation status of schools was not related to the certification (fully certified or provisionally certified) held by the principal (see Table O5).

### *Covariate Analyses*

The data for the four covariate analyses to assess the relationships between the accreditation status of the schools and the principal's domains of practice with the percentage of students receiving free or reduced-price lunches entered as a covariate are in Table 13. Principals in Schools Accredited with Warning and principals in Fully Accredited schools did not differ in the use of the four sets of practices when the socio-economic status (percentage receiving free or reduced-price lunches) of the school was taken into account with the covariance analyses.

Table 13

*Data for Relationships Between School Accreditation Status and the Principal's Domains of Practice with Percentage of Students Receiving Free or Reduced-Price Lunches Entered as a Covariate*

Criterion variable and source of variance	Type III sum of squares	df	Mean square	F	Sig.
Principal component 1: providing instructional assistance and support.					
Corrected model.	.079 <sup>a</sup>	2	.040	.080	.924
Intercept.	157.000	1	157.000	315.005	.000
Free or reduced-price lunch rate.	.078	1	.078	.157	.693
Accreditation status.	.006	1	.006	.011	.916
Error.	64.793	130	.498		
Total.	1907.916	133			
Corrected total.	64.872	132			
Principal component 2: establishing infrastructure.					
Corrected model.	.159 <sup>b</sup>	2	.080	.205	.815
Intercept.	203.327	1	203.327	522.894	.000
Free or reduced-price lunch rate.	.017	1	.017	.043	.836
Accreditation status.	.159	1	.159	.409	.524
Error.	50.550	130	.389		
Total.	2605.438	133			
Corrected total.	50.710	132			

(table continues)

Table 13 (continued)

Criterion variable and source of variance	<i>Type III sum of squares</i>	<i>df</i>	<i>Mean square</i>	<i>F</i>	<i>Sig.</i>
Principal component 3: implementing the curriculum.					
Corrected model.	.215 <sup>c</sup>	2	.107	.160	.852
Intercept.	142.469	1	142.469	212.592	.000
Free or reduced-price lunch rate.	.214	1	.214	.319	.573
Accreditation status.	.040	1	.040	.060	.807
Error.	87.120	130	.670		
Total.	1961.517	133			
Corrected total.	87.334	132			
Principal component 4: being sensitive to students.					
Corrected model.	.092 <sup>d</sup>	2	.046	.075	.928
Intercept.	139.853	1	139.853	229.761	.000
Free or reduced-price lunch rate.	.066	1	.066	.109	.742
Accreditation status.	.003	1	.003	.004	.948
Error.	79.130	130	.609		
Total.	1852.687	133			
Corrected total.	79.222	132			

Note. <sup>a</sup>R Squared = .001 (Adjusted R Squared = -.014). <sup>b</sup>R Squared = .003 (Adjusted R Squared = -.012). <sup>c</sup>R Squared = .002 (Adjusted R Squared = -.013). <sup>d</sup>R Squared = .001 (Adjusted R Squared = -.014)

## Section Two: Multivariate Analyses of the Relationships Between Accreditation Status and Characteristics of Principals and Schools with Consideration for the Shared Variance in the Predictor Variables

Discriminant function analysis was conducted using accreditation status as the criterion variable—*Accredited with Warning* and *Fully Accredited*. Predictor variables were the factors derived from the characteristics of principals—*years principal experience, years current assignment principal, principal gender, principal highest degree, and principal assignment*; characteristics of schools—*free and reduced-price lunches and school setting*; and principal practices—*providing instructional assistance and support, establishing infrastructure, implementing the curriculum, and being sensitive to students*.

This section is divided into two parts. Statistics for the discriminant function analysis are in part one and results are in part two.

### *Part One: Statistics for the Discriminant Function Analysis*

The relationships between the accreditation status of the school and the following characteristics of principals and schools were assessed using discriminant function analysis:

- School's free or reduced-price lunches.
- Principal's years of experience as a principal.
- Principal's years of experience in his or her current position.
- Gender of the principal, recoded to 0= "male" and 1= "female."
- Principal's highest degree, recoded to 0= "master's or less" and 1= "more than master's."
- Principal's assignment middle, recoded to 0= "elementary and high" and 1= "middle."
- Principal's assignment elementary, recoded to 0= "middle and high" and 1= "elementary."
- School setting urban, recoded 0= "suburban and rural" and 1= "urban."
- School setting rural, recoded 0= "urban and suburban" and 1= "rural."
- Principal Component One (PC1): Providing instructional assistance and support.
- Principal Component Two (PC2): Establishing infrastructure.

- Principal Component Three (PC3): Implementing the curriculum.
- Principal Component Four (PC4): Being sensitive to students.

Preliminary statistics are reported in Table 15. They are means and standard deviations for the accreditation status groups, ANOVAs assessing differences among the predictors for the two groups, pooled within-groups correlation matrices (see Appendix P) for the two groups, and Box's test of equality of the within-group covariance matrices.

The tests for differences in the means of Accredited with Warning and Fully Accredited on the predictor variables are in Table 14. Significant differences between the two groups of schools were found for the percentage of students receiving free or reduced-price lunches, middle schools v. elementary and high schools, elementary schools v. middle and high schools, and urban schools v. rural and suburban schools. Schools Accredited with Warning had a greater percentage of students receiving free or reduced-price lunches than schools that were Fully Accredited. A larger proportion of schools that were Accredited with Warning were in urban areas than in suburban or rural areas, and a larger proportion of elementary schools were Fully Accredited than middle and high schools. Finally, a smaller proportion of middle schools were Fully Accredited than elementary and high schools. No differences were found between schools Accredited with Warning and schools Fully Accredited on years of principal experience, years of principal's experience in current position, principal's gender, principal's highest degree, or the four sets of principals' practices.

Table 14

*Group Means, Wilks' Lambda, and Univariate F Ratio for Predictor Variables Classified by Accredited with Warning and Fully Accredited Status*

Predictor variable	Accredited with Warning			Fully Accredited			Total			Wilks' Lambda	F	df (Between Groups)	df (Total)	p
	N	M	SD	N	M	SD	N	M	SD					
School's free and reduced-price lunch proportion.	31	59.93	16.0	101	44.53	16.06	132	101	17.27	.86	21.84	1	130	.00
Years principal experience.	31	9.48	10.17	101	8.30	8.19	132	101	8.67	1.00	.44	1	130	.51
Years principal in current assignment.	31	3.10	2.56	101	4.52	4.53	132	101	4.18	.98	2.76	1	130	.10
Principal's gender.	31	.52	.51	101	.56	.50	132	101	.50	1.00	.14	1	130	.71
Principal's highest degree.	31	.42	.50	101	.30	.46	132	101	.47	.99	1.61	1	130	.21

(table continues)

Table 14 (continued)

Predictor variable	Accredited with Warning			Fully Accredited			Total			Wilks' Lambda	F	df (Between Groups)	df (Total)	p
	N	M	SD	N	M	SD	N	M	SD					
Principal assignment middle v. other (elementary, high).	31	.48	.51	101	.18	.39	132	.25	.44	.91	12.78	1	130	.00
Principal assignment elementary v. other (middle, high).	31	.36	.49	101	.59	.49	132	.54	.50	.96	5.61	1	130	.02
School setting urban v. other (suburban, rural).	31	.36	.49	101	.17	.38	132	.21	.41	.96	5.05	1	130	.03
Principal setting rural v. other (urban, suburban).	31	.65	.49	101	.73	.45	132	.71	.46	.99	.88	1	130	.35
Principal component 1: providing instructional assistance and support.	31	3.72	.67	101	3.72	.72	132	3.72	.70	1.00	.00	1	130	.98

(table continues)

Table 14 (continued)

Predictor variable	Accredited with Warning			Fully Accredited			Total			<i>Wilks' Lambda</i>	<i>F</i>	<i>df (Between Groups)</i>	<i>df (Total)</i>	<i>p</i>
	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>					
Principal component 2: establishing infrastructure.	31	4.32	.60	101	4.40	.63	132	4.38	.62	1.00	.36	1	130	.55
Principal component 3: implementing curriculum.	31	3.75	.81	101	3.75	.82	132	3.75	.82	1.00	.00	1	130	.99
Principal component 4: being sensitive to student needs.	31	3.68	.56	101	3.64	.84	132	3.65	.78	1.00	.04	1	130	.83

### *Box's Test of Equality of Covariance Matrices*

Box's  $M$  statistic is a test for the homogeneity of the covariance matrices (see Table 15). Although the statistic is significant at  $p \leq .05$ , which indicates non-normality in one or more of the predictor variables, non-normality has been found not to affect the results of the discriminant function analysis to a great degree. According to George and Mallory (2001), "It has been found that ...the discriminant function can still often perform well" (p. 276). With this in mind, the discriminant function was calculated.

Table 15

*Box's Test of Equality of Covariance Matrices*

Accreditation status recoded	<i>Rank</i>	<i>Log determinants</i>	<i>Box's M</i>	<i>Approximate F</i>	<i>df1</i>	<i>df2</i>	<i>p</i>
Accredited with warning.	12	-4.05					
Fully accredited.	12	-1.48					
Pooled within groups.	12	-1.13	122.55	1.32	78	10278.14	.03

*Note.* The ranks and natural logarithms of determinants printed are those of the group covariance matrices.

### *Part Two: The Discriminant Function Analysis*

Statistics for the discriminant function analysis are in Table 16. The eigenvalue is a measure of how well the function discriminates between the accredited with warning schools and the fully accredited schools. The eigenvalue of .45 indicates a low-moderate amount of discrimination. The overall Wilks' Lambda is another measure of the ability of the function to discriminate between the two groups. The Wilks' lambda for the data in the analysis was .69 ( $p = .00$ ) and indicates the proportion of variance in the grouping variable (accredited with warning, fully accredited) that is not explained by the predictor variables. The canonical correlation ( $R = .56$ ), when squared ( $R^2 = .31$ ), is the reciprocal of Wilks' lambda and indicates the percentage of variance between the grouping variable (schools accredited with warning and schools fully accredited) accounted for by the predictor variables. Thus, the discriminant function yielded a low to moderate level of discrimination between the categories of the grouping variable (schools accredited with warning, schools fully accredited).

Table 16

*Statistics for the Canonical Discriminant Function*

Function	<i>Eigenvalue</i>	<i>% of variance</i>	<i>Cumulative %</i>	<i>Canonical correlation</i>	<i>Wilks' lambda</i>	$\chi^2$	<i>df</i>	<i>p</i>
1	.45 <sup>a</sup>	100.0	100.0	.56	.69	46.12	12	.00

Note. <sup>a</sup>One canonical discriminant function was used in the analysis.

Table 17 contains the standardized and unstandardized discriminant function coefficients with Wilks' lambda for each predictor variable. The unstandardized coefficient is in the amount of change that occurs in the discriminant function score for each point change in the value of a predictor variable. The standardized coefficient is the amount of change in the discriminant function score in standard deviation units. The standardized scores are used to assess the relative effects of the predictor variables on the discriminate function scores. The two best predictors are the percentage of students receiving free or reduced-price lunches and the principal's school level. Looking at the unstandardized coefficients for these variables, the discriminant function score rises by .05 for each one percent increase in a school's population receiving free or reduced-price lunches and another 1.0 points if the school is an elementary school (v. a middle or high school).

Table 17

*Analysis of Variables Discriminating Between Schools Accredited with Warning and Schools Fully Accredited*

Predictor variable	Canonical discriminant function coefficients	
	<i>Standardized</i>	<i>Unstandardized</i>
School's free and reduced-price lunch rate.	.82	.05
Years of principal experience.	.28	.03
Years principal in current assignment.	-.35	-.08
Principal's gender.	-.07	-.13
Principal's highest degree.	.15	.33
Principal's school level assignment--middle (middle v. elementary and high).	.30	.73
Principal's school level assignment—elementary (elementary v. middle and high).	-.49	-1.00
School setting (Urban v. suburban and rural)	.17	.43
Principal component 1: providing instructional assistance and support.	.13	.19
Principal component 2: establishing infrastructure.	-.33	-.52
Principal component 3: implementing the curriculum.	.05	.07
Principal component 4: being sensitive to students.	-.01	-.02
Constant.		-.76

Table 18 is the structure matrix for the discriminant function analysis. The structure coefficients are the correlations between the predictor variables and the discriminant function scores. When the correlation is squared, it represents the proportion of variance in the discriminant function scores explained by the predictor variable. Four of the variables accounted for the largest amounts of variance in the discriminant function scores: percentage of students receiving free or reduced-price lunches, middle schools v. elementary and high schools, elementary schools v. middle and high schools, and urban schools v. rural and suburban schools.

Table 18

*Structure Matrix with Percentage of Variance in Discriminant Function Scores Accounted for by the Predictor Variables*

Predictor	Correlation	Percentage of variance
School's free and reduced-price lunch rate.	.61	37.21
Principal's school level assignment middle- (middle v. elementary and high).	.47	22.09
Principal's school level assignment—elementary (elementary v. middle and high).	-.31	9.61
School setting (Urban v. suburban and rural).	.29	8.41
Years principal in current assignment.	-.22	4.84
Principal's highest degree.	.17	2.89
Years principal experience.	.09	0.81
Principal component 2: establishing infrastructure.	-.08	0.64
Principal's gender.	-.05	0.25
Principal component 4: being sensitive to students.	.03	0.09
Principal component 1: providing instructional assistance and support.	-.00	0.00
Principal component 3: implementing the curriculum.	-.00	0.00

*Note.* Pooled within-groups correlations between discriminating variables and standardized canonical discriminant functions. Variables ordered by absolute size of correlation within the function.

The group centroids in Table 19 are the average discriminant function scores for the schools in the two groups. The difference in these scores is an indication of the amount of separation in the two groups. In this case the discriminant function does separate the two groups; that is, some of the predictor variables are useful in discriminating between schools Accredited with Warning and schools that are Fully Accredited. Those variables have been identified above.

Table 19

*Mean Values on the Discriminant Functions for the Two Groups: Accredited with Warning and Fully Accredited*

Accreditation status	<i>Group centroid</i>
Accredited with warning	1.21
Fully accredited	-.37

*Note.* Unstandardized canonical discriminant functions evaluated at group means.

Probably the best proof of how well the predictor variables discriminate between the schools Accredited with Warning and the schools that are Fully Accredited is how well the discriminant function equation correctly classifies the two sets of schools. Fisher's linear function coefficients are used in this analysis for creating the classification functions (see Table 20). These functions are then used in two ways: (1) to classify all cases used in the analysis and (2) to conduct a cross-case validation.

Table 20

*Fisher's Linear Discriminant Functions for Classifying Accredited with Warning Schools and Fully Accredited Schools*

Predictor	Accreditation status	
	<i>Accredited with warning</i>	<i>Fully accredited</i>
School's free and reduced-price lunch rate.	.23	.15
Principal's school level assignment--middle (middle v. elementary and high).	5.70	4.56
Principal's school level assignment—elementary (elementary v. middle and high).	3.59	5.16
School setting (Urban v. suburban and rural).	-2.17	-2.84
Years principal in current assignment.	.44	.58
Principal's highest degree.	5.20	4.69
Years of principal experience.	-.03	-.08
PC2 – Establishing infrastructure.	10.78	11.60
Principal's gender.	2.75	2.95
PC4 – Being sensitive to students.	-.73	-.71
PC1 – Providing instructional assistance and support.	4.59	4.30
PC3 – Implementing the curriculum.	-1.55	-1.65
Constant.	-39.27	-37.42

*Note.* Fisher's linear discriminant functions.

In the cross case validation, each case is classified by the functions created from all cases other than the case being classified (see Table 21). In the all-cases classification, the Fisher linear discriminant function correctly classified the cases nearly four-fifths of the time (79.5%). In the cross-case validation the function correctly classified the cases about three-fourths of the time. Using the latter percentage as a more conservative estimate of the ability of the discriminant function to classify cases, the function does quite well. Looking at the specific percentages for classification of schools Accredited with Warning and schools Fully Accredited, the functions do about equally well in correctly classifying both groups (74.2 % for Schools Accredited with Warning and 74.3% for schools Fully Accredited).

Table 21

*Classification of Accredited with Warning and Fully Accredited Schools Using Fisher's Discriminant Functions*

Classification Results						
Accreditation Status	Predicted Group Membership					
	Accredited with Warning		Fully Accredited		Total	
	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
Accredited with warning.	25	80.6	6	19.4	31	100.0
Fully accredited.	21	20.8	80	79.2	101	100.0
Cross Validation Analysis <sup>a</sup>						
Accredited with warning.	23	74.2	8	25.8	31	100.0
Fully accredited.	26	25.7	75	74.3	101	100.0

*Note.* 79.5% of original grouped cases correctly classified. 74.2% of the cross-validated grouped cases correctly classified.

<sup>a</sup>Cross validation is done only for those cases in the analysis. In cross validation, each case is classified by the functions derived from all cases other than that case.

## CHAPTER FOUR

### CONCLUSIONS, DISCUSSION, RECOMMENDATIONS FOR PRACTICE AND FUTURE RESEARCH, AND REFLECTION

The purpose of this study was to investigate principals' practices that improve student achievement and school-wide performance leading to Standards of Learning (SOL) Full Accreditation of schools. The study included 142 principals and 567 teachers from elementary, middle, and high schools rated Standards of Learning Accredited with Warning or Fully Accredited in Virginia. Conclusions, discussion of the findings, recommendations for practice and future research, and reflections are presented.

#### Conclusions

Discriminant function analysis was used to identify predictor variables-- *years principal experience, years current assignment principal, principal gender, principal highest degree, principal assignment, school's percentage of free and reduced-price lunches, school setting, providing instructional assistance and support, establishing infrastructure, implementing the curriculum, and being sensitive to students*—that discriminate between schools that are Accredited with Warning and schools that are Fully Accredited. The overall Wilks' lambda ( $\lambda=.69$ ) was significant ( $p\leq.00$ ) indicating that the predictors discriminated between the two groups. Four of the predictors were significantly associated with the criterion variable.

Schools Accredited with Warning had higher mean scores on the percentage of students receiving *free and reduced-price lunches*. These schools were more likely to be in urban settings rather than suburban or rural settings, and they were more likely to be middle schools than elementary or high schools. Fully Accredited schools were more likely to be elementary schools than middle or high schools. In using Fisher's linear discriminant functions to classify schools by accreditation status, 79.5% of the cases were correctly classified. Twenty-five (80.6%) Accredited with Warning schools and 80 (79.2%) Fully Accredited schools were correctly classified. A cross-validation analysis correctly classified 23 (74.2%) Accredited with Warning schools and 75 (74.3%) of the Fully Accredited schools. In the cross-case analysis, 74.2% of the schools were correctly classified. This means that approximately one in 4 cases would be misidentified if the predictor variables were applied to determine the accreditation status

of a school. About 25% of both types of schools would be misidentified if the discriminant function were applied to classify schools. The discriminant function did modestly well by accurately predicting three out of four cases; however, a 25 % error rate leaves a great deal of ambiguity in predicting the accreditation status of schools using the variables identified in this study.

The findings did not support the hypothesis that principals' practices affect the Standards of Learning accreditation status of elementary, middle, and high schools in Virginia. None of the principals' practices--providing instructional assistance and support, establishing infrastructure, implementing the curriculum, and being sensitive to students--discriminated between the two levels of accreditation status of the schools. For this study, characteristics of schools were better predictors of whether schools would be classified Accredited with Warning or Fully Accredited.

#### *Discussion of the Findings*

The free or reduced-price lunch rate has commonly been used to characterize the socioeconomic level of students. Two assumptions prompt the use of socioeconomic status when studying variables that affect student achievement. The first assumption is that schools with greater proportions of students who live in poverty will perform less well than schools with low proportions of students who live in poverty. The second assumption is that the successful application of specific instructional practices in schools with high proportions of students below the poverty level will overcome the effects of poverty and bring the achievement level of these students to that of or near that of children who do not live in poverty. The findings of the Governor's Best Practice Centers (2000) lend support to the second assumption for schools with high free or reduced-price lunch rates located in urban settings. In both cases researchers attempt to control the effects of socio-economic status on student achievement and look for effects from such other variables as school, teacher, and principal characteristics; the curriculum; instructional practices; funding; policies; and the like. Such was the case in this study. The percentage of students receiving free or reduced-price lunches was used as a control variable so that the relationships between the practices of principals and the accreditation status of schools could be assessed.

Commonly, studies show high correlations between percentage of students receiving free or reduced-price lunches and student achievement and between geographic location (urban, suburban, or rural) and student achievement. According to United States Department of Education statistics from 2002, “Children and youth classified as low income are African American (43%) or Hispanic (40%), and most live in large urban areas (31%). Poverty has clear effects on children both before they enter school and during their tenure in school” Southwest Comprehensive Center [SWCC], 2008, p. 1). Gaps in achievement are related to income, physical, mental, emotional, social, home, and school environmental challenges (SWCC, 2008, p. 1). How are schools with high free or reduced-price lunch rates and schools in urban settings becoming accredited? Some possibilities follow.

The North Central Regional Educational Laboratory (NCREL) (2008) addressed the issue of closing the achievement gap through Reginald Clark’s presentation of data collected from students, their parents, and teachers in five Nashville, Tennessee, elementary schools in 2002. Tests on reading were administered through the Tennessee Comprehensive Assessment Program (TCAP). Socioeconomic and ethnic diversity was significant in the student population. Predictor variables that accounted for over half of the variation in test scores were “instructional process factors (teacher estimate of student time-in-classroom learning, teacher perception of student capabilities, teacher-parent communication patterns, parental standards for student academic pursuits, and students’ out-of-school time-use patterns . . .” (North Central Regional Educational Laboratory , 2008, p. 1). The effects of ethnicity and socioeconomic variables on reading achievement were negligible.

Zigarelli’s (1996) findings on the effect of principal leadership on student achievement lend support to Clark’s findings on instructional process factors. Zigarelli concluded that principal leadership positively affected student achievement when school culture emphasized “high expectations for students, frequent monitoring of student progress, emphasis on basic skill acquisition, and a significant amount of time in class” (1996, p.2). Clark (2002) and Zigarelli (1996) indicate that successful instructional practices can overcome poverty issues that affect student achievement.

Another characteristic of schools in the current study that was related to school accreditation status was grade level. Middle schools were more likely to be classified as Accredited with Warning and elementary schools were more likely to be classified as Fully Accredited. Some reasons for these classifications are identified. In 1998, Virginia's Standards of Learning test results determined whether a school was Fully Accredited, Accredited with Warning, or Conditionally Accredited. Testing was conducted in elementary grades three and five, middle school grade eight, and grades nine through eleven in high schools. A grace period of two years was provided for principals and teachers to adapt their instructional practices and prepare students for end-of-year testing before the classification of schools by accreditation status began. Teachers who taught in grade levels prior to grades where students were being tested were responsible for preparing students. From 1998 until 2005, the Virginia Department of Education, school divisions, principals, and teachers worked collaboratively to develop a series of useful resources to be used in helping schools become Fully Accredited. Curriculum Frameworks, Blueprints, instructional pacing guides, coaching booklets, curriculum alignment handbooks, bench mark tests, remediation plans, after school tutoring, and instructional materials that provided subject content not covered in textbooks were utilized in student preparation. The effectiveness of these efforts was obvious when 98% of all schools were Fully Accredited by 2005-06.

Middle schools experienced particular difficulties in becoming Fully Accredited after No Child Left Behind legislation and Adequate Yearly Progress reports were initiated in 2002. School divisions in Virginia were not required to test all grade levels from 1998 to 2006. No Child Left Behind Legislation in 2002 required end-of-year testing in reading and math in grades three through eight. In 2006 grades four, six, and seven were immediately required to test with no grace period provided prior to testing. Standardized tests were stand-alone tests for each grade and not the customary cumulative tests that were given to third, fifth, and eighth graders. Fourth grade test scores were sandwiched between third and fifth grade test scores. In some schools fourth grade test scores met acceptable pass rates, while in other schools fourth grade test scores did not reach the accreditation standard. Teachers of grades six and seven depended on eighth grade teachers to get their schools accredited.

Unlike the effect of fourth grade standardized test score averages on elementary schools, scoring averages for grades six and seven had a negative effect on the overall test score averages for middle schools. When fourth grade test scores were low, averages of third and fifth grade scores were generally high enough to improve overall scoring averages of an elementary school to an acceptable pass rate. However, when low sixth and seventh grade test scores were averaged with high eighth grade test scores, middle schools could not attain an overall average that was passing. Teachers of grades six and seven had not been required to change instructional habits, adapt instructional practices, and integrate the resources established in use by elementary and eighth grade teachers in years leading up to mandated testing in reading and math. The reading and math testing blueprints from the Department of Education were not released until July 8, 2005. The middle school math test content was weighted heavily to include algebraic functions, problem solving, and probability and statistics. The shift was away from mathematical computation. Middle schools lagged behind elementary schools in preparation procedures and were struggling to get Fully Accredited when this researcher was gathering data for this study.

The Governor's Best Practice Centers (2000) studied seven *effective* practices used in schools with large proportions of students receiving free and or reduced-price lunches in public elementary, middle, and high schools in Virginia. Seven sets of effective practices, identified by teachers and administrators, were found to be related to overall student academic achievement and accreditation status. These sets of effective practices, with adaptations, became the principal's practices used in the current study.

The Governor's Best Practice Centers (2000) concluded that the effective practices improved overall student achievement and performance on Standards of Learning tests. This was not the case in this study. The practices observed by principals and teachers in public elementary, middle, and high schools throughout the Commonwealth of Virginia had no relationship in this study to accreditation status. The findings do not support the researcher's assertion that principals make a difference in student achievement and school accreditation status.

There are several factors that need to be considered in interpreting the findings.

The factors that may have affected the findings included few schools that were Accredited with Warning; the design of the study, including the selection of teacher participants by the principal; limited teacher participation; school division policies on participating in research; and scheduling of remediation tests and end-of-year Standards of Learning tests.

The Virginia Department of Education (2005) reported that 92 percent of Virginia's elementary, middle, and high schools were Fully Accredited for the 2005-06 school year compared to 2% for the 1998-1999 school year. The Virginia Department of Education (2005) reported that Fully Accredited schools by grade level for 2005-06 were 95% elementary, 83% middle, and 94% high. Principals and teachers improved their instructional practices from 1998-2006 and made great strides in moving the grade levels affected by standardized testing towards accreditation. Because of this increase in performance, it was difficult to get an adequate number of responses in the Accredited with Warning category for data analysis.

The responses from schools with low numbers of participants (one to five teachers) may not have adequately represented faculty views of the principal's practices. Percentages of teachers from Fully Accredited schools that equaled less than five participants per school were 39.0 percent elementary, 33.3 percent middle, and 5.9 percent high. Percentages of teachers from Fully Accredited schools that equaled less than five participants per school were 50.0 percent elementary, 27.3 percent middle, and 0.0 percent high. The schools with small numbers of teachers responding may have had a biased estimate of the practices.

There are several explanations for the low responses from some schools. The response rate may have been affected by the principal's selection of participants. Principals may have selected teachers who would provide favorable responses to questionnaires or teachers that they knew would complete the questionnaires. Principals may have pressured teachers into responding. Principals may have handed out teacher letters without explaining to teachers how to access the questionnaires online and what was expected from their participation. Principals and teachers may not have completed questionnaires when they had difficulty accessing their respective questionnaires online. For reasons of self-imposed pressures or fear that principals

would be able to review teacher responses or principals' responses would be viewed by supervising administrators, some respondents may have been reluctant to identify the school or school division in which they worked. The high means for principals and teachers responses to sub-domain items in the respective questionnaires allows for speculation that the responses may have been biased by the selection process.

School division policies impacted participation by schools. Superintendents opted not to participate when data were being gathered in their school division by other researchers. Researcher requests were denied by superintendents, school division research approval committees, and school boards when requirements supported by policy were not met. School divisions opted not to participate when a number of schools had been denied accreditation or were involved in school improvement procedures. Remediation and testing limited the times of year that principals and teachers could engage in the completion of questionnaires. Because of mandated time constraints on teachers and principals to implement remediation and benchmark testing to improve the percentages of students passing the Standards of Learning tests in Virginia's schools, some schools opted not to participate. Practices not considered for this study but used by principals and teachers to implement the overall curriculum of their schools include walk-throughs, review of instructional documents, use of data that target remediation practices, use of computer programs that disaggregate essential knowledge, total inclusion of all special education students in the testing process, response to intervention, development of individualized educational programs for all students who perform poorly on Standards of Learning tests, and professional learning opportunities through staff training on instructional strategies supported by research-based information. These practices should be integrated into follow-up studies of instructional practices that can affect student achievement and the accreditation status of schools.

The differences in the factors derived from the non-aggregated and the aggregated (school-level) data may indicate that there are real differences in the use of the practices across principals. Differences may be due to the vantage points of principals and teachers. Self-reporting by principals and principal control of those who observe their practices may have yielded responses and subsequent data that were the result of a halo effect. A halo effect occurs when one rates oneself or another at a high

level across a set of variables. The halo is the underlying factor that affects all variables measured. In this case the principals may have viewed themselves as doing a good job, and the teachers may have done the same, thus high ratings were received across all of the practice variables. The data tend to support this perspective.

#### Recommendations for Practice

The research question that was investigated in this study was the following: *What principals' practices in Virginia's public elementary, middle, and high schools distinguish Fully Accredited schools from Accredited with Warning schools?* The significant findings in the data have little relevance to principals who are attempting to discover which variables are influencing accreditation of their schools. All of the significant variables are not controllable by the principal or others in the school. Schools can not control who comes to them or the background that they bring with them. They cannot control where their schools are located. And, they cannot control the grade levels to which they are assigned. These were the significant variables in this study. This means that principals must work around these variables to achieve accreditation.

The finding that the percentage of students receiving free or reduced-price lunches is related to the accreditation of public schools reaffirms the importance of student poverty in student learning (Payne, 2005). Factors in the home, community, and school setting that affect attendance, discipline, and academic performance are once again highlighted as important considerations for teachers and administrators as they work to help children in poverty succeed. Poverty is a dilemma that requires principals to self-educate and educate their instructional staff on practices used by schools with similar characteristics that are experiencing success in student achievement and accreditation. In urban settings where higher populations of disadvantaged youth reside and student achievement and accreditation status are lower than in rural and suburban areas, it is especially important that teachers and principals take the necessary steps to adjust their practices to fit the learning needs of their schools and children.

Despite the findings in this study that indicate that principals' practices are not associated with the accreditation status of schools, I believe that there are effective teacher and principal practices that will help failing schools become accredited and will help accredited schools to sustain their status. Systematic and timely evaluations of

curriculum, effective classroom instruction, training in testing procedures, improvement of student test-taking skills, remediation based on data, the strategic purchase and application of instructional resource materials, and continuous improvement of the performance of instructional personnel are all a part of an integrated process for improving student performance and meeting accreditation standards. Intensive efforts by school principals to utilize effective instructional practices and extensive evaluation processes are important steps in getting schools accredited.

Principals assigned to middle schools are finding it difficult to get their schools accredited. Middle schools lag behind elementary and high schools in achieving accreditation. Principals and teachers have found it difficult to abandon instructional practices that are not effective in promoting middle school student learning. Concerted efforts are required by principals and teachers to adopt and apply appropriate instructional practices to achieve accreditation. It is essential that middle school principals be cognizant of the instructional resources and assistance offered by the Virginia Department of Education and the local school division. Effective instructional practices deemed useful by elementary and high school principals and teachers have helped their schools attain Full Accreditation. Middle school principals could address their schools' instructional needs by replicating the practices used by the other school levels in becoming accredited. Elementary school principals are having high rates of overall academic success by initiating successful instructional practices.

Supported by the literature is the assumption that principals make a difference through leadership. No longer just the managers of schools, principals' roles and responsibilities have become extremely diverse. The principal can no longer be the sole provider of leadership and assume responsibility for all that is instructionally required to meet the demands of federal and state agencies. Principals must provide leadership, engage all stakeholders in instructional efforts, and take collaborative measures to ensure the success of schools.

Though it was not found in this study that principals' practices make a difference in the accreditation status of schools, disputing that principals and teachers have an effect on their schools through their practices would be done in error. The success of

large numbers of schools, despite the socio-economic status of their populations, depends on what teachers and principals do every day in their schools.

#### Recommendations for Further Research

There are four areas in which future research on principals' practices and school accreditation could be improved or expanded: the measurement of principals' practices, the development of theory, procedures for collecting data, and expansion of the research into states other than Virginia. Each is discussed below.

The instrument used to measure principals' practices may not have been sensitive enough to measure the practices well. The teachers who responded may have viewed the instrument as an evaluation of their principal or school. If so, they could have responded with either a positive or negative bias. The principal may have given the instrument only to biased teachers to complete. This error in measurement may have been sufficient enough to affect the findings. Better ways of measuring the practices need to be identified and applied in future studies.

The theory was based on the notion that what a principal does in a school affects student learning and accreditation. Although this is well entrenched in the lore of the principalship, the connections between principals' practices and student achievement may not be as close as expected. The relationships are probably more indirect through school culture, teacher performance, and parental involvement. Regardless, the theory is useful as a starting point, and others can build on it.

A verified theory explaining differences between accredited and non-accredited schools would be helpful to school leaders in deciding what to do to get their schools accredited or to keep them accredited. The theory applied in this study is only the beginning of creating such an explanation. Other characteristics of schools, school settings, teachers, principals, and principals' and teachers' instructional practices should be explored to expand the theory to clearly distinguish between those schools that meet accreditation standards and those that do not.

Variables that might be added to the theory are benchmark testing (periodic testing) and remediation. Benchmark tests are used periodically through the school year to determine how well individuals and groups of students are mastering the content that comprises end-of-year standardized tests. Remediation is follow-up instruction of

content students did not understand as indicated by results on benchmark tests. Discriminating between non-accredited schools and accredited schools could be accomplished through a better understanding of preparation practices used by principals and teachers to get students ready to test.

The procedures for collecting and analyzing data could be refined. There were 85 principals' practices in each questionnaire used to gather data for this study. Dividing the number of items in half or thirds would benefit responders time-wise. Providing one group with two or three questionnaires at different times or providing two or three groups different questionnaires at the same time will shorten response time for participants.

Similar studies may be completed in other states. This study was limited to Virginia. There may be policies and practices in Virginia that prevent the principal from having a strong effect on student achievement and accreditation. Principals in other states may have more freedom to work with teachers, the curriculum, and instruction as school-based leaders. These leaders may be found to have more of an effect on student achievement and accreditation.

Case studies of schools that have made extensive progress in meeting accreditation standards and schools that have failed to meet the standards over a number of years would be helpful in highlighting the variables that distinguish these schools. These variables could be added to the theory, instruments could be developed to measure them, and the discriminating power of these variables could be tested with populations across the nation. This two-pronged approach applies both inductive (case analyses) and deductive (theory building and verification with large populations) methodologies that have the potential for discovering useful relationships.

#### Reflections

Characteristics of schools—*free and reduced-price lunch rate* and *setting*-- and characteristics of principals—*principal assignment middle* and *principal assignment elementary*-- were predictors of the accreditation status of schools in this study. I was disappointed that principals' practices-- *providing instructional assistance and support*, *establishing infrastructure*, *implementing the curriculum*, and *being sensitive to students*-- made no difference in the accreditation status of schools. It was hoped that

instructional practices would surface that schools experiencing non-accreditation could use to reverse their status.

I commented earlier that the instability of the components may be due to (a) error in measurement--the instruments may not be sensitive enough for respondents to make the distinctions required to measure each component accurately-- and (b) vantage points of teachers. Two procedures need to be considered in altering these measures. First, a direct line of communication and correspondence needs to be established between the researcher and participants. Second, participants' need to have a basic knowledge of the instructional practices being studied and should be educated on items where understanding is needed.

A factor that needs to be considered is the length of the instrument used to gather data and the amount of time participants have to complete questionnaires. Principals and teachers are experiencing the pressures of high-stakes testing and high accountability. Adapting instructional techniques to prepare students for standardized testing takes time. Thus, reducing the length of the questionnaire used in this study could have a positive effect on the outcomes of analysis. This might be done by more carefully selecting the predictor variables. Those found not to be associated with accreditation status in this study should be eliminated and replaced with other variables that are likely to affect the accreditation of schools. These could be identified through interviews with principals who have been successful in turning around failing schools.

To my knowledge, identifying principals' practices that affect student achievement and accreditation of elementary, middle, and high schools in Virginia is an initial attempt at studying this topic. The literature supports the notion that principal leadership is paramount to the success of schools. Determining the effect of instructional practices used by principals to get schools accredited has yet to be resolved. Refinement of the study may yield variables and practices of principals that will discriminate between non-accredited and accredited schools.

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APPENDIX A  
DOMAINS, DOMAIN DESCRIPTIONS, SUB-DOMAINS, AND  
ITEMS DERIVED FROM THE REVIEW OF THE LITERATURE

Domains and Descriptions

Domain 1: The principals' leadership practices.

Description of Domain: The domain contains sub-domains and items related to the ability of principals to create a strong sense of mission and vision, build a strong culture of collaboration and problem solving, and take an active role in setting high expectations and instructional goals for student achievement.

Sub-domains and Items:

Creates vision and mission --

- Creates the means by which the school can focus on vision and mission.
- Creates a culture that all students can learn despite their economic status.
- Supports the whole school team in their efforts to develop a clear focus on where the school wants to go.

Builds a strong culture of collaboration and creative problem solving --

- Does not act in isolation.
- Creates a sense of responsibility and shared work ethic among staff.
- Supports hiring of faculty who fit the school's culture.
- Utilizes team-building strategies to get teachers to work together.
- Encourages staff to take ownership.

Takes an active role in setting high expectations and instructional goals for student achievement --

- Keeps informed of instructional practices being implemented in the classroom.
- Keeps informed of student progress in learning.
- Shares in professional dialogue with teachers about students.
- Maintains awareness of instructional practices in the classroom.
- Meets with teachers to discuss student achievement data.
- Assists teachers in planning instructional strategies that benefit students.

Domain 2: Principals' practices that motivate students.

Description of the Domain: This domain contains sub-domains and items related to the means of motivating students to perform well in school. In successful schools principals take note of student interests, problems, and accomplishments and use this information to motivate students. Rewards and incentives are provided throughout the school year and are related to student accomplishments. All students understand what they need to do to earn recognition.

Sub-domains and Items:

Takes note of student interests, problems, and accomplishments and uses information to motivate students -

- Develops ways to keep students interested in learning.
- Conducts year round activities to keep students focused on the importance of doing well on SOL tests.

Provides rewards and incentives throughout the school year for student accomplishments. Provides rewards for students, individually or collectively, for successful participation--

- Develops year-round activities that incorporate competition between classes that answer SOL practice questions correctly.
- Rewards students for performances on SOL tests with bonus points on grades or exemptions from taking exams.
- Students understand what they need to do to earn recognition.
- Provides students with incentives and guidelines for how to attain recognition with improved performance on SOL tests and overall academic achievement.

Domain 3: Principals' practices that incorporate intervention strategies.

Description of Domain: This domain contains sub-domains and items related to the interventions applied in the school to increase student performance. In successful schools principals use student achievement data to plan appropriate intervention strategies. Students are provided additional learning time in a variety of settings with varied approaches to instruction. Family members and other key persons in the lives of students are encouraged to support the intervention strategies.

Sub-domains and Items:

Uses achievement data to plan appropriate intervention strategies--

- Uses classroom assessments and SOL test data to determine the context and skill areas in which students are doing well.

- Uses classroom assessments and SOL tests to determine in which areas students need additional instructional support.
- Disaggregates data throughout the school year and uses results to make sound instructional decisions about students.
- Uses assessments to design interventions.
- Uses SOL test data to decide on tutoring and individual academic plans.

Provides students with additional learning time in a variety of settings with varied approaches to instruction --

- Uses data to design ongoing interventions for individual students.
- Uses data to design ongoing interventions for groups of students.
- Encourages teachers to design individual remediation packets for students who need extra assistance.
- Provides support to help students through staff development.
- Utilizes time and scheduling to enhance student learning.
- Provides remediation and intervention during summer school.
- Provides remediation and intervention intermittently throughout the school year during tutoring blocks, study blocks, or working lunches.

Encourages family members and other key persons in the lives of students to support the intervention strategies --

- Provides assistance to staff members by allowing aides, parents, and community members to help with remediation efforts before school, after school, or on Saturdays.

Domain 4: Principals' practices with data analysis.

Description of Domain: This domain contains sub-domains and items related to the use of data in making instructional decisions. In successful schools student achievement data are systematically collected, analyzed, and reported for making decisions about the instructional program. Teachers and administrators regularly use data in both the individual classroom and school wide planning process.

Sub-domains and Items:

Student achievement data are systematically collected, analyzed, and reported for making decisions about the instructional program --

- Develops a strategic approach for collecting, analyzing, reporting, and using data.

- Internalizes data collection as a part of the regular operation of the school.
- Has a system in place for analyzing data and reporting data visually.
- Uses numerical and informational data to make instructional decisions.
- Works with staff using data to look for gaps in the curriculum.
- Constantly analyzes data from multiple sources and uses various levels of disaggregation to determine courses of actions that would lead to improved student achievement.
- Uses systematic disaggregation of data to provide a baseline by which progress can be measured.
- Analyzes SOL test data in conjunction with test grades generated in all subjects.

Teachers and administrators regularly use data in both the individual classroom and school wise planning process--

- Analyzes numerical and other informational data across grade levels (vertically) and within grade levels across disciplines (horizontally).
- Extends analysis of data to feeder schools to look at student achievement data across grade levels to make instructional decisions.
- Analyzes data as part of a district wide strategic approach to analyzing data.
- Collaborates with the supervisor or director of instruction to check for gaps as a system, as a school, and by classroom.

Domain 5: Principals' practices with assessment.

Description of Domain: This domain contains sub-domains and items related to the development and use of assessment tools in the school. Teachers in successful schools participate in staff development activities to develop sound assessment tools. Student academic progress is monitored both formally and informally using a variety of assessment strategies. Interventions are based on those assessments. In successful schools, students are taught the testing and scoring system to be used to evaluate their progress. There is a system in place for collecting, summarizing, and reporting student achievement information based on assessments.

Sub-domains and Items:

Provides staff training on the use of SOL content and skills contained in the SOLS throughout the year --

- Provides teacher training that includes making of quality tests to be given weekly to monitor the progress of students on SOLs.

Monitors student academic progress, both formally and informally, using a variety of assessment strategies --

- Requires that teacher-made tests align with SOL tests.
- Encourages teachers to develop tests that follow the SOL testing format.
- SOL test results are incorporated into assessments.
- Encourages the use of test banks to support instruction.
- Uses assessments to diagnostically study the academic progress of students.
- Communicates SOL test scores to parents.
- Utilizes a variety of assessment strategies.

Assures that students are taught testing and scoring systems that are used to evaluate their progress--

- Supports exposing students to the format of SOL tests prior to test administration.

Assures there is a clear system in place for collecting, summarizing, and reporting student achievement information based on assessments --

- Collaborates with teachers to analyze classroom assessment data to design instruction and identify areas in which students need extra instructional support.
- Utilizes classroom assessments to develop intervention and remediation plans.

Domain 6: Principals' practices with curriculum alignment.

Description of Domain: This domain contains sub-domains and items related to the alignment of goals, objectives, instruction, and assessment. Curriculum is based on clear learning goals. There is clear documentation of the relationship of the goals to specific learning objectives, instructional activities, and student assessments. Periodic reviews of the curriculum documents are conducted by the faculty.

Sub-domains and Items:

Assures that the Curriculum is based on clear learning goals --

- Constantly makes comparisons between what is being taught and what needs to be taught to align system wide curriculum with SOL content.
- Makes curricular adjustments according to current curriculum and the Standards of Learning objectives.

Assures that there is clear documentation of the relationship of the goals to specific learning objectives, instructional activities, and student assessments--

- Implements the critical elements to be taught at each grade level to increase the probability of student success.
- Emphasizes the importance of the SOL at all grade levels not just where tests are given.
- Correlates instruction with SOL content.
- Encourages staff members to reorganize, give up their favorites, and teach all of the SOL.

Periodically conducts reviews of the curriculum--

- Staff members are encouraged to take responsibility for monitoring what is taught throughout the school years.
- Lesson plans are reviewed and tallies kept on SOLs being taught.
- Teachers are afforded the opportunity to involve themselves in monitoring the progress in teaching the SOL.

Domain 7: Principals' practices with curriculum mapping and pacing.

Description of Domain: This domain contains sub-domains and items related to the management of the curriculum. The curriculum is based on clear learning goals. There is clear documentation of the relationship of the goals to specific learning objectives, instructional activities, and student assessments, periodic reviews of the curriculum documents are conducted by the faculty.

Sub-domains and Items:

Assures that instruction is SOL driven rather than textbook driven--

- Supports the concept that textbooks are used as a resource for information rather than as a curriculum guide.
- Provides teachers with training on how to develop a backwards design for instructional pacing.
- Sets target dates for concluding instructional activities focused on SOL content and mapping of content to be taught over the remaining days in the school year.
- Monitors instructional progress in teaching SOLs with SOL numbers noted in lesson plans.

Monitors instructional practices with appropriate timelines--

- Monitors progress in following curriculum maps throughout the school year.
- Supports the development of pacing guides to help teachers use instructional time more effectively.
- Constantly reviews mapping and pacing guides to be used in monitoring instructional time more effectively.

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*Note: Domains, domain descriptions, items, and item description retrieved from the following study -- Governor's Best Practice Centers, (2000). A study of effective practices in Virginia's schools: Educator's perspectives of effective practices leading to student success on sol tests (pp. 1-44). Richmond, VA: Virginia Department of Education. Reprinted with permission.*

## APPENDIX B

### FIRST VALIDATION: INSTRUCTIONS, DOMAIN AND SUB-DOMAIN DEFINITIONS, PLACEMENT ASSOCIATION AND CLARITY OF QUESTIONNAIRE ITEMS, AND PLACEMENT OF SUB-DOMAINS INTO DOMAINS

#### Validation Instrument A

##### *Instructions for Completing the Questionnaire*

1. Carefully read the definitions for the domains (A, B, C) and sub-domains (1 – 9). It may be advantageous to place the definitions pages above or beside each questionnaire page. Please go to Table 1 (now Table B1 in this appendix) and complete directions 2 through 5.
2. Place each item into a sub-domain by circling the appropriate number.
3. Rate the level of association of each item with the selected sub-domain. Circle the number of the appropriate response. 1 = Very weak, 2 = Weak, 3 = Strong, 4 = Very strong.
4. Indicate how clear you think each statement is using the following scale: 1 = Very unclear, delete; 2 = Somewhat clear, revise; and 3 = Clear, leave as written.
5. For any items you rate as 1 or 2 for clarity or association, please write your suggestions for improvement directly on each page.
6. Please go to Table 2 (now Table B2 in this appendix) and place each sub-domain into a domain by circling the letter of the appropriate domain.

## Definitions

### *Domains (A – C)*

- A. Curriculum alignment. The principal establishes clear expectations for connecting instruction across all grade-level subjects through well-developed learning goals.
- B. Implementing curriculum. The principal provides documentation supporting the use of established guidelines for periodically monitoring the implementation of specific learning objectives.
- C. Leadership. The principal works collaboratively with all stakeholders to develop a mission that emphasizes the importance of using long range instructional goals to improve student achievement.

### *Sub-domains (1 –9)*

- 1. Creating a strong sense of mission. The principal leads the process for developing a common mission with the stakeholders of the school.
- 2. Developing learning goals. The principal develops clear expectations for student learning goals.
- 3. Integrating state resources to build curriculum guides. The principal secures state-developed instructional resources to be used in the development of curriculum guides.
- 4. Building a strong culture of collaboration. The principal creates a school culture that supports collaborative decision making.
- 5. Relating goals to student performance. The principal communicates the importance of relating learning goals to student performance.
- 6. Using guides for core curriculum areas. The principal provides instructional guides to be used in the development of core curriculum areas.
- 7. Setting goals for student achievement. The principal collaborates with teachers to establish yearly, measurable student achievement goals.
- 8. Reviewing teachers' instructional documents. The principal monitors student achievement goals by reviewing all documents teachers use to enhance instruction.

9. Developing instructional pacing. The principal directs teachers to develop instructional pacing timelines that link instructional timeframes to accomplishment of student achievement goals.

Table B1

*Placement, Association, and Clarity of Questionnaire Items for Domains Curriculum Alignment, Implementing Curriculum, and Leadership*

Questionnaire statements	Sub-domain placement	Strength of association with the sub-domain	Clarity of the item
1. The principal developed the school mission in collaboration with stakeholders.	1 2 3 4 5 6 7 8 9	1 2 3 4	1 2 3
2. The principal offered shared leadership opportunities to the extended school community through collaborative efforts with its members.	1 2 3 4 5 6 7 8 9	1 2 3 4	1 2 3
3. The principal shared criteria for developing measurable goals for student achievement.	1 2 3 4 5 6 7 8 9	1 2 3 4	1 2 3
4. The principal developed learning goals with the professional staff that clearly defined expectations for student learning.	1 2 3 4 5 6 7 8 9	1 2 3 4	1 2 3

*(table continues)*

Table B1 (continued)

5. The principal explained to students the importance of relating learning goals to academic performance.	1 2 3 4 5 6 7 8 9	1 2 3 4	1 2 3
6. The principal reviewed teacher lesson plans weekly.	1 2 3 4 5 6 7 8 9	1 2 3 4	1 2 3
7. The principal provided teachers the Virginia Department of Education’s “Enhanced Scope and Sequence” guide for core curriculum areas.	1 2 3 4 5 6 7 8 9	1 2 3 4	1 2 3
8. The principal emphasized the importance of using the Virginia Department of Education’s Enhanced Scope and Sequence guide for curriculum building.	1 2 3 4 5 6 7 8 9	1 2 3 4	1 2 3
9. The principal based pacing decisions on state blueprints.	1 2 3 4 5 6 7 8 9	1 2 3 4	1 2 3
10. The principal shared the school mission with the stakeholders of the school.	1 2 3 4 5 6 7 8 9	1 2 3 4	1 2 3

*(table continues)*

Table B1 (continued)

11. The principal used team-building strategies to get teachers to work collaboratively.	1 2 3 4 5 6 7 8 9	1 2 3 4	1 2 3
12. The principal provided examples of how to write goals for student achievement in simple language format.	1 2 3 4 5 6 7 8 9	1 2 3 4	1 2 3
13. The principal developed learning goals with the professional staff that aligned with various disciplines across grade levels.	1 2 3 4 5 6 7 8 9	1 2 3 4	1 2 3
14. The principal assisted teachers in understanding how to relate learning goals to student performance.	1 2 3 4 5 6 7 8 9	1 2 3 4	1 2 3
15. The principal reviewed teacher grade books at the end of each grading period.	1 2 3 4 5 6 7 8 9	1 2 3 4	1 2 3
16. The principal assisted teachers in developing local curriculum guides for core curriculum areas.	1 2 3 4 5 6 7 8 9	1 2 3 4	1 2 3

*(table continues)*

Table B1 (continued)

17. The principal assisted teachers in developing local curriculum guides that included sample resource lists.	1 2 3 4 5 6 7 8 9	1 2 3 4	1 2 3
18. The principal directed the staff to develop pacing guides to help teachers use instructional time wisely.	1 2 3 4 5 6 7 8 9	1 2 3 4	1 2 3
19. The principal developed improvement plans that complemented the school mission.	1 2 3 4 5 6 7 8 9	1 2 3 4	1 2 3
20. The principal scheduled time during the school day when instructional teams could incorporate collaborative practices.	1 2 3 4 5 6 7 8 9	1 2 3 4	1 2 3
21. The principal empowered teachers to design concise objectives for meeting student achievement goals.	1 2 3 4 5 6 7 8 9	1 2 3 4	1 2 3

(table continues)

Table B1 (continued)

22. The principal developed learning goals with professional staff that aligned with the content of the Virginia Standards of Learning.	1 2 3 4 5 6 7 8 9	1 2 3 4	1 2 3
23. The principal communicated to parents the importance of relating goals to student performance.	1 2 3 4 5 6 7 8 9	1 2 3 4	1 2 3
24. The principal reviewed teacher pacing guides.	1 2 3 4 5 6 7 8 9	1 2 3 4	1 2 3
25. The principal delivered curriculum guides to all teachers of core curriculum areas.	1 2 3 4 5 6 7 8 9	1 2 3 4	1 2 3
26. The principal ensured that locally developed curriculum guides were aligned with the Virginia Standards of Learning.	1 2 3 4 5 6 7 8 9	1 2 3 4	1 2 3
27. The principal monitored the pacing of instruction during classroom observations.	1 2 3 4 5 6 7 8 9	1 2 3 4	1 2 3

*(table continues)*

Table B1 (continued)

28. The principal met with stakeholders to review the school mission.	1 2 3 4 5 6 7 8 9	1 2 3 4	1 2 3
29. The principal empowered the staff to act upon decisions generated through collaboration.	1 2 3 4 5 6 7 8 9	1 2 3 4	1 2 3
30. The principal discussed time frames for testing objectives designed to measure accomplishment of achievement of student goals.	1 2 3 4 5 6 7 8 9	1 2 3 4	1 2 3
31. The principal developed learning goals with the professional staff that were research based.	1 2 3 4 5 6 7 8 9	1 2 3 4	1 2 3
32. The principal required teachers to communicate progress toward the mastery of learning goals to students.	1 2 3 4 5 6 7 8 9	1 2 3 4	1 2 3
33. The principal periodically monitored teacher Virginia Standards of Learning checklists for each core subject taught.	1 2 3 4 5 6 7 8 9	1 2 3 4	1 2 3

(table continues)

Table B1 (continued)

<p>34. The principal annually provided teachers with the Virginia Standards of Learning “Curriculum Frameworks” guides for each core area.</p>	<p>1 2 3 4 5 6 7 8 9</p>	<p>1 2 3 4</p>	<p>1 2 3</p>
<p>35. The principal worked with teachers to develop curriculum guides that included sample strategies for teaching.</p>	<p>1 2 3 4 5 6 7 8 9</p>	<p>1 2 3 4</p>	<p>1 2 3</p>
<p>36. The principal directed teachers to review the pacing of instruction.</p>	<p>1 2 3 4 5 6 7 8 9</p>	<p>1 2 3 4</p>	<p>1 2 3</p>
<p>37. The principal revised the school mission in collaboration with the stakeholders of the school.</p>	<p>1 2 3 4 5 6 7 8 9</p>	<p>1 2 3 4</p>	<p>1 2 3</p>
<p>38. The principal hired teachers who fit within the collaborative culture of the school.</p>	<p>1 2 3 4 5 6 7 8 9</p>	<p>1 2 3 4</p>	<p>1 2 3</p>
<p>39. The principal integrated testing guidelines when setting student achievement goals.</p>	<p>1 2 3 4 5 6 7 8 9</p>	<p>1 2 3 4</p>	<p>1 2 3</p>

(table continues)

Table B1 (continued)

40. The principal developed learning goals with the professional staff that included higher order thinking skills.	1 2 3 4 5 6 7 8 9	1 2 3 4	1 2 3
41. The principal communicated student progress toward mastery of learning goals to parents.	1 2 3 4 5 6 7 8 9	1 2 3 4	1 2 3
42. The principal monitored accessibility of teacher instructional guides in the classroom.	1 2 3 4 5 6 7 8 9	1 2 3 4	1 2 3
43. The principal directed the school improvement planning team to include core curriculum guide information in its plan.	1 2 3 4 5 6 7 8 9	1 2 3 4	1 2 3
44. The principal worked with teachers to develop curriculum guides that included the essential knowledge for each core curriculum area.	1 2 3 4 5 6 7 8 9	1 2 3 4	1 2 3
45. The principal developed a calendar of essential Virginia Standards of Learning content from the previous year to assess the instructional timeline for completing content in the current year.	1 2 3 4 5 6 7 8 9	1 2 3 4	1 2 3

Table B2

*Placement of Sub-domains into Domains: Curriculum Alignment, Implementing Curriculum, and Leadership*

Sub-domain	Domain placement
1. Creating a strong sense of mission. The principal leads the process for developing a common mission with the stakeholders of the school.	A B C
2. Developing learning goals. The principal develops clear expectations for student learning goals.	A B C
3. Integrating state resources to build curriculum guides. The principal secures state-developed instructional resources to be used in the development of curriculum guides.	A B C
4. Building a strong culture of collaboration. The principal creates a school culture that supports collaborative decision making.	A B C
5. Relating goals to student performance. The principal communicates the importance of relating learning goals to student performance.	A B C

*(table continues)*

Table B2 (continued)

<p>6. Using guides for core curriculum areas. The principal provides instructional guides to be used in the development of core curriculum areas.</p>	<p>A B C</p>
<p>7. Setting goals for student achievement. The principal collaborates with teachers to establish yearly, measurable student achievement goals.</p>	<p>A B C</p>
<p>8. Reviewing teachers' instructional documents. The principal monitors student achievement goals by reviewing all documents teachers use to enhance instruction.</p>	<p>A B C</p>
<p>9. Developing instructional pacing. The principal directs teachers to develop instructional pacing timelines that link instructional timeframes to the accomplishment of student achievement goals.</p>	<p>A B C</p>

## Validation Instrument B

### *Instructions for Completing the Questionnaire*

1. Carefully read the definitions for the domains (A and B) and sub-domains (1 – 7).  
It may be advantageous to place the definitions pages above or beside each questionnaire page. Please go to Table 1 (now Table B3 in this appendix) and complete directions 2 through 5.
2. Place each item into a sub-domain by circling the appropriate number.
3. Rate the level of association of each item with the selected sub-domain. Circle the number of the appropriate response:  
1 = Very weak, 2 = Weak, 3 = Strong, 4 = Very strong.
4. Indicate how clear you think each statement is using the following scale:  
1 = Very unclear, delete; 2 = Somewhat clear, revise; and 3 = Clear, leave as written.
5. For any items you rate as 1 or 2 for clarity or association, please write your suggestions for improvement directly on each page.
6. Please go to Table 2 (now Table B4 in this appendix) and place each sub-domain into a domain by circling the letter of the appropriate domain.

## Definitions

### *Domains (A and B)*

- A. Motivation of students. The principal collected information on student accomplishments to develop initiatives for providing continuous encouragement for improved performance.
- B. Intervention strategies. The principal uses disaggregated achievement results to plan strategies for enhancing student learning in a variety of appropriate instructional environments.

### *Sub-domains (1 – 7)*

- 1. Knowing student dispositions. The principal strives to learn the personal qualities of all students.
- 2. Using student achievement data. The principal uses data from tests results to identify the instructional needs of each student.
- 3. Developing varied approaches to instruction. The principal recognizes the importance of providing instructional approaches that meet the diverse needs of all students.
- 4. Providing incentives for student performance. The principal develops incentives designed to encourage improved student performance.
- 5. Providing additional learning time. The principal utilizes practices that maximize learning time.
- 6. Involving other key persons. The principal relies on individuals outside the faculty to assist students in the learning process.
- 7. Recognizing student accomplishments. The principal periodically celebrates student accomplishments throughout the school year.

Table B3

*Placement, Association, and Clarity of Questionnaire Items for Domains Motivation of Students and Intervention Strategies*

Questionnaire statements	Sub-domain placement	Strength of association with the sub-domain	Clarity of the item
1. The principal talked with students to identify personal interests.	1 2 3 4 5 6 7	1 2 3 4	1 2 3
2. The principal provided tangible rewards as incentives for improved student performance.	1 2 3 4 5 6 7	1 2 3 4	1 2 3
3. The principal worked with teachers to develop guidelines for recognizing student accomplishments.	1 2 3 4 5 6 7	1 2 3 4	1 2 3
4. The principal used student achievement data to schedule students into classrooms.	1 2 3 4 5 6 7	1 2 3 4	1 2 3
5. The principal protected instructional time from interruptions.	1 2 3 4 5 6 7	1 2 3 4	1 2 3

*(table continues)*

Table B3 (continued)

6. The principal reviewed with the professional staff how various research-based approaches to instruction relate to teaching of the Virginia Standards of Learning.	1 2 3 4 5 6 7	1 2 3 4	1 2 3
7. The principal maintained a community resource file.	1 2 3 4 5 6 7	1 2 3 4	1 2 3
8. The principal identified influences that affect student performance.	1 2 3 4 5 6 7	1 2 3 4	1 2 3
9. The principal provided public recognition as an incentive for improved student performance.	1 2 3 4 5 6 7	1 2 3 4	1 2 3
10. The principal recognized student accomplishments at public school board meetings.	1 2 3 4 5 6 7	1 2 3 4	1 2 3
11. The principal instructed teachers to utilize student achievement data in meeting the individual needs of students.	1 2 3 4 5 6 7	1 2 3 4	1 2 3

*(table continues)*

Table B3 (continued)

12. The principal secured additional learning time after school to implement remediation programs.	1 2 3 4 5 6 7	1 2 3 4	1 2 3
13. The principal provided the professional staff with resources to guide varied approaches to instruction.	1 2 3 4 5 6 7	1 2 3 4	1 2 3
14. The principal developed a school-community interaction plan.	1 2 3 4 5 6 7	1 2 3 4	1 2 3
15. The principal discussed with students the responsibilities of learning.	1 2 3 4 5 6 7	1 2 3 4	1 2 3
16. The principal instructed teachers to provide incentives for improved student performance by rewarding students within their own classrooms.	1 2 3 4 5 6 7	1 2 3 4	1 2 3
17. The principal recognized student accomplishments by displaying works of students in the school's hallways.	1 2 3 4 5 6 7	1 2 3 4	1 2 3

(table continues)

Table B3 (continued)

18. The principal used student achievement data to assign students to tutoring programs.	1 2 3 4 5 6 7	1 2 3 4	1 2 3
19. The principal designed a master schedule to allow for maximum learning time for core subjects.	1 2 3 4 5 6 7	1 2 3 4	1 2 3
20. The principal invited facilitators to assist teachers in implementing varied approaches to instruction.	1 2 3 4 5 6 7	1 2 3 4	1 2 3
21. The principal secured the assistance of outside agencies for those students whose needs were not met by the school.	1 2 3 4 5 6 7	1 2 3 4	1 2 3
22. The principal questioned students about factors that attribute to success in learning.	1 2 3 4 5 6 7	1 2 3 4	1 2 3
23. The principal supported exemptions from tests as incentives for students who passed same-subject end of course Virginia Standards of Learning tests.	1 2 3 4 5 6 7	1 2 3 4	1 2 3

(table continues)

Table B3 (continued)

24. The principal praised student accomplishments over the public address system.	1 2 3 4 5 6 7	1 2 3 4	1 2 3
25. The principal used student achievement data to enhance instruction for advanced learners.	1 2 3 4 5 6 7	1 2 3 4	1 2 3
26. The principal instructed teachers to keep transition time between activities brief.	1 2 3 4 5 6 7	1 2 3 4	1 2 3
27. The principal identified a variety of instructional strategies that accommodate diverse learning styles.	1 2 3 4 5 6 7	1 2 3 4	1 2 3
28. The principal provided students with adult mentors.	1 2 3 4 5 6 7	1 2 3 4	1 2 3
29. The principal questioned students about their perceptions of standardized curriculum.	1 2 3 4 5 6 7	1 2 3 4	1 2 3

*(table continues)*

Table B3 (continued)

30. The principal provided additional learning opportunities as incentives to improve student performance.	1 2 3 4 5 6 7	1 2 3 4	1 2 3
31. The principal considered individual differences of students when recognizing student accomplishments.	1 2 3 4 5 6 7	1 2 3 4	1 2 3
32. The principal used the results of student achievement data to evaluate instructional programs.	1 2 3 4 5 6 7	1 2 3 4	1 2 3
33. The principal instructed teachers to design take-home remediation packets to provide students with additional learning time at home.	1 2 3 4 5 6 7	1 2 3 4	1 2 3
34. The principals shared with teachers the effect of varied instructional approaches on student achievement.	1 2 3 4 5 6 7	1 2 3 4	1 2 3
35. The principal included parents in remediation efforts.	1 2 3 4 5 6 7	1 2 3 4	1 2 3

Table B4

*Placement of Sub-domains into Domains: Motivation of Students and Intervention Strategies*

Sub-domain	Domain placement
1. Knowing student dispositions. The principal strives to learn the personal qualities of all students.	A B
2. Using student achievement data. The principal uses data from tests results to identify the instructional needs of each student.	A B
3. Developing varied approaches to instruction. The principal recognizes the importance of providing instructional approaches that meet the diverse needs of all students.	A B
4. Providing incentives for student performance. The principal develops incentives designed to encourage improved student performance.	A B
5. Providing additional learning time. The principal utilizes practices that maximize learning time.	A B

*(table continues)*

Table B4 (continued)

6. Involving other key persons. The principal relies on individuals outside the faculty to assist students in the learning process.	A B
7. Recognizing student accomplishments. The principal periodically celebrates student accomplishments throughout the school year.	A B

## Validation Instrument C

### *Instructions for Completing the Questionnaire*

1. Carefully read the definitions for the domains (A and B) and sub-domains (1 – 7).  
It may be advantageous to place the definitions pages above or beside each questionnaire page. Please go to Table 1 (now Table B5 in this appendix) and complete directions 2 through 5.
2. Place each item into a sub-domain by circling the appropriate number.
3. Rate the level of association of each item with the selected sub-domain. Circle the number of the appropriate response.  
1 = Very weak, 2 = Weak, 3 = Strong, 4 = Very strong.
4. Indicate how clear you think each statement is using the following scale:  
1 = Very unclear, delete; 2 = Somewhat clear, revise; and 3 = Clear, leave as written.
5. For any items you rate as 1 or 2 for clarity or association, please write your suggestions for improvement directly on each page.
6. Please go to Table 2 (now Table B6 in this appendix) and place each sub-domain into a domain by circling the letter of the appropriate domain.

## Definitions

### *Domains (A and B)*

- A. Data Analysis. The principal collaborates with teachers to develop various analytic approaches to collecting student achievement data.
- B. Assessment. The principal incorporates several techniques for training various groups how to assess student achievement information.

### *Sub-domains (1 –7)*

1. Collecting data. The principal collaborates with teachers to strategically collect data from various sources to use in assessing student achievement test results.
2. Training staff. The principal provides professional development opportunities on assessment for all teachers.
3. Utilizing classroom assessment information. The principal works with teachers to use classroom assessment information for improving the instructional needs of students.
4. Analyzing data. The principal assists teachers in the process of comparatively analyzing student achievement test results with a variety of other data.
5. Using data. The principal uses student achievement data to provide specific instructional programs for meeting the individual needs of different types of learners.
6. Evaluating student progress. The principal directs teachers to develop progress evaluation procedures that include self-evaluation components for students.
7. Monitoring student progress. The principal provides various assessment resources for students to implement in monitoring personal progress.

Table B5

*Placement, Association, and Clarity of Questionnaire Items for Domains Data Analysis and Assessment*

1. The principal worked with the professional staff to develop a strategic approach to data collection.	1 2 3 4 5 6 7	1 2 3 4	1 2 3
2. The principal analyzed data from multiple sources in collaboration with the professional staff.	1 2 3 4 5 6 7	1 2 3 4	1 2 3
3. The principal used data from multiple sources to drive instructional goal setting in the school improvement plan.	1 2 3 4 5 6 7	1 2 3 4	1 2 3
4. The principal provided staff training in the processes of collecting assessment data.	1 2 3 4 5 6 7	1 2 3 4	1 2 3
5. The principal established a variety of classroom-based assessment systems to monitor student progress.	1 2 3 4 5 6 7	1 2 3 4	1 2 3
6. The principal required teachers to evaluate student progress on tests designed according to Virginia Standards of Learning testing format.	1 2 3 4 5 6 7	1 2 3 4	1 2 3

*(table continues)*

Table B5 (continued)

7. The principal collected classroom assessment information from teachers.	1 2 3 4 5 6 7	1 2 3 4	1 2 3
8. The principal collected achievement data from Virginia Standards of Learning test results.	1 2 3 4 5 6 7	1 2 3 4	1 2 3
9. The principal analyzed the disaggregating of student achievement data with the professional staff.	1 2 3 4 5 6 7	1 2 3 4	1 2 3
10. The principal used student achievement data to monitor the benefit of instruction to student learning.	1 2 3 4 5 6 7	1 2 3 4	1 2 3
11. The principal provided staff training in the process of analyzing classroom-based assessment.	1 2 3 4 5 6 7	1 2 3 4	1 2 3

(table continues)

Table B5 (continued)

12. The principal used weekly classroom assessments to monitor student progress.	1 2 3 4 5 6	1 2 3 4	1 2 3
13. The principal instructed teachers to evaluate student progress on Virginia Standards of Learning scoring rubrics.	1 2 3 4 5 6 7	1 2 3 4	1 2 3
14. The principal used classroom assessment information to meet the needs of students.	1 2 3 4 5 6 7	1 2 3 4	1 2 3
15. The principal organized collected achievement data from Virginia Standards of Learning test results.	1 2 3 4 5 6 7	1 2 3 4	1 2 3
16. The principal instructed teachers to analyze student achievement results from Virginia Standards of Learning test data with classroom grades.	1 2 3 4 5 6 7	1 2 3 4	1 2 3
17. The principal used data from a variety of sources to evaluate the benefit of instruction to student learning.	1 2 3 4 5 6 7	1 2 3 4	1 2 3

(table continues)

Table B5 (continued)

<p>18. The principal involved the personnel of the school in identifying the types of staff training needed to improve student achievement.</p>	<p>1 2 3 4 5 6 7</p>	<p>1 2 3 4</p>	<p>1 2 3</p>
<p>19. The principal instructed teacher to provide rubrics for students to use in monitoring their progress.</p>	<p>1 2 3 4 5 6 7</p>	<p>1 2 3 4</p>	<p>1 2 3</p>
<p>20. The principal required teachers to provide feedback to students on weekly administered Virginia Standards of Learning practice tests when evaluating student progress.</p>	<p>1 2 3 4 5 6 7</p>	<p>1 2 3 4</p>	<p>1 2 3</p>
<p>21. The principal developed school – wide remediation plans from classroom assessment information.</p>	<p>1 2 3 4 5 6 7</p>	<p>1 2 3 4</p>	<p>1 2 3</p>
<p>22. The principal directed the professional staff to collaboratively collect achievement data from a variety of sources.</p>	<p>1 2 3 4 5 6 7</p>	<p>1 2 3 4</p>	<p>1 2 3</p>

(table continues)

Table B5 (continued)

<p>23. The principal instructed teachers to analyze student achievement data within grade levels across disciplines.</p>	<p>1 2 3 4 5 6 7</p>	<p>1 2 3 4</p>	<p>1 2 3</p>
<p>24. The principal used achievement data to evaluate the curriculum.</p>	<p>1 2 3 4 5 6 7</p>	<p>1 2 3 4</p>	<p>1 2 3</p>
<p>25. The principal informed personnel of off-campus staff training that targeted assessment practices that focused on student achievement.</p>	<p>1 2 3 4 5 6 7</p>	<p>1 2 3 4</p>	<p>1 2 3</p>
<p>26. The principal provided information on online assessments to be used by students to monitor their progress.</p>	<p>1 2 3 4 5 6 7</p>	<p>1 2 3 4</p>	<p>1 2 3</p>
<p>27. The principal notified students how to evaluate individual progress by using the Virginia Standards of Learning online tests.</p>	<p>1 2 3 4 5 6 7</p>	<p>1 2 3 4</p>	<p>1 2 3</p>
<p>28. The principal designed instruction from classroom assessment information.</p>	<p>1 2 3 4 5 6 7</p>	<p>1 2 3 4</p>	<p>1 2 3</p>

(table continues)

Table B5 (continued)

<p>29. The principal maintained a comprehensive data collection profile of community characteristics.</p>	<p>1 2 3 4 5 6 7</p>	<p>1 2 3 4</p>	<p>1 2 3</p>
<p>30. The principal developed a tracking system that would allow the professional staff to analyze student achievement data from feeder schools.</p>	<p>1 2 3 4 5 6 7</p>	<p>1 2 3 4</p>	<p>1 2 3</p>
<p>31. The principal used achievement data to evaluate teacher instructional assignments.</p>	<p>1 2 3 4 5 6 7</p>	<p>1 2 3 4</p>	<p>1 2 3</p>
<p>32. The principal secured resources to support staff training activities that focused on assessment.</p>	<p>1 2 3 4 5 6 7</p>	<p>1 2 3 4</p>	<p>1 2 3</p>
<p>33. The principal implemented district policy on grade averaging to be used by students to monitor their academic progress.</p>	<p>1 2 3 4 5 6 7</p>	<p>1 2 3 4</p>	<p>1 2 3</p>

*(table continues)*

Table B5 (continued)

<p>34. The principal encouraged students to take ownership of their learning by evaluating their progress.</p>	<p>1 2 3 4 5 6 7</p>	<p>1 2 3 4</p>	<p>1 2 3</p>
<p>35. The principal used classroom assessment information to identify areas in which students needed instructional support.</p>	<p>1 2 3 4 5 6 7</p>	<p>1 2 3 4</p>	<p>1 2 3</p>

Table B6

*Placement of Sub-domains into Domains: Data Analysis and Assessment*

Sub-domain	Domain placement	
1. Collecting data. The principal collaborates with teachers to strategically collect data from various sources to use in assessing student achievement test results.	A	B
2. Training staff. The principal provides professional development opportunities on assessment for all teachers.	A	B
3. Utilizing classroom assessment information. The principal works with teachers to use classroom assessment information for improving the instructional needs of students.	A	B
4. Analyzing data. The principal assists teachers in the process of comparatively analyzing student achievement test results with a variety of other data.	A	B

*(table continues)*

Table B6 (continued)

<p>5. Using data. The principal uses student achievement data to provide specific instructional programs for meeting the individual needs of different types of learners.</p>	<p>A B</p>
<p>6. Evaluating student progress. The principal directs teachers to develop progress evaluation procedures that include self-evaluation components for students.</p>	<p>A B</p>
<p>7. Monitoring student progress. The principal provides various assessment resources for students to implement in monitoring personal progress.</p>	<p>A B</p>

APPENDIX C  
FINAL VALIDATION INSTRUMENTS

Validation Instrument A

Association of Questionnaire Items with Expected Sub-domains

*Instructions for Completing the Questionnaire*

1. Please read carefully the definitions for sub-domains 1 – 6.
2. Go to table one (now Table C1 in this appendix) and complete the following:
3. Keeping the definitions in mind, place each item into a sub-domain by circling the appropriate number. (It may be advantageous to place the definitions page above or beside the questionnaire.)
4. Rate the level of association of each item with the selected sub-domain using the following scale: 1 = Very weak association, 2 = Weak association, 3 = Strong association, 4 = Very strong association
5. Rate the clarity of each item using the following scale: 1 = Very unclear, delete; 2 = Somewhat clear, revise; and 3 = Clear, leave as written
6. For any items you rate 1 or 2 for association or clarity, please write your suggestions for improvement directly on the questionnaire.

## Definitions

### Domains (A – C)

- A. Curriculum alignment. The principal works with teachers to align the state standards with student learning goals, curriculum, assessments, and teacher instructional documents.
- B. Implementing curriculum. The principal provides support to teachers by providing curriculum materials and guides.
- C. Leadership. The principal works collaboratively with stakeholders to develop a mission that emphasizes long-range instructional goals to improve student achievement.

### *Sub-domains (1 –6)*

1. Creating a strong sense of mission. The principal leads the process for developing a common mission with the stakeholders of the school.
2. Connecting learning goals to state standards. The principal communicates how learning goals affect academic performance.
3. Using guides. The principal provides teachers with resources for building instructional curriculum guides.
4. Setting goals for student achievement. The principal collaborates with teachers to establish long range measurable student achievement goals.
5. Reviewing teachers' instructional documents. The principal monitors the documents used by teachers to enhance instruction.
6. Building a strong culture of collaboration. The principal uses shared decision-making to strengthen the collaborative culture of the school.

Table C1

*Placement, Association, and Clarity of Questionnaire Items for Domains Curriculum Alignment, Implementing Curriculum and Leadership*

Questionnaire statements	Sub-domain placement	Strength of association with the sub-domain	Clarity of the item
1. My principal works with stakeholders to develop a common mission for the school.	1 2 3 4 5 6	1 2 3 4	1 2 3
2. My principal collaborates with teachers to set measurable achievement goals for all students.	1 2 3 4 5 6	1 2 3 4	1 2 3
3. My principal offers shared decision making opportunities to the extended school community.	1 2 3 4 5 6	1 2 3 4	1 2 3
4. My principal asks teachers to align student learning goals with the Virginia Standards of Learning.	1 2 3 4 5 6	1 2 3 4	1 2 3
5. My principal reviews teacher lesson plans at least weekly.	1 2 3 4 5 6	1 2 3 4	1 2 3

*(table continues)*

Table C1 (continued)

6. My principal assists teachers in developing local curriculum guides.	1 2 3 4 5 6	1 2 3 4	1 2 3
7. My principal keeps the attention of stakeholders on the achievement of all students.	1 2 3 4 5 6	1 2 3 4	1 2 3
8. My principal collaborates with teachers on setting measurable student achievement goals for individual students.	1 2 3 4 5 6	1 2 3 4	1 2 3
9. My principal uses team-building strategies to get teachers to work together.	1 2 3 4 5 6	1 2 3 4	1 2 3
10. My principal asks teachers to explain the relationship of student learning goals to student performance on the Virginia Standards of Learning.	1 2 3 4 5 6	1 2 3 4	1 2 3
11. My principal reviews teacher grade books each grading period.	1 2 3 4 5 6	1 2 3 4	1 2 3
12. My principal works with teachers to develop curriculum guides designed to meet the Virginia Standards of Learning.	1 2 3 4 5 6	1 2 3 4	1 2 3

(table continues)

Table C1 (continued)

<p>13. My principal expresses the mission of the school in meetings with stakeholders.</p>	<p>1 2 3 4 5 6</p>	<p>1 2 3 4</p>	<p>1 2 3</p>
<p>14. My principal collaborates with teachers on setting measurable student achievement goals that cross grade levels.</p>	<p>1 2 3 4 5 6</p>	<p>1 2 3 4</p>	<p>1 2 3</p>
<p>15. My principal schedules time for instructional teams to collaborate during the school day.</p>	<p>1 2 3 4 5 6</p>	<p>1 2 3 4</p>	<p>1 2 3</p>
<p>16. My principal asks teachers to discuss with students the importance of aligning student learning goals with the Virginia Standards of Learning.</p>	<p>1 2 3 4 5 6</p>	<p>1 2 3 4</p>	<p>1 2 3</p>
<p>17. My principal reviews instructional pacing timelines.</p>	<p>1 2 3 4 5 6</p>	<p>1 2 3 4</p>	<p>1 2 3</p>

(table continues)

Table C1 (continued)

<p>18. My principal annually provides teachers with the Virginia Standards of Learning Curriculum Framework for each core area.</p>	<p>1 2 3 4 5 6</p>	<p>1 2 3 4</p>	<p>1 2 3</p>
<p>19. My principal works with stakeholders to keep the common mission.</p>	<p>1 2 3 4 5 6</p>	<p>1 2 3 4</p>	<p>1 2 3</p>
<p>20. My principal collaborates with teachers on setting measurable student achievement goals based on identified needs of individual students.</p>	<p>1 2 3 4 5 6</p>	<p>1 2 3 4</p>	<p>1 2 3</p>
<p>21. My principal empowers the staff to act on decisions generated through collaboration.</p>	<p>1 2 3 4 5 6</p>	<p>1 2 3 4</p>	<p>1 2 3</p>
<p>22. My principal asks teachers to discuss with parents the importance of aligning student learning goals with the Virginia Standards of Learning.</p>	<p>1 2 3 4 5 6</p>	<p>1 2 3 4</p>	<p>1 2 3</p>

*(table continues)*

Table C1 (continued)

23. My principal periodically reviews learning checklists kept by teachers.	1 2 3 4 5 6	1 2 3 4	1 2 3
24. My principal provides teachers with the Virginia Standards of Learning Enhanced Scope and Sequence.	1 2 3 4 5 6	1 2 3 4	1 2 3
25. My principal asks teachers to accommodate the needs of children from impoverished homes.	1 2 3 4 5 6	1 2 3 4	1 2 3
26. My principal collaborates with teachers on setting measurable objectives for meeting student achievement goals.	1 2 3 4 5 6	1 2 3 4	1 2 3
27. My principal works with stakeholders to keep the focus on the mission of the school.	1 2 3 4 5 6	1 2 3 4	1 2 3

*(table continues)*

Table C1 (continued)

<p>28. My principal asks teachers to align their instruction on specific student learning goals with the Virginia Standards of Learning.</p>	<p>1 2 3 4 5 6</p>	<p>1 2 3 4</p>	<p>1 2 3</p>
<p>29. My principal monitors the use of teacher instructional guides in the classroom.</p>	<p>1 2 3 4 5 6</p>	<p>1 2 3 4</p>	<p>1 2 3</p>
<p>30. My principal asks teachers to include sample strategies for teaching when building curriculum guides.</p>	<p>1 2 3 4 5 6</p>	<p>1 2 3 4</p>	<p>1 2 3</p>

## Validation Instrument B

### Association of Questionnaire Items with Expected Sub-domains

#### *Instructions for Completing the Questionnaire*

1. Please read carefully the definitions for sub-domains 1 – 6.
2. Go to table one (now Table C2 in this appendix) and complete the following:
  - a. Keeping the definitions in mind, place each item into a sub-domain by circling the appropriate number. (It may be advantageous to place the definitions pages above or beside the questionnaire.)
  - b. Rate the level of association of each item with the selected sub-domain using the following scale: 1 = Very weak association, 2 = Weak association, 3 = Strong association, 4 = Very strong association
  - c. Rate the clarity of each item using the following scale: 1 = Very unclear, delete; 2 = Somewhat clear, revise; and 3 = Clear, leave as written
3. For any items you rate as 1 or 2 for association or clarity, please write your suggestions for improvement directly on the questionnaire

## Definitions

### *Domains (A and B)*

- A. Intervention strategies. The principal uses disaggregated student achievement data to identify student instructional needs, designs instructional strategies for diverse student populations, and elicits teaching assistance from the community.
- B. Motivation of students. The principal collects information on factors that influence student achievement, provides incentives for improved student performance, and uses scheduling practices to maximize learning time.

### *Sub-domains (1 – 6)*

- 1. Knowing student conditions. The principal collects information from students on the factors that influence their academic performance.
- 2. Using student achievement data. The principal uses the results from tests to identify the instructional needs of each student.
- 3. Recognizing student accomplishments. The principal celebrates improved student performance throughout the school year.
- 4. Developing varied approaches to instruction. The principal asks teachers to use instruction that accommodates the needs of diverse learners.
- 5. Providing additional learning time. The principal uses scheduling practices that maximize learning time.
- 6. Involving the community in the learning process. The principal relies on individuals outside the faculty to assist students in their learning.

Table C2

*Placement, Association, and Clarity of Questionnaire Items for Intervention Strategies and Motivation of Students*

Questionnaire statements	Sub-domain placement	Strength of association with the sub-domain	Clarity of the item
1. My principal talks with students to identify how personal interests affect their learning.	1 2 3 4 5 6	1 2 3 4	1 2 3
2. My principal provides tangible rewards to students for improved performance.	1 2 3 4 5 6	1 2 3 4	1 2 3
3. My principal protects instructional time from interruptions.	1 2 3 4 5 6	1 2 3 4	1 2 3
4. My principal uses student achievement data to schedule students into classrooms.	1 2 3 4 5 6	1 2 3 4	1 2 3

*(table continues)*

Table C2 (continued)

5. My principal asks teachers to accommodate the needs of special education students.	1 2 3 4 5 6	1 2 3 4	1 2 3
6. My principal recruits community volunteers to assist students with their learning.	1 2 3 4 5 6	1 2 3 4	1 2 3
7. My principal studies the effect of each student's socioeconomic status on his or her learning.	1 2 3 4 5 6	1 2 3 4	1 2 3
8. My principal recognizes student performance at school board meetings.	1 2 3 4 5 6	1 2 3 4	1 2 3
9. My principal designs a master schedule that maximizes learning time in core subjects.	1 2 3 4 5 6	1 2 3 4	1 2 3
10. My principal instructs teachers to use student achievement data to meet the individual needs of students.	1 2 3 4 5 6	1 2 3 4	1 2 3

(table continues)

Table C2 (continued)

11. My principal asks teachers to accommodate the needs of gifted students.	1 2 3 4 5 6	1 2 3 4	1 2 3
12. My principal designs a school-community interaction plan for assisting students with their learning.	1 2 3 4 5 6	1 2 3 4	1 2 3
13. My principal asks students to talk about the effects of standardized teaching on their academic performance.	1 2 3 4 5 6	1 2 3 4	1 2 3
14. My principal recognizes student performance at school board meetings.	1 2 3 4 5 6	1 2 3 4	1 2 3
15. My principal instructs teachers to keep transition time between activities brief.	1 2 3 4 5 6	1 2 3 4	1 2 3
16. My principal uses student achievement data to assign students to remedial programs.	1 2 3 4 5 6	1 2 3 4	1 2 3

*(table continues)*

Table C2 (continued)

17. My principal asks teachers to accommodate the needs of at-risk students.	1 2 3 4 5 6	1 2 3 4	1 2 3
18. My principal asks community agencies to share programs that assist students in their learning.	1 2 3 4 5 6	1 2 3 4	1 2 3
19. My principal questions students about factors that influence their learning.	1 2 3 4 5 6	1 2 3 4	1 2 3
20. My principal praises student accomplishments over the public address system.	1 2 3 4 5 6	1 2 3 4	1 2 3
21. My principal secures additional learning time after school to implement remediation programs.	1 2 3 4 5 6	1 2 3 4	1 2 3

*(table continues)*

Table C2 (continued)

22. My principal uses student achievement data to enhance instruction for advanced learners.	1 2 3 4 5 6	1 2 3 4	1 2 3
23. My principal asks teachers to accommodate the needs of children from impoverished homes.	1 2 3 4 5 6	1 2 3 4	1 2 3
24. My principal provides adult volunteers to assist students in their learning.	1 2 3 4 5 6	1 2 3 4	1 2 3
25. My principal discusses with students how parents influence their learning.	1 2 3 4 5 6	1 2 3 4	1 2 3
26. My principal exempts students from exams as an incentive for passing Virginia Standards of Learning tests.	1 2 3 4 5 6	1 2 3 4	1 2 3
27. My principal asks teachers to design take-home remediation packets.	1 2 3 4 5 6	1 2 3 4	1 2 3

*(table continues)*

Table C2 (continued)

<p>28. My principal uses student achievement data to evaluate academic progress.</p>	<p>1 2 3 4 5 6</p>	<p>1 2 3 4</p>	<p>1 2 3</p>
<p>29. My principal asks teachers to accommodate the remediation needs of students who fail Virginia Standards of Learning tests.</p>	<p>1 2 3 4 5 6</p>	<p>1 2 3 4</p>	<p>1 2 3</p>
<p>30. My principal includes parents in remediation efforts to assist students in their learning.</p>	<p>1 2 3 4 5 6</p>	<p>1 2 3 4</p>	<p>1 2 3</p>

## Validation Instrument C

### Association of Questionnaire Items with Expected Sub-domains

#### *Instructions for Completing the Questionnaire*

1. Please read carefully the definitions for sub-domains 1 - 5.
2. Go to table one (now Table C3 in this appendix) and complete the following:
  - a. Keeping the definitions in mind, place each item into a sub-domain by circling the appropriate number. (It may be advantageous to place the definitions pages above or beside the questionnaire.)
  - b. Rate the level of association of each item with the selected sub-domain using the following scale: 1 = Very weak association, 2 = Weak association, 3 = Strong association, 4 = Very strong association
  - c. Rate the clarity of each item using the following scale: 1 = Very unclear, delete; 2 = Somewhat clear, revise; and 3 = Clear, leave as written
3. For any items you rate as 1 or 2 for association or clarity, please write your suggestions for improvement directly on the questionnaire.

## Definitions

### *Domains (A and B)*

A. Assessment. The principal provides teacher training on classroom assessment and asks teachers to use various practices in preparing students for Virginia Standards of Learning tests.

B. Data Analysis. The principal systematically works with teachers to collect student data from various sources, assists teachers in disaggregating collected student achievement data, and evaluates the effect of instruction on student learning.

### *Sub-domains (1 - 5)*

1. Collecting data. The principal collaborates with teachers on collecting data from various sources to use in evaluating student progress.
2. Training staff. The principal provides teachers with professional development opportunities on assessment.
3. Analyzing data. The principal assists teachers in the process of synthesizing test results.
4. Monitoring student progress. The principal asked teachers to align student assessments with the Virginia Standards of Learning.
5. Using data. The principal uses student test results to evaluate the effect of instruction on student performance.

Table C3

*Placement, Association, and Clarity of Questionnaire Items for Domains Assessment and Data Analysis*

Questionnaire statements	Sub-domain placement	Strength of association with the sub-domain	Clarity of the item
1. My principal collaborates with teachers on collecting socioeconomic data to use in evaluating student progress.	1 2 3 4 5	1 2 3 4	1 2 3
2. My principal assists teachers in analyzing data from multiple testing sources.	1 2 3 4 5	1 2 3 4	1 2 3
3. My principal uses student test results to drive instructional goal setting.	1 2 3 4 5	1 2 3 4	1 2 3
4. My principal provides teacher training on collecting assessment data.	1 2 3 4 5	1 2 3 4	1 2 3

*(table continues)*

Table C3 (continued)

5. My principal asks teachers to align tests with the Virginia Standards of Learning testing format.	1 2 3 4 5	1 2 3 4	1 2 3
6. My principal collaborates with teachers on collecting psychological data to use in evaluating student progress.	1 2 3 4 5	1 2 3 4	1 2 3
7. My principal analyzes disaggregated student achievement data with the teachers.	1 2 3 4 5	1 2 3 4	1 2 3
8. My principal uses student test results to monitor instructional benefit.	1 2 3 4 5	1 2 3 4	1 2 3
9. My principal provides teacher training on classroom-based assessment.	1 2 3 4 5	1 2 3 4	1 2 3
10. My principal asks teachers to align scoring rubrics with the Virginia Standards of Learning.	1 2 3 4 5	1 2 3 4	1 2 3

(table continues)

Table C3 (continued)

11. My principal collaborates with teachers on collecting health data to use in evaluating student progress.	1 2 3 4 5	1 2 3 4	1 2 3
12. My principal asks teachers to compare standardized test data with classroom grades.	1 2 3 4 5	1 2 3 4	1 2 3
13. My principal uses student test results to evaluate the curriculum.	1 2 3 4 5	1 2 3 4	1 2 3
14. My principal provides teacher training on how to apply assessment results to instruction.	1 2 3 4 5	1 2 3 4	1 2 3
15. My principal asks teachers to align tests with the Virginia Standards of Learning on-line practice tests.	1 2 3 4 5	1 2 3 4	1 2 3
16. My principal collaborates with teachers on collecting intelligence data to use in evaluating student progress.	1 2 3 4 5	1 2 3 4	1 2 3

(table continues)

Table C3 (continued)

17. My principal asks teachers to analyze achievement data across subjects.	1 2 3 4 5	1 2 3 4	1 2 3
18. My principal uses student test results to determine teacher instructional assignments.	1 2 3 4 5	1 2 3 4	1 2 3
19. My principal provides teachers with information on off-campus opportunities for training on assessment.	1 2 3 4 5	1 2 3 4	1 2 3
20. My principal asks teachers to align grading practices with the scoring of Virginia Standards of Learning tests.	1 2 3 4 5	1 2 3 4	1 2 3
21. My principal collaborates with teachers on collecting achievement data to use in evaluating student progress.	1 2 3 4 5	1 2 3 4	1 2 3

*(table continues)*

Table C3 (continued)

<p>22. My principal analyzes student achievement data from feeder schools.</p>	<p>1 2 3 4 5</p>	<p>1 2 3 4</p>	<p>1 2 3</p>
<p>23. My principal uses student test results to monitor progress on Virginia Standards of Learning assessments.</p>	<p>1 2 3 4 5</p>	<p>1 2 3 4</p>	<p>1 2 3</p>
<p>24. My principal provides resources to support teacher training activities on assessment.</p>	<p>1 2 3 4 5</p>	<p>1 2 3 4</p>	<p>1 2 3</p>
<p>25. My principal asks teachers to align school-wide remediation plans with the Virginia Standards of Learning.</p>	<p>1 2 3 4 5</p>	<p>1 2 3 4</p>	<p>1 2 3</p>

APPENDIX D  
COVER LETTER FOR INSTRUMENT VALIDATION

February 14, 2006

Dear participant:

I am designing a questionnaire to collect and identify practices implemented by principals in Virginia's public elementary, middle, and high schools that (1) lead to successful student achievement on Standards of Learning (SOL) tests; (2) distinguish SOL Accredited with Warning elementary, middle, and high schools from Fully Accredited elementary, middle, and high schools; and (3) have a direct effect on student achievement. Principals' awareness of these results should stimulate inquiry into the practices being used to attain high rates of student achievement leading to Full Accreditation.

This project is a validation of the questionnaire to be used in the study.

Should you choose to participate, please complete the enclosed questionnaire. It is important that you carefully read all instructions prior to filling out the questionnaire. At no time will your identity be revealed to anyone other than those working with the data. Questionnaires are numbered for follow-up purposes; however, no names will be associated with any responses in the data set or in the final report. Your consent to participate is considered given when you return the completed questionnaire. If you have questions, please contact me at (276) 988-8303 – extension 223, (276) 322-5352, or [gwilliams@tazewell.k12.va.us](mailto:gwilliams@tazewell.k12.va.us).

Because I am aware of the time constraints of your job, I am extremely grateful to you for helping me with this project.

Sincerely,

Gary O. Williams

APPENDIX E

CONTENT VALIDATION DATA FOR THE QUESTIONNAIRE ASSESSING PRINCIPALS' AND TEACHERS' OBSERVATIONS OF PRINCIPALS' PRACTICES LEADING TO STANDARDS OF LEARNING FULL ACCREDITATION

Table E1

*Content Validation of Questionnaire Assessing Principals' and Teachers' Observations of Principals' Practices Leading to Standards of Learning Full Accreditation in Virginia's Public Elementary, Middle, and High Schools: Classification of Items Into Sub-domains by Experts, November, 2006, Instrument A*

Item	Expected sub-domain	N	Missing n		Sub-domain 1. Creating a strong sense of mission		Sub-domain 2. Setting goals for student achievement		Sub-domain 3. Building a strong culture of collaboration		Sub-domain 4. Connecting specific content to state standards		Sub-domain 5. Reviewing teachers' instructional documents		Sub-domain 6. Using guides	
			n	%	n	%	n	%	n	%	n	%	n	%	n	%
1	1. Creating a strong sense of mission.	29			26	89.7	1	3.4	2	6.9						
2	1. Creating a strong sense of mission.	16			16	100.0										
3	1. Creating a strong sense of mission.	29			28	96.6					1	3.4				

(table continues)

Table E1 (continued)

Item	Expected sub-domain	N	Missing n		Sub-domain 1. Creating a strong sense of mission		Sub-domain 2. Setting goals for student achievement		Sub-domain 3. Building a strong culture of collaboration		Sub-domain 4. Connecting specific content to state standards		Sub-domain 5. Reviewing teachers' instructional documents		Sub-domain 6. Using guides	
			n	%	n	%	n	%	n	%	n	%	n	%	n	%
4	1. Creating a strong sense of mission.	29			27	93.1			2	6.9						
5	1. Creating a strong sense of mission.	29			28	96.6									1	3.4
6	2. Setting goals for student achievement.	29					25	86.2			3	10.3			1	3.4
7	2. Setting goals for student achievement.	29					28	96.6	1	3.4						
8	2. Setting goals for student achievement.	29					28	96.6	1	3.4						

(table continues)

Table E1 (continued)

Item	Expected sub-domain	N	Missing n		Sub-domain 1. Creating a strong sense of mission		Sub-domain 2. Setting goals for student achievement		Sub-domain 3. Building a strong culture of collaboration		Sub-domain 4. Connecting specific content to state standards		Sub-domain 5. Reviewing teachers' instructional documents		Sub-domain 6. Using guides	
			n	%	n	%	n	%	n	%	n	%	n	%	n	%
9	2. Setting goals for student achievement.	29					25	86.2	4	13.8						
10 <sup>a</sup>	2. Setting goals for student achievement.	16	1	6.2			15	93.8								
11.	3. Building a strong culture of collaboration.	29			1	3.4			28	96.6						
12	3. Building a strong culture of collaboration.	29			3	10.3	1	3.4	25	86.2						

(table continues)

Table E1 (continued)

Item	Expected sub-domain	N	Missing <i>n</i>		Sub-domain 1. Creating a strong sense of mission		Sub-domain 2. Setting goals for student achievement		Sub-domain 3. Building a strong culture of collaboration		Sub-domain 4. Connecting specific content to state standards		Sub-domain 5. Reviewing teachers' instructional documents		Sub-domain 6. Using guides	
			<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
13	3. Building a strong culture of collaboration.	15							15	100.0						
14	3. Building a strong culture of collaboration.	29			1	3.4	1	3.4	27	93.1						
15	3. Building a strong culture of collaboration.	29			4	13.8			25	86.2						
16	4. Connecting specific content to state standards.	18									18	100.0				

(table continues)

Table E1 (continued)

Item	Expected sub-domain	N	Missing n		Sub-domain 1. Creating a strong sense of mission		Sub-domain 2. Setting goals for student achievement		Sub-domain 3. Building a strong culture of collaboration		Sub-domain 4. Connecting specific content to state standards		Sub-domain 5. Reviewing teachers' instructional documents		Sub-domain 6. Using guides	
			n	%	n	%	n	%	n	%	n	%	n	%	n	%
17	4. Connecting specific content to state standards.	18							1	5.6	17	94.4				
18 <sup>b</sup>	4. Connecting specific content to state standards.	18	2	11.1					1	5.6	15	83.3				
19 <sup>c</sup>	4. Connecting specific content to state standards.	18	2	11.1							16	88.9				

(table continues)

Table E1 (continued)

Item	Expected sub-domain	N	Missing n		Sub-domain 1. Creating a strong sense of mission		Sub-domain 2. Setting goals for student achievement		Sub-domain 3. Building a strong culture of collaboration		Sub-domain 4. Connecting specific content to state standards		Sub-domain 5. Reviewing teachers' instructional documents		Sub-domain 6. Using guides	
			n	%	n	%	n	%	n	%	n	%	n	%	n	%
20 <sup>d</sup>	4. Connecting specific content to state standards.	18	2	11.1							16	88.9				
21	5. Reviewing teachers' instructional documents.	29											29	100.0		
22	5. Reviewing teachers' instructional documents.	29											29	100.0		

(table continues)

Table E1 (continued)

Item	Expected sub-domain	N	Missing n		Sub-domain 1. Creating a strong sense of mission		Sub-domain 2. Setting goals for student achievement		Sub-domain 3. Building a strong culture of collaboration		Sub-domain 4. Connecting learning content to state standards		Sub-domain 5. Reviewing teachers' instructional documents		Sub-domain 6. Using guides	
			n	%	n	%	n	%	n	%	n	%	n	%	n	%
23	5. Reviewing teachers' instructional documents.	29							1	3.4			25	86.2	3	10.3
24	5. Reviewing teachers' instructional documents.	29											29	100.0		
25	5. Reviewing teachers' instructional documents.	29											25	86.2	4	13.8
26	6. Using guides.	29													29	100.0
27	6. Using guides.	29					1	3.4			3	10.3	1	3.4	24	82.8

(table continues)

Table E1 (continued)

Item	Expected sub-domain	N	Missing n		Sub-domain 1. Creating a strong sense of mission		Sub-domain 2. Setting goals for student achievement		Sub-domain 3. Building a strong culture of collaboration		Sub-domain 4. Connecting learning content to state standards		Sub-domain 5. Reviewing teachers' instructional documents		Sub-domain 6. Using guides	
			n	%	n	%	n	%	n	%	n	%	n	%	n	%
28	6. Using guides.	29									5	17.2			24	82.8
29	6. Using guides.	29									5	17.2			24	82.8
30	6. Using guides.	16													16	100.0

Note: Items 1-30 are in Appendix E. Questionnaire items for Instrument A were validated by four groups at different times: a group of 29 participants, a group of 18 participants, a group of 16 participants, and a group of 15 participants as indicated in the N column. <sup>a</sup>One respondent of the group of 16 participants placed item 10 in Sub-domain 5 of Instrument B,  $n = 1$  and  $\% = 6.3$ . <sup>b</sup>Two respondents in the group of 18 participants placed item 18 in Sub-domain 5 of Instrument C,  $n = 2$  and  $\% = 11.1$ . <sup>c</sup>Two respondents in the group of 18 participants placed item 19 in Sub-domain 3 of Instrument C,  $n = 2$  and  $\% = 11.1$ . <sup>d</sup>One respondent in the group of 18 participants placed item 20 in Sub-domain 3 of Instrument C,  $n = 1$  and  $\% = 5.6$ .

Table E2

*Content Validation of Questionnaire Assessing Principals' and Teachers' Observations of Principals' Practices Leading to Standards of Learning Full Accreditation in Virginia's Public Elementary, Middle, and High Schools: Classification of Items Into Sub-domains by Experts, November, 2006, Instrument B*

Item	Expected sub-domain	N	Missing n		Sub-domain 1. Knowing student conditions		Sub-domain 2. Recognizing student accomplishments		Sub-domain 3. Providing additional learning time		Sub-domain 4. Using student achievement data		Sub-domain 5. Developing varied approaches to instruction		Sub-domain 6. Involving the community in the learning process	
			n	%	n	%	n	%	n	%	n	%	n	%	n	%
31	1. Knowing student conditions.	28			27	96.4	1	3.6								
32	1. Knowing student conditions.	28			28	100.0										
33	1. Knowing student conditions.	28			24	85.7					2	7.1	2	7.1		
34	1. Knowing student conditions.	28			28	100.0										

*(table continues)*

Table E2 (continued)

Item	Expected sub-domain	N	Missing <i>n</i>		Sub-domain 1. Knowing student conditions		Sub-domain 2. Recognizing student accomplishments		Sub-domain 3. Providing additional learning time		Sub-domain 4. Using student achievement data		Sub-domain 5. Developing varied approaches to instruction		Sub-domain 6. Involving the community in the learning process	
			<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
35	1. Knowing student conditions.	28			27	96.4									1	3.6
36	2. Recognizing student accomplishments.	28					28	100.0								
37	2. Recognizing student accomplishments	28					28	100.0								
38	2. Recognizing student accomplishments.	28			1	3.6	26	92.9					1	3.6		

(table continues)

Table E2 (continued)

Item	Expected sub-domain	N	Missing n		Sub-domain 1. Knowing student conditions		Sub-domain 2. Recognizing student accomplishments		Sub-domain 3. Providing additional learning time		Sub-domain 4. Using student achievement data		Sub-domain 5. Developing varied approaches to instruction		Sub-domain 6. Involving the community in the learning process	
			n	%	n	%	n	%	n	%	n	%	n	%	n	%
39	2. Recognizing student accomplishments.	28					28	100.0								
40	2. Recognizing student accomplishments.	28			1	3.6	23	82.1			3	10.7	1	3.6		
41	3. Providing additional learning time.	28							28	100.0						
42	3. Providing additional learning time.	28							28	100.0						

(table continues)

Table E2 (continued)

Item	Expected sub-domain	N	Missing n		Sub-domain 1. Knowing student conditions		Sub-domain 2. Recognizing student accomplishments		Sub-domain 3. Providing additional learning time		Sub-domain 4. Using student achievement data		Sub-domain 5. Developing varied approaches to instruction		Sub-domain 6. Involving the community in the learning process	
			n	%	n	%	n	%	n	%	n	%	n	%	n	%
43	3. Providing additional learning time.	28					1	3.6	26	92.9			1	3.6		
44	3. Providing additional learning time.	28					1	3.6	25	89.3			1	3.6	1	3.6
45 <sup>a</sup>	3. Providing additional learning time.	16	1	6.2					15	93.8						
46	4. Using student achievement data.	28							1	3.6	27	96.4				

(table continues)

Table E2 (continued)

Item	Expected sub-domain	N	Missing n		Sub-domain 1. Knowing student conditions		Sub-domain 2. Recognizing student accomplishments		Sub-domain 3. Providing additional learning time		Sub-domain 4. Using student achievement data		Sub-domain 5. Developing varied approaches to instruction		Sub-domain 6. Involving the community in the learning process	
			n	%	n	%	n	%	n	%	n	%	n	%	n	%
47	4. Using student achievement data.	28			2	7.1					23	82.1	3	10.7		
48	4. Using student achievement data.	28			1	3.6					25	89.3	2	7.1		
49	4. Using student achievement data.	28									23	82.1	5	17.9		

(table continues)

Table E2 (continued)

Item	Expected sub-domain	N	Missing n		Sub-domain 1. Knowing student conditions		Sub-domain 2. Recognizing student accomplishments		Sub-domain 3. Providing additional learning time		Sub-domain 4. Using student achievement data		Sub-domain 5. Developing varied approaches to instruction		Sub-domain 6. Involving the community in the learning process	
			n	%	n	%	n	%	n	%	n	%	n	%	n	%
50	4. Using student achievement data.	28									27	96.4	1	3.6		
51	5. Developing varied approaches to instruction.	28									1	3.6	27	96.4		
52	5. Developing varied approaches to instruction.	28									2	7.1	26	92.9		

(table continues)

Table E2 (continued)

Item	Expected sub-domain	N	Missing n		Sub-domain 1. Knowing student conditions		Sub-domain 2. Recognizing student accomplishments		Sub-domain 3. Providing additional learning time		Sub-domain 4. Using student achievement data		Sub-domain 5. Developing varied approaches to instruction		Sub-domain 6. Involving the community in the learning process	
			n	%	n	%	n	%	n	%	n	%	n	%	n	%
53	5. Developing varied approaches to instruction.	28			2	7.1					2	7.1	24	85.3		
54 <sup>b</sup>	5. Developing varied approaches to instruction.	16	1	6.2									15	93.8		
55 <sup>c</sup>	5. Developing varied approaches to instruction.	15	2	13.3									13	86.7		

(table continues)

Table E2 (continued)

Item	Expected sub-domain	N	Missing n		Sub-domain 1. Knowing student conditions		Sub-domain 2. Recognizing student accomplishments		Sub-domain 3. Providing additional learning time		Sub-domain 4. Using student achievement data		Sub-domain 5. Developing varied approaches to instruction		Sub-domain 6. Involving the community in the learning process	
			n	%	n	%	n	%	n	%	n	%	n	%	n	%
56	6. Involving the community in the learning process.	28													28	100.0
57	6. Involving the community in the learning process.	28													28	100.0

(table continues)

Table E2 (continued)

Item	Expected sub-domain	N	Missing n		Sub-domain 1. Knowing student conditions		Sub-domain 2. Recognizing student accomplishments		Sub-domain 3. Providing additional learning time		Sub-domain 4. Using student achievement data		Sub-domain 5. Developing varied approaches to instruction		Sub-domain 6. Involving the community in the learning process	
			n	%	n	%	n	%	n	%	n	%	n	%	n	%
58	6. Involving the community in the learning process.	28													28	100.0
59	6. Involving the community in the learning process.	28													28	100.0

(table continues)

Table E2 (continued)

Item	Expected sub-domain	N	Missing n		Sub-domain 1. Knowing student conditions		Sub-domain 2. Recognizing student accomplishments		Sub-domain 3. Providing additional learning time		Sub-domain 4. Using student achievement data		Sub-domain 5. Developing varied approaches to instruction		Sub-domain 6. Involving the community in the learning process	
			n	%	n	%	n	%	n	%	n	%	n	%	n	%
60	6. Involving the community in the learning process.	28			1	3.6							1	3.6	26	92.9

Note: Items 31-60 are in Appendix E. Questionnaire items for Instrument B were validated by three groups at different times: a group of 28 participants, a group of 16 participants, and a group of 15 participants as indicated in the N column. <sup>a</sup>One respondent of the group of 16 participants placed item 45 in Sub-domain 2 of Instrument A,  $n = 1$  and  $\% = 6.2$ . <sup>b</sup>One respondent of the group of 16 participants placed item 54 in Sub-domain 2 of Instrument A,  $n = 1$  and  $\% = 6.2$ . <sup>c</sup>Two respondents of the group of 15 participants placed item 55 in Sub-domain 4 of Instrument C,  $n = 2$  and  $\% = 13.3$ .

Table E3

*Content Validation of Questionnaire Assessing Principals' and Teachers' Observations of Principals' Practices Leading to Standards of Learning Full Accreditation in Virginia's Public Elementary, Middle, and High Schools: Classification of Items Into Sub-domains by Experts, November, 2006, Instrument C*

Item	Expected sub-domain	N	Missing n		Sub-domain 1. Collecting data		Sub-domain 2. Analyzing data		Sub-domain 3. Using data		Sub-domain 4. Training staff		Sub-domain 5. Monitoring student progress	
			n	%	n	%	n	%	n	%	n	%	n	%
61	1. Collecting data.	28			24	85.7			3	10.7			1	3.6
62	1. Collecting data.	28			27	96.4			1	3.6				
63	1. Collecting data.	28			25	89.3	2	7.1					1	3.6
64	1. Collecting data.	28			26	92.9			1	3.6			1	3.6
65	1. Collecting data.	28			23	82.1			5	17.9				

*(table continues)*

Table E3 (continued)

Item	Expected sub-domain	N	Missing n		Sub-domain 1. Collecting data		Sub-domain 2. Analyzing data		Sub-domain 3. Using data		Sub-domain 4. Training staff		Sub-domain 5. Monitoring student progress	
			n	%	n	%	n	%	n	%	n	%	n	%
66	2. Analyzing data.	28					26	92.9	1	3.6	1	3.6		
67	2. Analyzing data.	28					25	89.3	2	7.1			1	3.6
68 <sup>a</sup>	2. Analyzing data.	18	2	11.1			16	88.9						
69	2. Analyzing data.	28					26	92.9	1	3.6			1	3.6
70 <sup>b</sup>	2. Analyzing data.	15	1	7.0			14	93.0						
71	3. Using data.	28			1	3.6	1	3.6	26	92.9				
72	3. Using data.	28			1	3.6			24	85.7			3	10.7

*(table continues)*

Table E3 (continued)

Item	Expected sub-domain	N	Missing n		Sub-domain 1. Collecting data		Sub-domain 2. Analyzing data		Sub-domain 3. Using data		Sub-domain 4. Training staff		Sub-domain 5. Monitoring student progress	
			n	%	n	%	n	%	n	%	n	%	n	%
73	3. Using data.	28			2	7.1	3	10.7	23	82.1				
74	3. Using data.	16					2	12.7	14	87.3				
75 <sup>c</sup>	3. Using data.	15	1	6.7			3	13.4	12	80.0				
76	4. Training staff.	16									16	100.0		
77	4. Training staff.	28									28	100.0		
78	4. Training staff.	28									28	100.0		
79	4. Training staff.	28									28	100.0		
80	4. Training staff.	28									28	100.0		
81	5. Monitoring student progress.	28					1	3.6			3	10.7	24	85.7

(table continues)

Table E3 (continued)

Item	Expected sub-domain	N	Missing <i>n</i>		Sub-domain 1. Collecting data		Sub-domain 2. Analyzing data		Sub-domain 3. Using data		Sub-domain 4. Training staff		Sub-domain 5. Monitoring student progress	
					<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
82	5. Monitoring student progress.	28					2	7.1			2	7.1	24	85.7
83	5. Monitoring student progress.	28							1	3.6			27	96.4
84	5. Monitoring student progress.	28							1	3.6			27	96.4
85 <sup>d</sup>	5. Monitoring student progress.	28					1	3.6	5	17.9			22	78.6

Note: Items 61-85 are in Appendix E. Questionnaire items for Instrument C were validated by four groups at different times: a group of 28 participants, a group of 18 participants, a group of 16 participants, and a group of 15 participants as indicated in the *N* column. <sup>a</sup>One respondent of the group of 18 participants placed item 68 in Sub-domain 3 of Instrument A, *n* = 1 and % = 5.6, and one respondent placed item 68 in Sub-domain 3 of Instrument C, *n* = 1 and % = 5.6. <sup>b</sup>One respondent of the group of 15 participants placed item 70 in Sub-domain 3 of Instrument A, *n* = 1 and % = 6.7. <sup>c</sup>One respondents of the group of 15 participants placed item 75 in Sub-domain 4 of Instrument A, *n* = 1 and % = 6.7. <sup>d</sup>Highest validation achievable for Item 85 was *n* = 22 and % = 78.6.

Table E4

*Content Validation of Questionnaire Assessing Principals' and Teachers' Observations of Principals' Practices Leading to Standards of Learning Full Accreditation in Virginia's Public Elementary, Middle, and High Schools: Strength of Association of Items With Sub-domains and Clarity by Experts, November, 2006, Instrument A*

Item	Expected sub-domain	Sub-domain 1. Creating a strong sense of mission							
				Item association			Item clarity		
		<i>N</i>	Missing <i>n</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>
1	1. Creating a strong sense of mission.	29	3	26	3.92	.27	26	3.00	.00
2	1. Creating a strong sense of mission.	16		16	3.67	.48	16	2.87	.34
3	1. Creating a strong sense of mission.	29	1	28	3.93	.26	28	3.00	.00
4	1. Creating a strong sense of mission.	29	2	27	3.93	.27	27	2.97	.19
5	1. Creating a strong sense of mission	29	1	28	3.96	.19	28	2.97	.19

*(table continues)*

Table E4 (continued)

Item	Expected sub-domain			Sub-domain 2. Setting goals for student achievement					
				Item association			Item clarity		
				<i>N</i>	Missing <i>n</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>
6	2. Setting goals for student achievement.	29	4	25	3.84	.37	25	2.93	.26
7	2. Setting goals for student achievement.	29	1	28	3.68	.48	28	2.90	.31
8	2. Setting goals for student achievement.	29	1	28	3.75	.44	28	2.97	.19
9	2. Setting goals for student achievement.	29	4	25	3.92	.28	25	3.00	.00
10	2. Setting goals for student achievement.	16	1	15	3.73	.46	15	2.93	.26

*(table continues)*

Table E4 (continued)

Item	Expected sub-domain			Sub-domain 3. Building a strong culture of collaboration					
				Item association			Item clarity		
		<i>N</i>	Missing <i>n</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>
11	3. Building a strong culture of collaboration.	29	1	28	3.57	.63	28	2.90	.31
12	3. Building a strong culture of collaboration.	29	4	25	3.56	.65	25	2.79	.49
13	3. Building a strong culture of collaboration.	15		15	3.70	.56	15	2.90	.31
14	3. Building a strong culture of collaboration.	29	2	27	3.85	.36	27	2.97	.19
15	3. Building a strong culture of collaboration.	29	4	25	3.80	.41	25	2.83	.47

(table continues)

Table E4 (continued)

Item	Expected sub-domain			Sub-domain 4. Connecting learning goals to state standards					
				Item association			Item clarity		
		<i>N</i>	Missing <i>n</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>
16	4. Connecting learning goals to state standards.	18		18	4.00	.00	18	3.00	.00
17	4. Connecting learning goals to state standards.	18	1	17	3.62	.64	17	2.79	.41
18	4. Connecting learning goals to state standards.	18	3	15	3.86	.36	15	2.79	.49
19	4. Connecting learning goals to state standards.	18	2	16	3.67	.58	16	2.69	.54
20	4. Connecting learning goals to state standards.	18	2	16	3.77	.44	16	2.77	.44

(table continues)

Table E4 (continued)

Item	Expected sub-domain	Sub-domain 5. Reviewing teachers' instructional documents							
		<i>N</i>	Missing <i>n</i>	Item association			Item clarity		
<i>n</i>	<i>M</i>			<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>		
21	5. Reviewing teachers' instructional documents.	29		29	3.79	.41	29	2.97	.19
22	5. Reviewing teachers' instructional documents.	29		29	3.59	.57	29	2.93	.26
23	5. Reviewing teachers' instructional documents.	29	4	25	3.76	.44	25	2.93	.26
24	5. Reviewing teachers' instructional documents.	29		29	3.76	.44	29	2.97	.19
25	5. Reviewing teachers' instructional documents.	29	1	28	3.92	.28	28	2.90	.31

*(table continues)*

Table E4 (continued)

Item	Expected sub-domain			Sub-domain 6. Using guides					
				Item association			Item clarity		
		<i>N</i>	Missing <i>n</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>
26	6. Using guides.	29		29	3.62	.56	29	2.93	.26
27	6. Using guides.	29	4	25	3.83	.38	25	2.86	.35
28	6. Using guides.	29	4	25	3.92	.28	25	3.00	.00
29	6. Using guides.	29	4	25	3.88	.34	25	3.00	.00
30	6. Using guides.	16		16	3.69	.60	16	2.94	.25

*Note:* Items 1-30 are in Appendix E. *Mean* and *Standard Deviation* for Item Association and Item Clarity for Instrument A were validated by four groups at different times: a group of 29 participants, a group of 18 participants, a group of 16 participants, and a group of 15 participants as indicated in the *N* column.

Table E5

*Content Validation of Questionnaire Assessing Principals' and Teachers' Observations of Principals' Practices Leading to Standards of Learning Full Accreditation in Virginia's Public Elementary, Middle, and High Schools: Strength of Association of Items With Sub-domains and Clarity by Experts, November, 2006, Instrument B*

Item	Expected sub-domain			Sub-domain 1. Knowing student conditions					
				Item association			Item clarity		
				<i>N</i>	Missing <i>n</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>
31	1. Knowing student conditions.	28	1	27	3.81	.40	27	3.00	.00
32	1. Knowing student conditions.	28		28	3.71	.54	28	2.93	.26
33	1. Knowing student conditions.	28	4	24	3.58	.65	24	2.79	.40
34	1. Knowing student conditions.	28		28	3.82	.39	28	2.96	.19
35	1. Knowing student conditions.	28	1	27	3.67	.68	27	2.82	.48

*(table continues)*

Table E5 (continued)

Item	Expected sub-domain			Sub-domain 2. Recognizing student accomplishments					
				Item association			Item clarity		
		<i>N</i>	Missing <i>n</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>
36	2. Recognizing student accomplishments.	28		28	3.86	.45	28	3.00	.00
37	2. Recognizing student accomplishments.	28		28	3.89	.45	28	3.00	.00
38	2. Recognizing student accomplishments.	28	2	26	3.77	.43	26	2.89	.32
39	2. Recognizing student accomplishments.	28		28	3.96	.19	28	3.00	.00
40	2. Recognizing student accomplishments.	28	5	23	3.65	.57	23	2.89	.32

(table continues)

Table E5 (continued)

Item	Expected sub-domain			Sub-domain 3. Providing additional learning time					
				Item association			Item clarity		
		<i>N</i>	Missing <i>n</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>
41	3. Providing additional learning time.	28		28	3.96	.19	28	3.00	.00
42	3. Providing additional learning time.	28		28	3.93	.38	28	2.96	.19
43	3. Providing additional learning time.	28	2	26	3.81	.40	26	2.89	.32
44	3. Providing additional learning time.	28	3	25	3.92	.28	25	2.93	.26
45	3. Providing additional learning time.	16	1	15	3.27	.96	15	2.50	.74

*(table continues)*

Table E5 (continued)

Item	Expected sub-domain			Sub-domain 4. Using student achievement data					
				Item association			Item clarity		
		<i>N</i>	Missing <i>n</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>
46	4. Using student achievement data.	28	1	27	3.85	.36	27	2.89	.32
47	4. Using student achievement data.	28	5	23	3.78	.60	23	2.93	.26
48	4. Using student achievement data.	28	3	25	3.88	.33	25	2.96	.19
49	4. Using student achievement data.	28	5	23	3.91	.29	23	3.00	.00
50	4. Using student achievement data.	28	1	27	3.81	.48	27	2.93	.26

(table continues)

Table E5 (continued)

Item	Expected sub-domain			Sub-domain 5. Developing varied approaches to instruction					
				Item association			Item clarity		
				<i>N</i>	Missing <i>n</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>
51	5. Developing varied approaches to instruction.	28	1	27	3.89	.32	27	2.96	.19
52	5. Developing varied approaches to instruction.	28	2	26	3.88	.33	26	3.00	.00
53	5. Developing varied approaches to instruction.	28	4	24	4.00	.00	24	3.00	.00
54	5. Developing varied approaches to instruction.	16	1	15	3.60	.63	15	2.67	.49
55	5. Developing varied approaches to instruction.	15	2	13	3.50	.63	13	2.56	.51

*(table continues)*

Table E5 (continued).

Item	Expected sub-domain			Sub-domain 6. Involving the community in the learning process					
				Item association			Item clarity		
		<i>N</i>	Missing <i>n</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>
56	6. Involving the community in the learning process.	28		28	3.79	.50	28	2.93	.38
57	6. Involving the community in the learning process.	28		28	3.64	.73	28	2.86	.45
58	6. Involving the community in the learning process.	28		28	3.86	.36	28	3.00	.00
59	6. Involving the community in the learning process.	28		28	3.79	.50	28	3.00	.00
60	6. Involving the community in the learning process.	28	2	26	3.81	.40	26	2.89	.32

*Note:* Items 31-60 are in Appendix E. *Mean* and *Standard Deviation* for Item Association and Item Clarity for Instrument B were validated by three groups at different times: a group of 28 participants, a group of 16 participants, and a group of 15 participants as indicated in the *N* column.

Table E6

*Content Validation of Questionnaire Assessing Principals' and Teachers' Observations of Principals' Practices Leading to Standards of Learning Full Accreditation in Virginia's Public Elementary, Middle, and High Schools: Strength of Association of Items With Sub-domains and Clarity by Experts, November, 2006, Instrument C*

Item	Expected sub-domain			Sub-domain 1. Data analysis					
				Item association			Item clarity		
		<i>N</i>	Missing <i>n</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>
61	1. Collecting data.	28	4	24	3.75	.53	24	2.96	.45
62	1. Collecting data.	28	1	27	3.59	.64	27	2.86	.45
63	1. Collecting data.	28	3	25	3.80	.41	25	2.93	.26
64	1. Collecting data.	28	2	26	3.81	.40	26	2.89	.32
65	1. Collecting data.	28	5	23	3.91	.29	23	2.89	.32

*(table continues)*

Table E6 (continued)

Item	Expected sub-domain			Sub-domain 2. Analyzing data					
				Item association			Item clarity		
				<i>N</i>	Missing <i>n</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>
66	2. Analyzing data.	28	2	28	3.88	.33	28	2.96	.19
67	2. Analyzing data.	28	3	28	3.88	.33	28	2.96	.19
68	2. Analyzing data.	18	2	18	3.50	.63	18	2.50	.73
69	2. Analyzing data.	28	2	28	3.77	.51	28	2.93	.26
70	2. Analyzing data.	15	1	14	3.79	.43	14	2.86	.36

(table continues)

Table E6 (continued)

Item	Expected sub-domain			Sub-domain 3. Using data					
				Item association			Item clarity		
				<i>N</i>	Missing <i>n</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>
71	3. Using data.	28	2	26	3.85	.37	26	2.96	.19
72	3. Using data.	28	4	24	3.88	.34	24	2.93	.26
73	3. Using data.	28	5	23	3.87	.34	23	2.93	.26
74	3. Using data	16	2	14	3.54	.67	14	2.77	.44
75	3. Using data.	15	3	12	3.92	.29	12	2.92	.29

(table continues)

Table E6 (continued)

Item	Expected sub-domain			Sub-domain 4. Training staff					
				Item association			Item clarity		
				<i>N</i>	Missing <i>n</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>
76	4. Training staff.	16		16	3.63	.81	16	2.69	.60
77	4. Training staff.	28		28	3.79	.42	28	2.89	.32
78	4. Training staff.	28		28	3.86	.36	28	2.96	.19
79	4. Training staff.	28		28	3.82	.39	28	3.00	.00
80	4. Training staff	28		28	3.89	.42	28	2.96	.19

*(table continues)*

Table E6 (continued)

Item	Expected sub-domain			Sub-domain 5. Monitoring student progress					
				Item association			Item clarity		
				<i>N</i>	Missing <i>n</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>
81	5. Monitoring student progress.	28	4	24	3.96	.20	24	2.96	.19
82	5. Monitoring student progress.	28	4	24	3.79	.42	24	2.96	.19
83	5. Monitoring student progress.	28	1	27	3.85	.36	27	2.93	.26
84	5. Monitoring student progress.	28	1	27	3.85	.46	27	2.96	.19
85	5. Monitoring student progress.	28	6	22	3.86	.35	22	2.89	.42

*Note:* Items 61-85 are in Appendix E. *Mean* and *Standard Deviation* for Item Association and Item Clarity for Instrument C were validated by four groups at different times: a group of 29 participants, a group of 18 participants, a group of 16 participants, and a group of 15 participants as indicated in the *N* column.

APPENDIX F  
FINAL VALIDATED ITEMS FOR THE  
PRINCIPAL'S PRACTICES QUESTIONNAIRE BY DOMAIN AND SUB-DOMAIN

*Validated Items from Validation Instrument B*

**Domain A: Leadership – The principal works collaboratively with stakeholders to develop a mission that emphasizes long range instructional goals to improve student achievement.**

**Sub-domain 1: Creating a strong sense of mission -- the principal leads the process for developing a common mission with the stakeholders of the school.**

1. My principal works with stakeholders to develop a common mission for the school.
2. My principal keeps the attention of stakeholders on the achievement mission of the school.
3. My principal expresses the mission of the school in meetings with stakeholders.
4. My principal works with stakeholders to formulate initiatives for achieving the mission of the school.
5. My principal works with stakeholders to keep the focus on the mission of the school.

**Sub-domain 2: Setting goals for student achievement -- the principal collaborates with teachers to establish long-range measurable student achievement goals.**

6. My principal collaborates with teachers to set measurable student achievement goals for all students.
7. My principal collaborates with teachers on setting measurable student achievement goals for individuals.
8. My principal collaborates with teachers on setting measurable student achievement goals that cross grade levels.
9. My principal collaborates with teachers on setting measurable student achievement goals based on identified needs of individual students.
10. My principal collaborates with teachers on setting student achievement goals based on measurable objectives.

**Sub-domain 3: Building a strong culture of collaboration -- the principal uses shared decision-making to strengthen the collaborative culture of the school.**

11. My principal offers shared decision-making opportunities to the extended school community.
12. My principal uses team-building strategies to get teachers to work together.
13. My principal uses shared decision-making to schedule times for instructional teams to collaborate.
14. My principal empowers the staff to act on decisions generated through collaboration.
15. My principal hires teachers who fit the collaborative culture of the school.

**Domain B: Curriculum alignment - the principal works with teachers to align the state standards with student learning goals, curriculum, assessments, and teacher instructional documents.**

**Sub-domain 4: Connecting specific content to state standards -- the principal asks teachers to align subject content with the Virginia Standards of Learning.**

16. My principal asks teachers to align their instruction on subject content with the Virginia Standards of Learning.
17. My principal asks teachers to align subject content with the Virginia Standards of Learning.
18. My principal asks teachers to discuss with parents the importance of aligning subject content with the Virginia Standards of Learning.
19. My principal asks teachers to explain the relationship of subject content to student performance on the Virginia Standards of Learning.
20. My principal asks teachers to discuss with students the importance of aligning subject content with the Virginia Standards of Learning.

**Sub-domain 5: Reviewing teachers' instructional documents -- the principal monitors the documents used by teachers to enhance instruction.**

21. My principal reviews teacher lesson plans at least weekly.
22. My principal reviews teacher grade books each grading period.
23. My principal reviews instructional pacing timelines.
24. My principal periodically reviews learning checklists kept by teachers.
25. My principal monitors the use of teacher instructional guides in the classroom.

**Domain C: Implementing curriculum - the principal provides support to teachers by providing curriculum materials and guides.**

**Sub-domain 6: Using guides -- the principal provides teachers with resources for building instructional curriculum guides.**

26. My principal assists teachers in developing local curriculum guides.
27. My principal works with teachers to develop curriculum guides designed to meet the Virginia Standards of Learning.
28. My principal annually provides teachers with the Virginia Standards of Learning Curriculum Framework for each core area.
29. My principal provides teachers with the Virginia Standards of Learning Enhanced Scope and Sequence.
30. My principal provides teachers with sample strategies for teaching to use in building curriculum guides.

**Domain A: Motivation of students – the principal collects information on factors that influence student achievement, provides incentives for improved student performance, and uses scheduling practices to maximize learning time.**

**Sub-domain 1: Knowing student conditions -- the principal collects information from students on the factors that influence their academic performance.**

31. My principal talks with students to identify how personal interests affect their learning.
32. My principal studies the effect of each student's socioeconomic status on his or her learning.
33. My principal asks students to talk about the effects of standardized teaching on their academic performance.
34. My principal questions students about factors that influence their learning.
35. My principal discusses with students how parents influence their learning.

**Sub-domain 2: Recognizing student accomplishments -- the principal celebrates improved student performance throughout the school year.**

36. My principal provides tangible rewards to students for improved performance.
37. My principal recognizes student performance at school board meetings.
38. My principal asks teachers to display student work in hallways.
39. My principal praises student accomplishments over the public address system.
40. My principal exempts students from exams as an incentive for passing Virginia Standards of Learning tests.

**Sub-domain 3: Providing additional learning time -- the principal uses scheduling practices that maximize learning time.**

41. My principal protects instructional time from interruptions.
42. My principal designs a master schedule that maximizes learning time in core subjects.
43. My principal instructs teachers to keep transition time between activities brief.
44. My principal secures additional learning time after school to implement remediation programs.
45. My principal asks teachers to maximize learning time by designing take-home remediation packets.

**Domain B: Intervention strategies – the principal uses disaggregated student achievement data to identify student instructional needs, designs instructional strategies for diverse student populations, and elicits teaching assistance from the community.**

**Sub-domain 4: Using student achievement data -- the principal uses the results from tests to identify the instructional needs of each student.**

- 46. My principal uses student achievement data to schedule students into classrooms.
- 47. My principal instructs teachers to use student achievement data to meet the individual needs of students.
- 48. My principal uses student achievement data to assign students to remedial programs.
- 49. My principal uses student achievement data to enhance instruction for advanced learners.
- 50. My principal uses student achievement data to evaluate academic progress.

**Sub-domain 5: Developing varied approaches to instruction -- the principal asks teachers to use instruction that accommodates the needs of diverse learners.**

- 51. My principal asks teachers to accommodate the needs of special education students.
- 52. My principal asks teachers to accommodate the needs of gifted students.
- 53. My principal asks teachers to accommodate the needs of at-risk students.
- 54. My principal asks teachers to accommodate the learning needs of children from impoverished homes.
- 55. My principal asks teachers to accommodate the remediation needs of inclusion students who fail Virginia Standards of Learning tests.

**Sub-domain 6: Involving the community in the learning process -- the principal relies on individuals outside the faculty to assist students in their learning.**

- 56. My principal recruits community volunteers to assist students with their learning.
- 57. My principal designs a school-community interaction plan for assisting students with their learning.

58. My principal asks community agencies to share programs that assist students in their learning.

59. My principal provides adult volunteers to assist students in their learning.

60. My principal includes parents in remediation efforts to assist students in their learning.

**Domain A: Data Analysis – The principal systematically works with teachers to collect student data from various sources, assists teachers in disaggregating collected student achievement data, and evaluates the effect of instruction on student learning.**

**Sub-domain 1: Collecting data -- the principal collaborates with teachers on collecting data from various sources to use in evaluating student progress.**

61. My principal collaborates with teachers on collecting socioeconomic data to use in evaluating student progress.

62. My principal collaborates with teachers on collecting psychological data to use in evaluating student progress.

63. My principal collaborates with teachers on collecting health data to use in evaluating student progress.

64. My principal collaborates with teachers on collecting intelligence data to use in evaluating student progress.

65. My principal collaborates with teachers on collecting achievement data to use in evaluating student progress.

**Sub-domain 2: Analyzing data -- the principal assists teachers in the process of synthesizing test results.**

66. My principal assists teachers in analyzing data from multiple testing sources.

67. My principal analyzes disaggregated student achievement data with the teachers.

68. My principal asks teachers to analyze student achievement test results using classroom grades.

69. My principal asks teachers to analyze achievement data across subjects.

70. My principal asks teachers to analyze student achievement test results from feeder schools.

**Sub-domain 3: Using data -- the principal uses student test results to evaluate the effect of instruction on student performance.**

- 71. My principal uses student test results to drive instructional goal setting.
- 72. My principal uses student test results to monitor instructional benefit.
- 73. My principal uses student test results to evaluate the curriculum.
- 74. My principal uses student test results to evaluate teacher instructional performance.
- 75. My principal uses Virginia Standards of Learning test results to monitor the effect of instruction on student performance.

**Domain B: Assessment – the principal provides teacher training on classroom assessment and asks teachers to use various practices in preparing students for Virginia Standards of Learning tests.**

**Sub-domain 4: Training staff -- the principal provides teachers with professional development opportunities on assessment.**

- 76. My principal provides teacher training on collecting assessment data.
- 77. My principal provides teacher training on classroom-based assessment.
- 78. My principal provides teacher training on how to apply assessment results to instruction.
- 79. My principal provides teachers with information on off-campus opportunities for training on assessment.
- 80. My principal provides resources to support teacher training activities on assessment.

**Sub-domain 5: Monitoring student progress -- The principal asked teachers to align student assessments with the Virginia Standards of Learning.**

- 81. My principal asks teachers to align tests with the Virginia Standards of Learning testing format.
- 82. My principal asks teachers to align scoring rubrics with the Virginia Standards of Learning.

83. My principal asks teachers to align tests with the Virginia Standards of Learning on-line practice tests.
84. My principal asks teachers to align grading practices with the scoring of Virginia Standards of Learning tests.
85. My principal asks teachers to align school-wide remediation plans with the Virginia Standards of Learning.

## APPENDIX G

### FINAL VALIDATED ITEMS FOR THE PRINCIPAL'S PRACTICES QUESTIONNAIRE BY DOMAIN AND SUB-DOMAIN

#### *Validated Items from Validation Instrument A*

**Domain A: Leadership – The principal works collaboratively with stakeholders to develop a mission that emphasizes long range instructional goals to improve student achievement.**

**Sub-domain 1: Creating a strong sense of mission -- the principal leads the process for developing a common mission with the stakeholders of the school.**

1. I work with stakeholders to develop a common mission for the school.
2. I keep the attention of stakeholders on the achievement mission of the school.
3. I express the mission of the school in meetings with stakeholders.
4. I work with stakeholders to formulate initiatives for achieving the mission of the school.
5. I work with stakeholders to keep the focus on the mission of the school.

**Sub-domain 2: Setting goals for student achievement -- the principal collaborates with teachers to establish long-range measurable student achievement goals.**

6. I collaborate with teachers to set measurable student achievement goals for all students.
7. I collaborate with teachers on setting measurable student achievement goals for individuals.
8. I collaborate with teachers on setting measurable student achievement goals that cross grade levels.
9. I collaborate with teachers on setting measurable student achievement goals based on identified needs of individual students.
10. I collaborate with teachers on setting student achievement goals based on measurable objectives.

**Sub-domain 3: Building a strong culture of collaboration -- The principal uses shared decision-making to strengthen the collaborative culture of the school.**

- 11. I offer shared decision-making opportunities to the extended school community.
- 12. I use team-building strategies to get teachers to work together.
- 13. I use shared decision-making to schedule times for instructional teams to collaborate.
- 14. I empower the staff to act on decisions generated through collaboration.
- 15. I hire teachers who fit the collaborative culture of the school.

**Domain B: Curriculum alignment - The principal works with teachers to align the state standards with student learning goals, curriculum, assessments, and teacher instructional documents.**

**Sub-domain 4: Connecting specific content to state standards -- the principal asks teachers to align subject content with the Virginia Standards of Learning.**

- 16. I ask teachers to align their instruction on subject content with the Virginia Standards of Learning.
- 17. I ask teachers to align subject content with the Virginia Standards of Learning.
- 18. I ask teachers to discuss with parents the importance of aligning subject content with the Virginia Standards of Learning.
- 19. I ask teachers to explain the relationship of subject content to student performance on the Virginia Standards of Learning.
- 20. I ask teachers to discuss with students the importance of aligning subject content with the Virginia Standards of Learning.

**Sub-domain 5: Reviewing teachers' instructional documents -- the principal monitors the documents used by teachers to enhance instruction.**

- 21. I review teacher lesson plans at least weekly.
- 22. I review teacher grade books each grading period.
- 23. I review instructional pacing timelines.
- 24. I periodically review learning checklists kept by teachers.

25. I monitor the use of teacher instructional guides in the classroom.

**Domain C: Implementing curriculum - The principal provides support to teachers by providing curriculum materials and guides.**

**Sub-domain 6: Using guides -- the principal provides teachers with resources for building instructional curriculum guides.**

26. I assist teachers in developing local curriculum guides.

27. I work with teachers to develop curriculum guides designed to meet the Virginia Standards of Learning.

28. I annually provide teachers with the Virginia Standards of Learning Curriculum Framework for each core area.

29. I provide teachers with the Virginia Standards of Learning Enhanced Scope and Sequence.

30. I provide teachers with sample strategies for teaching to use in building curriculum guides.

**Domain A: Motivation of students – the principal collects information on factors that influence student achievement, provides incentives for improved student performance, and uses scheduling practices to maximize learning time.**

**Sub-domain 1: Knowing student conditions -- the principal collects information from students on the factors that influence their academic performance.**

- 31. I talk with students to identify how personal interests affect their learning.
- 32. I study the effect of each student's socioeconomic status on his or her learning.
- 33. I ask students to talk about the effects of standardized teaching on their academic performance.
- 34. I question students about factors that influence their learning.
- 35. I discuss with students how parents influence their learning.

**Sub-domain 2: Recognizing student accomplishments -- the principal celebrates improved student performance throughout the school year.**

- 36. I provide tangible rewards to students for improved performance.
- 37. I recognize student performance at school board meetings.
- 38. I ask teachers to display student work in hallways.
- 39. I praise student accomplishments over the public address system.
- 40. I exempt students from exams as an incentive for passing Virginia Standards of Learning tests.

**Sub-domain 3: Providing additional learning time -- the principal uses scheduling practices that maximize learning time.**

- 41. I protect instructional time from interruptions.
- 42. I design a master schedule that maximizes learning time in core subjects.
- 43. I instruct teachers to keep transition time between activities brief.
- 44. I secure additional learning time after school to implement remediation programs.

45. I ask teachers to maximize learning time by designing take-home remediation packets.

**Domain B: Intervention strategies – The principal uses disaggregated student achievement data to identify student instructional needs, designs instructional strategies for diverse student populations, and elicits teaching assistance from the community.**

**Sub-domain 4: Using student achievement data -- the principal uses the results from tests to identify the instructional needs of each student.**

46. I use student achievement data to schedule students into classrooms.

47. I instruct teachers to use student achievement data to meet the individual needs of students.

48. I use student achievement data to assign students to remedial programs.

49. I use student achievement data to enhance instruction for advanced learners.

50. I use student achievement data to evaluate academic progress.

**Sub-domain 5: Developing varied approaches to instruction -- the principal asks teachers to use instruction that accommodates the needs of diverse learners.**

51. I ask teachers to accommodate the needs of special education students.

52. I ask teachers to accommodate the needs of gifted students.

53. I ask teachers to accommodate the needs of at-risk students.

54. I ask teachers to accommodate the learning needs of children from impoverished homes.

55. I ask teachers to accommodate the remediation needs of inclusion students who fail Virginia Standards of Learning tests.

**Sub-domain 6: Involving the community in the learning process -- the principal relies on individuals outside the faculty to assist students in their learning.**

56. I recruit community volunteers to assist students with their learning.

- 57. I design a school-community interaction plan for assisting students with their learning.
- 58. I ask community agencies to share programs that assist students in their learning.
- 59. I provide adult volunteers to assist students in their learning.
- 60. I include parents in remediation efforts to assist students in their learning.

**Domain A: Data Analysis – The principal systematically works with teachers to collect student data from various sources, assists teachers in disaggregating collected student achievement data, and evaluates the effect of instruction on student learning.**

**Sub-domain 1: Collecting data -- the principal collaborates with teachers on collecting data from various sources to use in evaluating student progress.**

- 61. I collaborate with teachers on collecting socioeconomic data to use in evaluating student progress.
- 62. I collaborate with teachers on collecting psychological data to use in evaluating student progress.
- 63. I collaborate with teachers on collecting health data to use in evaluating student progress.
- 64. I collaborate with teachers on collecting intelligence data to use in evaluating student progress.
- 65. I collaborate with teachers on collecting achievement data to use in evaluating student progress.

**Sub-domain 2: Analyzing data -- the principal assists teachers in the process of synthesizing test results.**

- 66. I assist teachers in analyzing data from multiple testing sources.
- 67. I analyze disaggregated student achievement data with the teachers.
- 68. I ask teachers to analyze student achievement test results using classroom grades.
- 69. I ask teachers to analyze achievement data across subjects.
- 70. I analyze student achievement test results from feeder schools.

**Sub-domain 3: Using data -- the principal uses student test results**

**to evaluate the effect of instruction on student performance.**

- 71. I use student test results to drive instructional goal setting.
- 72. I use student test results to monitor instructional benefit.
- 73. I use student test results to evaluate the curriculum.
- 74. I use student test results to evaluate teacher instructional performance.
- 75. I use Virginia Standards of Learning test results to monitor the effect of instruction on student performance.

**Domain B: Assessment – the principal provides teacher training on classroom assessment and asks teachers to use various practices in preparing students for Virginia Standards of Learning tests.**

**Sub-domain 4: Training staff -- the principal provides teachers with professional development opportunities on assessment.**

- 76. I provide teacher training on collecting assessment data.
- 77. I provide teacher training on classroom-based assessment.
- 78. I provide teacher training on how to apply assessment results to instruction.
- 79. I provide teachers with information on off-campus opportunities for training on assessment.
- 80. I provide resources to support teacher training activities on assessment.

**Sub-domain 5: Monitoring student progress -- The principal asked teachers to align student assessments with the Virginia Standards of Learning.**

- 81. I ask teachers to align tests with the Virginia Standards of Learning testing format.
- 82. I ask teachers to align scoring rubrics with the Virginia Standards of Learning.
- 83. I ask teachers to align tests with the Virginia Standards of Learning on-line practice tests.
- 84. I ask teachers to align grading practices with the scoring of Virginia Standards of Learning tests.
- 85. I ask teachers to align school-wide remediation plans with the Virginia Standards of Learning.

APPENDIX H  
SURVEY INSTRUMENT

Table H1

*Principal's Practices Questionnaire: FORM A (For Principals)*

Response	Question
___ 1 No ___ 2 Yes	1. I work with stakeholders to develop a common mission for the school.
___ 1 No ___ 2 Yes	2. I keep the attention of stakeholders on the achievement mission of the school.
___ 1 No ___ 2 Yes	3. I express the mission of the school in meetings with stakeholders.
___ 1 No ___ 2 Yes	4. I work with stakeholders to formulate initiatives for achieving the mission of the school.
___ 1 No ___ 2 Yes	5. I work with stakeholders to keep the focus on the mission of the school.
___ 1 No ___ 2 Yes	6. I collaborate with teachers to set measurable student achievement goals for all students.
___ 1 No ___ 2 Yes	7. I collaborate with teachers on setting measurable student achievement goals for individuals.
___ 1 No ___ 2 Yes	8. I collaborate with teachers on setting measurable student achievement goals that cross grade levels.
___ 1 No ___ 2 Yes	9. I collaborate with teachers on setting measurable student achievement goals based on identified needs of individual students.
___ 1 No ___ 2 Yes	10. I collaborate with teachers on setting student achievement goals based on measurable objectives.
___ 1 No ___ 2 Yes	11. I offer shared decision-making opportunities to the extended school community.
___ 1 No ___ 2 Yes	12. I use team-building strategies to get teachers to work together.
___ 1 No ___ 2 Yes	13. I use shared decision-making to schedule times for instructional teams to collaborate.

*(table continues)*

*Principal's Practices Questionnaire: FORM A (For Principals) (continued)*

Response	Question
___ 1 No ___ 2 Yes	14. I empower the staff to act on decisions generated through collaboration
___ 1 No ___ 2 Yes	15. I hire teachers who fit the collaborative culture of the school.
___ 1 No ___ 2 Yes	16. I ask teachers to align their instruction on subject content with the Virginia Standards of Learning.
___ 1 No ___ 2 Yes	17. I ask teachers to align subject content with the Virginia Standards of Learning.
___ 1 No ___ 2 Yes	18. I ask teachers to discuss with parents the importance of aligning subject content with the Virginia Standards of Learning.
___ 1 No ___ 2 Yes	19. I ask teachers to explain the relationship of subject content to student performance on the Virginia Standards of Learning.
___ 1 No ___ 2 Yes	20. I ask teachers to discuss with students the importance of aligning subject content with the Virginia Standards of Learning.
___ 1 No ___ 2 Yes	21. I review teacher lesson plans at least weekly.
___ 1 No ___ 2 Yes	22. I review teacher grade books each grading period
___ 1 No ___ 2 Yes	23. I review instructional pacing timelines.
___ 1 No ___ 2 Yes	24. I periodically review learning checklists kept by teachers.
___ 1 No ___ 2 Yes	25. I monitor the use of teacher instructional guides in the classroom.
___ 1 No ___ 2 Yes	26. I assist teachers in developing local curriculum guides.
___ 1 No ___ 2 Yes	27. I work with teachers to develop curriculum guides designed to meet the Virginia Standards of Learning.
___ 1 No ___ 2 Yes	28. I annually provide teachers with the Virginia Standards of Learning Curriculum Framework for each core area.
___ 1 No ___ 2 Yes	29. I provide teachers with the Virginia Standards of Learning Enhanced Scope and Sequence.
___ 1 No ___ 2 Yes	30. I provide teachers with sample strategies for teaching to use in building curriculum guides.

*(table continues)*

*Principal's Practices Questionnaire: FORM A (For Principals) (continued)*

Response	Question
___ 1 No ___ 2 Yes	31. I talk with students to identify how personal interests affect their learning.
___ 1 No ___ 2 Yes	32. I study the effect of each student's socioeconomic status on his or her learning.
___ 1 No ___ 2 Yes	33. I ask students to talk about the effects of standardized teaching on their academic performance.
___ 1 No ___ 2 Yes	34. I question students about factors that influence their learning.
	35. I discuss with students how parents influence their learning.
___ 1 No ___ 2 Yes	36. I provide tangible rewards to students for improved performance.
___ 1 No ___ 2 Yes	37. I recognize student performance at school board meetings.
___ 1 No ___ 2 Yes	38. I ask teachers to display student work in hallways.
___ 1 No ___ 2 Yes	39. I praise student accomplishments over the public address system.
___ 1 No ___ 2 Yes	40. I exempt students from exams as an incentive for passing Virginia Standards of Learning tests.
___ 1 No ___ 2 Yes	41. I protect instructional time from interruptions.
___ 1 No ___ 2 Yes	42. I design a master schedule that maximizes learning time in core subjects.
___ 1 No ___ 2 Yes	43. I instruct teachers to keep transition time between activities brief.
___ 1 No ___ 2 Yes	44. I secure additional learning time after school to implement remediation programs.
___ 1 No ___ 2 Yes	45. I ask teachers to maximize learning time by designing take-home remediation packets.
___ 1 No ___ 2 Yes	46. I use student achievement data to schedule students into classrooms.

*(table continues)*

*Principal's Practices Questionnaire: FORM A (For Principals) (continued)*

Response	Question
___ 1 No ___ 2 Yes	47. I instruct teachers to use student achievement data to meet the individual needs of students.
___ 1 No ___ 2 Yes	48. I use student achievement data to assign students to remedial programs.
___ 1 No ___ 2 Yes	49. I use student achievement data to enhance instruction for advanced learners.
___ 1 No ___ 2 Yes	50. I use student achievement data to evaluate academic progress.
___ 1 No ___ 2 Yes	51. I ask teachers to accommodate the needs of special education students.
___ 1 No ___ 2 Yes	52. I ask teachers to accommodate the needs of gifted students.
___ 1 No ___ 2 Yes	53. I ask teachers to accommodate the needs of at-risk students.
___ 1 No ___ 2 Yes	54. I ask teachers to accommodate the learning needs of children from impoverished homes.
___ 1 No ___ 2 Yes	55. I ask teachers to accommodate the remediation needs of inclusion students who fail Virginia Standards of Learning tests.
___ 1 No ___ 2 Yes	56. I recruit community volunteers to assist students with their learning
___ 1 No ___ 2 Yes	57. I design a school-community interaction plan for assisting students with their learning.
___ 1 No ___ 2 Yes	58. I ask community agencies to share programs that assist students in their learning.
___ 1 No ___ 2 Yes	59. I provide adult volunteers to assist students in their learning.
___ 1 No ___ 2 Yes	60. I include parents in remediation efforts to assist students in their learning.
___ 1 No ___ 2 Yes	61. I collaborate with teachers on collecting socioeconomic data to use in evaluating student progress.

*(table continues)*

*Principal's Practices Questionnaire: FORM A (For Principals) (continued)*

Response	Question
___ 1 No ___ 2 Yes	62. I collaborate with teachers on collecting psychological data to use in evaluating student progress.
___ 1 No ___ 2 Yes	63. I collaborate with teachers on collecting health data to use in evaluating student progress.
___ 1 No ___ 2 Yes	64. I collaborate with teachers on collecting intelligence data to use in evaluating student progress.
___ 1 No ___ 2 Yes	65. I collaborate with teachers on collecting achievement data to use in evaluating student progress.
___ 1 No ___ 2 Yes	66. I assist teachers in analyzing data from multiple testing sources.
___ 1 No ___ 2 Yes	67. I analyze disaggregated student achievement data with the teachers.
___ 1 No ___ 2 Yes	68. I ask teachers to analyze student achievement test results using classroom grades.
___ 1 No ___ 2 Yes	69. I ask teachers to analyze achievement data across subjects.
___ 1 No ___ 2 Yes	70. I analyze student achievement test results from feeder schools.
___ 1 No ___ 2 Yes	71. I use student test results to drive instructional goal setting.
___ 1 No ___ 2 Yes	72. I use student test results to monitor instructional benefit.
___ 1 No ___ 2 Yes	73. I use student test results to evaluate the curriculum.
___ 1 No ___ 2 Yes	74. I use student test results to evaluate teacher instructional performance.
___ 1 No ___ 2 Yes	75. I use Virginia Standards of Learning test results to monitor the effect of instruction on student performance.
___ 1 No ___ 2 Yes	76. I provide teacher training on collecting assessment data.
___ 1 No ___ 2 Yes	77. I provide teacher training on classroom-based assessment.

*(table continues)*

*Principal's Practices Questionnaire: FORM A (For Principals) (continued)*

Response	Question
<input type="checkbox"/> 1 No <input type="checkbox"/> 2 Yes	78. I provide teacher training on how to apply assessment results to instruction.
<input type="checkbox"/> 1 No <input type="checkbox"/> 2 Yes	79. I provide teachers with information on off-campus opportunities for training on assessment.
<input type="checkbox"/> 1 No <input type="checkbox"/> 2 Yes	80. I provide resources to support teacher training activities on assessment.
<input type="checkbox"/> 1 No <input type="checkbox"/> 2 Yes	81. I ask teachers to align tests with the Virginia Standards of Learning testing format.
<input type="checkbox"/> 1 No <input type="checkbox"/> 2 Yes	82. I ask teachers to align scoring rubrics with the Virginia Standards of Learning.
<input type="checkbox"/> 1 No <input type="checkbox"/> 2 Yes	83. I ask teachers to align tests with the Virginia Standards of Learning on-line practice tests.
<input type="checkbox"/> 1 No <input type="checkbox"/> 2 Yes	84. I ask teachers to align grading practices with the scoring of Virginia Standards of Learning tests.
<input type="checkbox"/> 1 No <input type="checkbox"/> 2 Yes	85. I ask teachers to align school-wide remediation plans with the Virginia Standards of Learning.
<input type="checkbox"/> 1 Male <input type="checkbox"/> 2 Female	86. What is your gender?
<input type="checkbox"/> 1 Bachelor's <input type="checkbox"/> 2 Master's <input type="checkbox"/> 3 Education Specialist <input type="checkbox"/> 4 Certificate of Advanced Graduate Study <input type="checkbox"/> 5 Doctorate	87. What is the highest degree you have earned?
<input type="checkbox"/> 1 Elementary <input type="checkbox"/> 2 Middle <input type="checkbox"/> 3 High <input type="checkbox"/> 4 Other	88. What is your current public school principal assignment?

*(table continues)*

*Principal's Practices Questionnaire: FORM A (For Principals) (continued)*

Response	Question
	89. What number of years of experience do you have as a principal?
	90. How many years have you been a principal in your current assignment?
<input type="checkbox"/> 1 Fully Licensed <input type="checkbox"/> 2 Provisionally Licensed	91. What type of professional certificate do you hold?
<input type="checkbox"/> 1 Urban <input type="checkbox"/> 2 Suburban <input type="checkbox"/> 3 Rural	92. Which of the following describes the school setting in which you are principal?
	93. What is the name of your school?
	94. What is the name of your school division?

Table H2

*Principal's Practices Questionnaire: FORM B (For Teachers)*

Response	Question
___ 1 No ___ 2 Yes	1. My principal works with stakeholders to develop a common mission for the school.
___ 1 No ___ 2 Yes	2. My principal keeps the attention of stakeholders on the achievement mission of the school.
___ 1 No ___ 2 Yes	3. My principal expresses the mission of the school in meetings with stakeholders.
___ 1 No ___ 2 Yes	4. My principal works with stakeholders to formulate initiatives for achieving the mission of the school.
___ 1 No ___ 2 Yes	5. My principal works with stakeholders to keep the focus on the mission of the school.
___ 1 No ___ 2 Yes	6. My principal collaborates with teachers to set measurable student achievement goals for all students.
___ 1 No ___ 2 Yes	7. My principal collaborates with teachers on setting measurable student achievement goals for individuals.
___ 1 No ___ 2 Yes	8. My principal collaborates with teachers on setting measurable student achievement goals that cross grade levels.
___ 1 No ___ 2 Yes	9. My principal collaborates with teachers on setting measurable student achievement goals based on identified needs of individual students.
___ 1 No ___ 2 Yes	10. My principal collaborates with teachers on setting student achievement goals based on measurable objectives.
___ 1 No ___ 2 Yes	11. My principal offers shared decision-making opportunities to the extended school community.
___ 1 No ___ 2 Yes	12. My principal uses team-building strategies to get teachers to work together.
___ 1 No ___ 2 Yes	13. My principal uses shared decision-making to schedule times for instructional teams to collaborate.

*(table continues)*

*Principal's Practices Questionnaire: FORM B (For Teachers) (continued)*

Response	Question
___ 1 No ___ 2 Yes	14. My principal empowers the staff to act on decisions generated through collaboration
___ 1 No ___ 2 Yes	15. My principal hires teachers who fit the collaborative culture of the school.
___ 1 No ___ 2 Yes	16. My principal asks teachers to align their instruction on subject content with the Virginia Standards of Learning.
___ 1 No ___ 2 Yes	17. My principal asks teachers to align subject content with the Virginia Standards of Learning.
___ 1 No ___ 2 Yes	18. My principal asks teachers to discuss with parents the importance of aligning subject content with the Virginia Standards of Learning.
___ 1 No ___ 2 Yes	19. My principal asks teachers to explain the relationship of subject content to student performance on the Virginia Standards of Learning.
___ 1 No ___ 2 Yes	20. My principal asks teachers to discuss with students the importance of aligning subject content with the Virginia Standards of Learning.
___ 1 No ___ 2 Yes	21. My principal reviews teacher lesson plans at least weekly.
___ 1 No ___ 2 Yes	22. My principal reviews teacher grade books each grading period
___ 1 No ___ 2 Yes	23. My principal reviews instructional pacing timelines.
___ 1 No ___ 2 Yes	24. My principal periodically reviews learning checklists kept by teachers.
___ 1 No ___ 2 Yes	25. My principal monitors the use of teacher instructional guides in the classroom.
___ 1 No ___ 2 Yes	26. My principal assists teachers in developing local curriculum guides.
___ 1 No ___ 2 Yes	27. My principal works with teachers to develop curriculum guides designed to meet the Virginia Standards of Learning.

*(table continues)*

*Principal's Practices Questionnaire: FORM B (For Teachers) (continued)*

Response	Question
___ 1 No ___ 2 Yes	28. My principal annually provides teachers with the Virginia Standards of Learning Curriculum Framework for each core area.
___ 1 No ___ 2 Yes	29. My principal provides teachers with the Virginia Standards of Learning Enhanced Scope and Sequence.
___ 1 No ___ 2 Yes	30. My principal provides teachers with sample strategies for teaching to use in building curriculum guides.
___ 1 No ___ 2 Yes	31. My principal talks with students to identify how personal interests affect their learning.
___ 1 No ___ 2 Yes	32. My principal studies the effect of each student's socioeconomic status on his or her learning.
___ 1 No ___ 2 Yes	33. My principal asks students to talk about the effects of standardized teaching on their academic performance.
___ 1 No ___ 2 Yes	34. My principal questions students about factors that influence their learning.
___ 1 No ___ 2 Yes	35. My principal discusses with students how parents influence their learning.
___ 1 No ___ 2 Yes	36. My principal provides tangible rewards to students for improved performance.
___ 1 No ___ 2 Yes	37. My principal recognizes student performance at school board meetings.
___ 1 No ___ 2 Yes	38. My principal asks teachers to display student work in hallways.
___ 1 No ___ 2 Yes	39. My principal praises student accomplishments over the public address system.
___ 1 No ___ 2 Yes	40. My principal exempts students from exams as an incentive for passing Virginia Standards of Learning tests.
___ 1 No ___ 2 Yes	41. My principal protects instructional time from interruptions.

*(table continues)*

*Principal's Practices Questionnaire: FORM B (For Teachers) (continued)*

Response	Question
___ 1 No ___ 2 Yes	42. My principal designs a master schedule that maximizes learning time in core subjects.
___ 1 No ___ 2 Yes	43. My principal instructs teachers to keep transition time between activities brief.
___ 1 No ___ 2 Yes	44. My principal secures additional learning time after school to implement remediation programs.
___ 1 No ___ 2 Yes	45. My principal asks teachers to maximize learning time by designing take-home remediation packets.
___ 1 No ___ 2 Yes	46. My principal uses student achievement data to schedule students into classrooms.
___ 1 No ___ 2 Yes	47. My principal instructs teachers to use student achievement data to meet the individual needs of students.
___ 1 No ___ 2 Yes	48. My principal uses student achievement data to assign students to remedial programs.
___ 1 No ___ 2 Yes	49. My principal uses student achievement data to enhance instruction for advanced learners.
___ 1 No ___ 2 Yes	50. My principal uses student achievement data to evaluate academic progress.
___ 1 No ___ 2 Yes	51. My principal asks teachers to accommodate the needs of special education students.
___ 1 No ___ 2 Yes	52. My principal asks teachers to accommodate the needs of gifted students.
___ 1 No ___ 2 Yes	53. My principal asks teachers to accommodate the needs of at-risk students.
___ 1 No ___ 2 Yes	54. My principal asks teachers to accommodate the learning needs of children from impoverished homes.
___ 1 No ___ 2 Yes	55. My principal asks teachers to accommodate the remediation needs of inclusion students who fail Virginia Standards of Learning tests.

*(table continues)*

*Principal's Practices Questionnaire: FORM B (For Teachers) (continued)*

Response	Question
___ 1 No ___ 2 Yes	56. My principal recruits community volunteers to assist students with their learning.
___ 1 No ___ 2 Yes	57. My principal designs a school-community interaction plan for assisting students with their learning.
___ 1 No ___ 2 Yes	58. My principal asks community agencies to share programs that assist students in their learning.
___ 1 No ___ 2 Yes	59. My principal provides adult volunteers to assist students in their learning.
___ 1 No ___ 2 Yes	60. My principal includes parents in remediation efforts to assist students in their learning.
___ 1 No ___ 2 Yes	61. My principal collaborates with teachers on collecting socioeconomic data to use in evaluating student progress.
___ 1 No ___ 2 Yes	62. My principal collaborates with teachers on collecting psychological data to use in evaluating student progress.
___ 1 No ___ 2 Yes	63. My principal collaborates with teachers on collecting health data to use in evaluating student progress.
___ 1 No ___ 2 Yes	64. My principal collaborates with teachers on collecting intelligence data to use in evaluating student progress.
___ 1 No ___ 2 Yes	65. My principal collaborates with teachers on collecting achievement data to use in evaluating student progress.
___ 1 No ___ 2 Yes	66. My principal assists teachers in analyzing data from multiple testing sources.
___ 1 No ___ 2 Yes	67. My principal analyzes disaggregated student achievement data with the teachers.
___ 1 No ___ 2 Yes	68. My principal asks teachers to analyze student achievement test results using classroom grades.
___ 1 No ___ 2 Yes	69. My principal asks teachers to analyze achievement data across subjects.

*(table continues)*

*Principal's Practices Questionnaire: FORM B (For Teachers) (continued)*

Response	Question
___ 1 No ___ 2 Yes	70. My principal analyzes student achievement test results from feeder schools.
___ 1 No ___ 2 Yes	71. My principal uses student test results to drive instructional goal setting.
___ 1 No ___ 2 Yes	72. My principal uses student test results to monitor instructional benefit.
___ 1 No ___ 2 Yes	73. My principal uses student test results to evaluate the curriculum.
___ 1 No ___ 2 Yes	74. My principal uses student test results to evaluate teacher instructional performance.
___ 1 No ___ 2 Yes	75. My principal uses Virginia Standards of Learning test results to monitor the effect of instruction on student performance.
___ 1 No ___ 2 Yes	76. My principal provides teacher training on collecting assessment data.
___ 1 No ___ 2 Yes	77. My principal provides teacher training on classroom-based assessment.
___ 1 No ___ 2 Yes	78. My principal provides teacher training on how to apply assessment results to instruction.
___ 1 No ___ 2 Yes	79. My principal provides teachers with information on off-campus opportunities for training on assessment.
___ 1 No ___ 2 Yes	80. My principal provides resources to support teacher training activities on assessment.
___ 1 No ___ 2 Yes	81. My principal asks teachers to align tests with the Virginia Standards of Learning testing format.
___ 1 No ___ 2 Yes	82. My principal asks teachers to align scoring rubrics with the Virginia Standards of Learning.
___ 1 No ___ 2 Yes	83. My principal asks teachers to align tests with the Virginia Standards of Learning on-line practice tests.

*(table continues)*

*Principal's Practices Questionnaire: FORM B (For Teachers) (continued)*

Response	Question
___ 1 No ___ 2 Yes	84. My principal asks teachers to align grading practices with the scoring of Virginia Standards of Learning tests.
___ 1 No ___ 2 Yes	85. My principal asks teachers to align school-wide remediation plans with the Virginia Standards of Learning.
___ 1 Male ___ 2 Female	86. What is your gender?
___ 1 Bachelor's ___ 2 Master's ___ 3 Education Specialist ___ 4 Certificate of Advanced Graduate Study ___ 5 Doctorate ___ 6. Other	87. What is the highest degree you have earned?
___ 1 Elementary ___ 2 Middle ___ 3 High ___ 4 Other	88. What is your current public school teaching assignment?
	89. What number of years have you been teaching?
	90. How many years have you been teaching in your current assignment?
___ 1 Fully Licensed ___ 2 Provisionally Licensed ___ Other	91. What type of professional certificate do you hold?
___ 1 No ___ 2 Yes	92. Do you teach a Standards of Learning subject (math, English, social studies, science)?
___ 1 No ___ 2 Yes	93. Do you teach a Standards of Learning subject that requires a culminating end-of-year test?

*(table continues)*

*Principal's Practices Questionnaire: FORM B (For Teachers) (continued)*

Response	Question
<input type="checkbox"/> 1 Urban <input type="checkbox"/> 2 Suburban <input type="checkbox"/> 3 Rural <input type="checkbox"/> Other	92. Which of the following describes the school setting in which you teach?
	93. What is the name of your school?
	94. What is the name of your school division?

APPENDIX I

VIRGINIA POLYTECHNIC INSTITUTE AND STATE  
UNIVERSITY INSTITUTIONAL REVIEW BOARD (IRB) APPROVAL



VirginiaTech

Office of Research Compliance  
Institutional Review Board  
1880 Pratt Drive (0497)  
Blacksburg, Virginia 24061  
540/231-4991 Fax: 540/231-0959  
E-mail: [moored@vt.edu](mailto:moored@vt.edu)  
[www.irb.vt.edu](http://www.irb.vt.edu)

FWA00000572( expires 1/20/2010)  
IRB # IRB00000667

DATE: March 27, 2007 IRB # is IRB00000667

MEMORANDUM

TO: David J. Parks  
Gary Williams

FROM: David M. Moore 

SUBJECT: **IRB Exempt Approval:** "Identifying Principals' Practices that Affect Student Achievement and Accreditation of Public Elementary, Middle, and High Schools in Virginia", IRB # 07-136

I have reviewed your request to the IRB for exemption for the above referenced project. I concur that the research falls within the exempt status. Approval is granted effective as of March 26, 2007.

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.

cc: File

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## APPENDIX J



School of Education  
College of Liberal Arts and Human Sciences  
Blacksburg, VA 24061-0313

### Pre-notice Letter to Conduct Research to Superintendent

Date

Superintendent  
School Division  
Address

Superintendent,

I am a fellow public school educator of 31 years and have served as a teacher, coach, assistant principal, principal, and assistant superintendent. Currently I am a doctoral candidate at Virginia Polytechnic Institute and State University. I am conducting research to gather data for my dissertation, "*Identifying Principals' Practices that Affect Student Achievement and Accreditation of Public Elementary, Middle, and High Schools in Virginia.*" I am requesting permission to conduct research in your school division using only principals and teachers as respondents.

Participants will include each school's principal and five teachers the principal selects according to guidelines provided in the principal's cover letter. Questionnaires are available to respondents online. Procedures and guidelines for accessing the questionnaires by respondents are provided in the information made available to each principal and teacher. Completion time for the questionnaire is 15- 20 minutes.

I ask that you distribute the information provided in this packet to each of your principals. At no time will the identity of individuals, schools, or school divisions be used in my final paper. Upon completion of my dissertation, I will share the results with your school division.

Thank you for your time and effort in considering my request.

Sincerely,

Gary O. Williams  
Doctoral Candidate  
Virginia Tech  
(276) 322-5352  
(304) 320-4484  
gawilli1@vt.edu

David J. Parks  
Professor

## APPENDIX K



School of Education  
College of Liberal Arts and Human Sciences  
Blacksburg, VA 24061-0313

### Pre-notice Letter to Principals

Date

School Division

School

Address

Dear Principal,

I greatly need your help identifying practices used by principals to improve student achievement and accreditation. I am a fellow educator of 31 years and in the past have been a teacher, coach, assistant principal, principal, and assistant superintendent.

In the next few days you will be receiving a 10 X 13 clasp envelope containing (1) an e-mail response from your superintendent's office granting approval for me to conduct research in your school division, (2) a principal's cover letter attached to a "Principal's Questionnaire," (3) seven teacher cover letters attached to seven "Teacher's Questionnaires," and (4) a 9 X 12 postage paid envelope to use in mailing copies of completed questionnaires back to my home address.

***Please use the envelope only if participants can not access the online version of the questionnaire. It is important that you and at least five of your teachers participate. Principal's responses are validated by no less than five teachers' responses. To help me identify my populations, it is important that you and your teachers record the name of your school and school division in items 93 and 94 of both questionnaires.***

I do not expect you or your teachers to encumber any instructional or in-service time to answer the questionnaires. URL addresses are provided and may be accessed during any 24 hour period, seven days per week. Questionnaires contain 85 items addressing Principals' Practices and nine additional descriptive questions. Two responses, "1" for **No** and "2" for **Yes**, will be used to answer each item. Expect to take 15 to 20 minutes to complete the questionnaire.

I hope you decide to participate in what I consider to be a very important study. I will share the results of the study with you upon its completion.

Sincerely,

Gary O. Williams  
Doctoral Student  
P.O. Box 91  
Bluefield, VA 24605  
(H) 276 322-5352  
gawilli1@vt.edu

David J. Parks  
Research Advisor

## APPENDIX L



School of Education  
College of Liberal Arts and Human Sciences  
Blacksburg, VA 24061-0313

### Principal's and Teacher's Questionnaires

Date

Dear Principal:

I am currently the administrative assistant superintendent for Tazewell County Public Schools, Virginia. In the past I was a secondary teacher, assistant principal, and principal. I am interested in identifying effective practices implemented by principals in Virginia's public elementary, middle, and high schools. Principals' awareness of these results should stimulate inquiry into the practices being used to attain high rates of student achievement leading to Full Accreditation.

I am asking for your assistance with this study. Should you choose to participate, please do the following:

#### **Principal's Questionnaire**

1. Go to <https://survey.vt.edu/survey/entry.jsp?id=1168294902873>. Enter the **Password** as **principal**.
2. Carefully read all instructions prior to filling out the online questionnaire.
3. Complete the questionnaire **Principal's Practices: FORM A**.
4. Time of completion is 15 to 20 minutes.

#### **Teacher's Questionnaire**

1. Systematically select teachers to participate in the study by selecting every  $n^{\text{th}}$  teacher until **seven teachers** volunteer to participate. In small schools, this could be everyone.
2. Provide teachers with the enclosed cover letter.
3. E-mail each teacher or have them access, <https://survey.vt.edu/survey/entry.jsp?id=1166022141451> and enter the **Password** as **teacher**.
4. Teachers complete the questionnaire **Principal's Practices: FORM B**.

At no time will your identity be revealed to anyone. Surveys will be numbered for follow-up purposes; however, no names will be associated with any responses in the data set or in the final report. Your consent to participate is given when you submit your completed copy of the survey. If you have questions, please contact me at (276) 988-8303–X223, (276) 322-5352, or [gwilliams@tazewell.k12.va.us](mailto:gwilliams@tazewell.k12.va.us).

Because I am aware of the time constraints of your job, I am extremely grateful to you for helping me with this project.

Sincerely,

Gary O. Williams  
Doctoral Candidate

David J. Parks  
Research Advisor

## APPENDIX M



School of Education  
College of Liberal Arts and Human Sciences  
Blacksburg, VA 24061-0313

### Teacher's Questionnaire

Date

Dear Teacher:

I am currently the administrative assistant superintendent for Tazewell County Public Schools, Virginia. In the past I was a secondary teacher, assistant principal, and principal. I am interested in collecting and identifying practices implemented by principals in Virginia's public elementary, middle, and high schools that affect student achievement on Standards of Learning (SOL) tests.

I am asking for your assistance with this study. Should you choose to participate, please do the following:

1. Go to <https://survey.vt.edu/survey/entry.jsp?id=1166022141451>. Enter the **Password as teacher**.
2. Carefully read all instructions prior to filling out the online questionnaire.
3. Complete **Principal's Practices Questionnaire: FORM B**.
4. Complete the items by marking the appropriate response. Completion time for the questionnaire is 15 to 20 minutes.

At no time will your identity be revealed to anyone. Surveys will be numbered for follow-up purposes; however, no names will be associated with any responses in the data set or in the final report. Your consent to participate is given when you submit your completed copy of the survey. If you have questions, please contact me at (276) 988-8303-x 223, (276) 322-5352, or [gwilliams@tazewell.k12.va.us](mailto:gwilliams@tazewell.k12.va.us).

Because I am aware of the time constraints of your job, I am extremely grateful to you for helping me with this project.

Sincerely,

Gary O. Williams  
Doctoral Candidate

David J. Parks  
Research Advisor

*A Land-Grant University – Putting Knowledge to Work  
An Equal Opportunity/Affirmative Action Institution*

## APPENDIX N

### DATA FOR THE PRINCIPAL COMPONENTS ANALYSES

This appendix contains the data for the three principal components analyses of the Principal's Practices Questionnaires. The three analyses were (a) an analysis of the data from responding principals on Form A of the Principal's Practices Questionnaire, (b) an analysis of the data from responding teachers on Form B of the Principal's Practices Questionnaire, regardless of school affiliation; and (c) an analysis of the data from responding teachers on Form B of the Principal's Practices Questionnaire aggregated at the school level. All three analyses were conducted to find a meaningful classification of the sub-domains of the Principal's Practices Questionnaire based on the correlations among those sub-domains. All of the data are being provided here so that the reader can make his or her own judgments about the classification of the sub-domains. The classification used in the analyses was that derived from Form B when the data were aggregated at the school level. This analysis seemed to produce meaningful categories that could be used to make sense of the data.

Tables N1 through N5 contain the data for the principal components analysis run with the data from responding principals on Form A of the Principal's Practices Questionnaire, Tables N6 through N10 contain the data for the principal components analysis run with the data from responding teachers on Form B of the Principal's Practices Questionnaire. These data were not aggregated by school. Tables N11 through N15 contain the data for the principal components analysis run with the aggregated data from responding teachers on Form B of the Principal's Practices Questionnaire. These data were aggregated by school. The interpretation of the data is in the body of the paper.

Table N1

*Descriptive Statistics for the Sub-domains in the Principal Components Analysis of Data for Responding Principals on Form A of the Principal's Practices Questionnaire*

Sub-domain	<i>N</i>	<i>Missing N</i>	<i>M</i>	<i>SD</i>
1. Creates a mission.	142	0	4.824	.450
2. Sets goals.	142	0	4.535	.864
3. Builds culture of collaboration.	142	0	4.606	.673
4. Connects content to standards.	142	0	4.310	.954
5. Reviews documents.	142	0	3.261	1.189
6. Uses guides.	142	0	3.754	1.327
7. Knows student conditions.	142	0	3.324	1.471
8. Recognizes student accomplishments.	142	0	3.627	.965
9. Provides additional learning time.	142	0	4.352	.746
10. Uses achievement data.	142	0	4.739	.528
11. Varies instruction.	142	0	4.810	.490
12. Involves community.	142	0	2.965	1.604
13. Collects data.	142	0	3.099	1.626
14. Analyzes data.	142	0	4.134	.998
15. Uses data.	142	0	4.676	.710
16. Trains staff.	142	0	4.176	1.144
17. Monitors student progress.	142	0	4.465	.822

Table N2

*Correlation Matrix for the Sub-domains in the Principal Components Analysis of Data for Responding Principals on Form A of the Principal's Practices Questionnaire*

Sub-domain	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	.171*	.097	.111	.073	.129	.055	.027	.144*	-.194**	.072	.109	.005	.147*	-.091	-.008	.088
2		.146*	.331**	.298**	.239**	.058	.020	.124	-.019	-.026	.223**	.295**	.204**	.250**	.241**	.107
3			.158*	.200**	.192**	.037	-.010	.236**	.208**	.072	.184**	.224**	.090	.013	.275**	.295**
4				.428**	.178*	.347**	.150*	.224**	.189**	.233**	.216**	.410**	.150*	.254**	.190**	.339**
5					.270**	.377**	.116	.304**	.222**	.086	.287**	.335**	.269**	.008	.211**	.274**
6						.154*	.166*	.232**	.181*	.255**	.269**	.426**	.282**	.140*	.304**	.164*
7							.271**	.180*	.155*	.165*	.257**	.420**	.250**	.169*	.126	.215**
8								.076	.072	.149*	.156*	.146*	.089	.133	.034	.140*
9									.163*	.126	.295**	.153*	.060	-.064	.118	.136*
10										-.001	.240**	.187**	.161*	.246**	.299**	.199**
11											.199**	.273**	-.006	.209**	.136*	.027
12												.349**	.269**	-.029	.243**	.185**
13													.302**	.286**	.303**	.231**
14														.202**	.333**	.114
15															.245**	.017
16																.086
17																

*Note.* Sub-domain names: (1) Creates a mission, (2) Sets goals, (3) Builds culture of collaboration, (4) Connects content to standards, (5) Reviews documents, (6) Uses guides, (7) Knows student conditions, (8) Recognizes student accomplishments, (9) Provides additional learning time, (10) Uses achievement data, (11) Varies instruction, (12) Involves community, (13) Collects data, (14) Analyzes data, (15) Uses data, (16) Trains staff, (17) Monitors student progress.

\*  $p < .05$ . \*\*  $p < .01$ .

Table N3

*Communalities for Sub-domains in the Principal Components Analysis of Data for Responding Principals on Form A of the Principal's Practices Questionnaire*

Sub-domain <sup>a</sup>	Initial	Extraction
1	1.000	.601
2	1.000	.676
3	1.000	.604
4	1.000	.691
5	1.000	.559
6	1.000	.524
7	1.000	.641
8	1.000	.443
9	1.000	.484
10	1.000	.682
11	1.000	.785
12	1.000	.521
13	1.000	.558
14	1.000	.687
15	1.000	.721
16	1.000	.599
17	1.000	.524

*Note.* Extraction Method: Principal Component Analysis. <sup>a</sup>Sub-domain names: (1) Creates a mission, (2) Sets goals, (3) Builds culture of collaboration, (4) Connects content to standards, (5) Reviews documents, (6) Uses guides, (7) Knows student conditions, (8) Recognizes student accomplishments, (9) Provides additional learning time, (10) Uses achievement data, (11) Varies instruction, (12) Involves community, (13) Collects data, (14) Analyzes data, (15) Uses data, (16) Trains staff, (17) Monitors student progress.

Table N4

*Eigenvalues and Variances for Components Extracted from the Analysis of Data for Responding Principals on Form A of the Principal's Practices Questionnaire*

Component	Initial eigenvalues			Extraction sums of squared loadings			Rotation sums of squared loadings		
	<i>Total</i>	<i>% of Variance</i>	<i>Cumulative %</i>	<i>Total</i>	<i>% of Variance</i>	<i>Cumulative %</i>	<i>Total</i>	<i>% of Variance</i>	<i>Cumulative %</i>
1	4.037	23.749	23.749	4.037	23.749	23.749	2.441	14.357	14.357
2	1.471	8.653	32.403	1.471	8.653	32.403	2.302	13.539	27.896
3	1.329	7.816	40.218	1.329	7.816	40.218	1.492	8.775	36.671
4	1.278	7.517	47.735	1.278	7.517	47.735	1.448	8.520	45.191
5	1.132	6.657	54.392	1.132	6.657	54.392	1.340	7.883	53.074
6	1.052	6.191	60.583	1.052	6.191	60.583	1.277	7.509	60.583
7	.917	5.392	65.975						
8	.815	4.797	70.772						
9	.772	4.542	75.314						
10	.706	4.151	79.465						
11	.669	3.938	83.404						
12	.624	3.670	87.074						
13	.536	3.154	90.228						
14	.525	3.089	93.316						
15	.455	2.675	95.992						
16	.362	2.127	98.119						
17	.320	1.881	100.000						

Note. Extraction Method: Principal Components Analysis. Sub-domain names are in Table N1.

Table N5

*Rotated Components Matrix for Sub-domains in the Principal Components Analysis of Data for Responding Principals on Form A of the Principal's Practices Questionnaire*

Sub-domain	Component					
	1	2	3	4	5	6
1	.161	.116	-.015	-.143	.733	.063
2	.330	.341	-.156	.471	.432	-.131
3	.287	.519	-.425	-.122	-.115	.207
4	.047	.678	.229	.377	.106	.154
5	.316	.604	.268	-.013	.074	-.129
6	.615	.108	.065	.038	.098	.344
7	.177	.335	.700	.078	-.038	.008
8	.060	.051	.629	-.012	-.044	.196
9	.277	.421	.015	-.397	.074	.258
10	.357	.290	.020	.022	-.684	-.033
11	.100	.006	.184	.123	.059	.850
12	.569	.238	.233	-.259	.029	.136
13	.445	.341	.273	.327	-.002	.250
14	.698	-.013	.253	.155	.096	-.319
15	.163	.007	.092	.782	-.198	.187
16	.676	.093	-.172	.239	-.200	.081
17	-.011	.713	.083	-.033	-.083	-.026

*Note.* Extraction Method: Principal Components Analysis. Rotation Method: Varimax with Kaiser Normalization. Rotation converged in 17 iterations. Sub-domain names are in Table N1.

Table N6

*Data for the Principal Components Analysis of Sub-domains for Responding Teachers on Form B of the Principal's Practices Questionnaire: Data Not Aggregated by School*

Sub-domain	<i>N</i>	<i>Missing N</i>	<i>M</i>	<i>SD</i>
1. Creates a mission.	556	0	4.640	1.028
2. Sets goals.	556	0	4.333	1.393
3. Builds culture of collaboration.	556	0	4.142	1.311
4. Connects content to standards.	556	0	4.432	.930
5. Reviews documents.	556	0	3.072	1.571
6. Uses guides.	556	0	3.624	1.637
7. Knows student conditions.	556	0	3.502	1.653
8. Recognizes student accomplishments.	556	0	3.640	1.134
9. Provides additional learning time.	556	0	3.928	1.043
10. Uses achievement data.	556	0	4.268	1.096
11. Varies instruction.	556	0	4.570	.889
12. Involves community.	556	0	2.746	1.426
13. Collects data.	556	0	3.326	1.819
14. Analyzes data.	556	0	3.775	1.305
15. Uses data.	556	0	4.381	1.043
16. Trains staff.	556	0	3.887	1.580
17. Monitors student progress.	556	0	4.066	1.216

Table N7

*Correlation Matrix for the Sub-domains in the Principal Components Analysis of Data for Responding Teachers on Form B of the Principal's Practices Questionnaire: Data Not Aggregated by School*

Sub-domain	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	.536**	.462**	.293**	.296**	.332**	.362**	.272**	.342**	.310**	.345**	.304**	.283**	.320**	.201**	.347**	.189**
2		.541**	.364**	.400**	.436**	.453**	.313**	.469**	.415**	.429**	.344**	.418**	.455**	.362**	.469**	.246**
3			.357**	.390**	.436**	.466**	.360**	.428**	.370**	.413**	.425**	.417**	.448**	.310**	.504**	.253**
4				.383**	.396**	.404**	.316**	.417**	.333**	.386**	.331**	.416**	.418**	.328**	.367**	.315**
5					.527**	.427**	.357**	.453**	.377**	.292**	.395**	.438**	.461**	.297**	.429**	.347**
6						.475**	.401**	.478**	.434**	.367**	.411**	.464**	.503**	.286**	.567**	.327**
7							.469**	.476**	.407**	.460**	.462**	.508**	.441**	.319**	.440**	.285**
8								.435**	.328**	.234**	.383**	.383**	.401**	.253**	.363**	.255**
9									.449**	.437**	.487**	.476**	.445**	.340**	.471**	.318**
10										.424**	.417**	.493**	.444**	.402**	.370**	.291**
11											.364**	.427**	.434**	.311**	.363**	.280**
12												.498**	.458**	.276**	.432**	.281**
13													.559**	.375**	.451**	.324**
14														.390**	.469**	.414**
15															.368**	.379**
16																.401**
17																

*Note.* Sub-domain names: (1) Creates a mission, (2) Sets goals, (3) Builds culture of collaboration, (4) Connects content to standards, (5) Reviews documents, (6) Uses guides, (7) Knows student conditions, (8) Recognizes student accomplishments, (9) Provides additional learning time, (10) Uses achievement data, (11) Varies instruction, (12) Involves community, (13) Collects data, (14) Analyzes data, (15) Uses data, (16) Trains staff, (17) Monitors student progress.

\*  $p < .05$ . \*\*  $p < .01$ .

Table N8

*Communalities for Sub-domains in the Principal Components Analysis of Data for Responding Teachers on Form B of the Principal's Practices Questionnaire: Data Not Aggregated by School*

Sub-domain <sup>a</sup>	Initial	Extraction
1	1.000	.645
2	1.000	.631
3	1.000	.589
4	1.000	.382
5	1.000	.448
6	1.000	.511
7	1.000	.516
8	1.000	.344
9	1.000	.517
10	1.000	.436
11	1.000	.409
12	1.000	.435
13	1.000	.545
14	1.000	.563
15	1.000	.407
16	1.000	.502
17	1.000	.505

*Note.* Extraction Method: Principal Components Analysis. <sup>a</sup>Sub-domain names: (1) Creates a mission, (2) Sets goals, (3) Builds culture of collaboration, (4) Connects content to standards, (5) Reviews documents, (6) Uses guides, (7) Knows student conditions, (8) Recognizes student accomplishments, (9) Provides additional learning time, (10) Uses achievement data, (11) Varies instruction, (12) Involves community, (13) Collects data, (14) Analyzes data, (15) Uses data, (16) Trains staff, (17) Monitors student progress.

Table N9

*Eigenvalues and Variances for Components Extracted from the Analysis of Data for Responding Teachers on Form B of the Principal's Practices Questionnaire*

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	7.308	42.986	42.986	7.308	42.986	42.986	4.642	27.307	27.307
2	1.079	6.349	49.334	1.079	6.349	49.334	3.745	22.027	49.334
3	.926	5.449	54.783						
4	.833	4.899	59.682						
5	.708	4.165	63.847						
6	.697	4.099	67.946						
7	.652	3.834	71.780						
8	.598	3.517	75.297						
9	.580	3.413	78.709						
10	.570	3.354	82.063						
11	.527	3.100	85.163						
12	.497	2.921	88.084						
13	.470	2.762	90.846						
14	.443	2.608	93.454						
15	.397	2.333	95.786						
16	.371	2.184	97.970						
17	.345	2.030	100.000						

Note. Extraction Method: Principal Components Analysis. Sub-domain names are in Table N6.

Table N10

*Rotated Components Matrix for Sub-domains in the Principal Components Analysis of Data for Responding Teachers on Form B of the Principal's Practices Questionnaire: Data Not Aggregated by School*

Sub-domain	Component	
	1	2
1	.033	
2	.267	
3	.295	
4	.527	
5	.581	
6	.566	
7	.480	
8	.476	
9	.542	
10	.552	
11	.389	
12	.524	
13	.649	
14	.663	
15	.629	
16	.553	
17	.710	

*Note.* Extraction Method: Principal Components Analysis. Rotation Method: Varimax with Kaiser Normalization. Rotation converged in 3 iterations. Sub-domain names are in Table N6.

Table N11

*Data for the Principal Components Analysis of Sub-domains for Responding Teachers on Form B of the Principal's Practices Questionnaire: Data Aggregated by School*

Sub-domain	<i>N</i>	<i>Missing N</i>	<i>M</i>	<i>SD</i>
1. Creates a mission.	139	0	4.631	.688
2. Sets goals.	139	0	4.312	.983
3. Builds culture of collaboration.	139	0	4.098	.981
4. Connects content to standards.	139	0	4.345	.740
5. Reviews documents.	139	0	3.001	1.233
6. Uses guides.	139	0	3.495	1.316
7. Knows student conditions.	139	0	3.379	1.268
8. Recognizes student accomplishments.	139	0	3.530	.945
9. Provides additional learning time.	139	0	3.889	.743
10. Uses achievement data.	139	0	4.190	.774
11. Varies instruction.	139	0	4.509	.783
12. Involves community.	139	0	2.678	1.044
13. Collects data.	139	0	3.261	1.340
14. Analyzes data.	139	0	3.755	.971
15. Uses data.	139	0	4.367	.675
16. Trains staff.	139	0	3.683	1.306
17. Monitors student progress.	139	0	3.988	.955

Table N12

*Correlation Matrix for the Sub-domains in the Principal Components Analysis of Data for Responding Teachers on Form B of the Principal's Practices Questionnaire: Data Aggregated by School*

Sub-domain	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	.58 1**	.52 6**	.43 1**	.39 0**	.32 0**	.47 0**	.29 9**	.33 8**	.24 8**	.25 6**	.32 4**	.25 4**	.43 7**	.19 3*	.38 9**	.03 8
2		.54 3**	.55 9**	.55 3**	.50 5**	.54 2**	.30 6**	.56 8**	.48 4**	.48 3**	.29 1**	.36 4**	.48 7**	.41 5**	.52 2**	.28 1**
3			.59 8**	.52 9**	.45 8**	.53 3**	.36 4**	.50 2**	.45 2**	.36 7**	.49 3**	.47 8**	.57 7**	.42 3**	.51 7**	.16 3*
4				.61 4**	.43 1**	.58 5**	.43 1**	.61 4**	.42 1**	.46 6**	.45 8**	.44 4**	.53 9**	.32 4**	.46 8**	.25 9**
5					.61 1**	.50 5**	.44 9**	.60 0**	.42 4**	.36 6**	.40 4**	.45 9**	.56 7**	.43 0**	.54 0**	.44 3**
6						.55 2**	.46 8**	.53 5**	.37 5**	.40 0**	.44 7**	.38 7**	.60 1**	.37 2**	.66 3**	.46 4**
7							.60 1**	.53 0**	.34 0**	.48 8**	.47 3**	.56 4**	.49 2**	.28 2**	.56 6**	.34 1**
8								.48 3**	.24 3**	.25 4**	.40 0**	.42 0**	.38 7**	.12 8**	.37 2**	.27 2**
9									.55 5**	.52 5**	.50 4**	.57 2**	.56 7**	.35 3**	.58 3**	.34 6**
10										.52 5**	.37 6**	.48 6**	.50 9**	.38 8**	.39 9**	.21 3**
11											.36 9**	.52 9**	.57 2**	.24 2**	.39 9**	.31 7**
12												.54 5**	.54 0**	.29 2**	.45 9**	.23 2**
13													.62 1**	.36 4**	.42 3**	.35 5**
14														.43 2**	.49 0**	.40 2**
15															.42 1**	.45 7**
16																.45 2**
17																

*Note.* Sub-domain names: (1) Creates a mission, (2) Sets goals, (3) Builds culture of collaboration, (4) Connects content to standards, (5) Reviews documents, (6) Uses guides, (7) Knows student conditions, (8) Recognizes student accomplishments, (9) Provides additional learning time, (10) Uses achievement data, (11) Varies instruction, (12) Involves community, (13) Collects data, (14) Analyzes data, (15) Uses data, (16) Trains staff, (17) Monitors student progress.

\*  $p < .05$ . \*\*  $p < .01$ .

Table N13

*Communalities for Sub-domains in the Principal Components Analysis of Data for Responding Teachers on Form B of the Principal's Practices Questionnaire: Data Aggregated by School*

Sub-domain <sup>a</sup>	Initial	Extraction
1	1.000	.750
2	1.000	.731
3	1.000	.660
4	1.000	.612
5	1.000	.648
6	1.000	.682
7	1.000	.708
8	1.000	.745
9	1.000	.652
10	1.000	.684
11	1.000	.626
12	1.000	.544
13	1.000	.716
14	1.000	.665
15	1.000	.681
16	1.000	.642
17	1.000	.779

*Note:* Extraction Method: Principal Components Analysis. <sup>a</sup>Sub-domain names: (1) Creates a mission, (2) Sets goals, (3) Builds culture of collaboration, (4) Connects content to standards, (5) Reviews documents, (6) Uses guides, (7) Knows student conditions, (8) Recognizes student accomplishments, (9) Provides additional learning time, (10) Uses achievement data, (11) Varies instruction, (12) Involves community, (13) Collects data, (14) Analyzes data, (15) Uses data, (16) Trains staff, (17) Monitors student progress.

Table N14

*Eigenvalues and Variances for Components Extracted from the Analysis of Data for Responding Teachers on Form B of the Principal's Practices Questionnaire: Data Aggregated by School*

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	8.120	47.762	47.762	8.120	47.762	47.762	3.382	19.892	19.892
2	1.276	7.503	55.266	1.276	7.503	55.266	3.028	17.811	37.703
3	1.076	6.332	61.597	1.076	6.332	61.597	2.615	15.385	53.087
4	1.051	6.185	67.782	1.051	6.185	67.782	2.498	14.695	67.782
5	.783	4.604	72.386						
6	.644	3.786	76.172						
7	.610	3.587	79.758						
8	.529	3.112	82.870						
9	.502	2.953	85.823						
10	.425	2.499	88.322						
11	.384	2.258	90.580						
12	.342	2.010	92.591						
13	.325	1.913	94.504						
14	.281	1.654	96.158						
15	.264	1.555	97.712						
16	.212	1.245	98.958						
17	.177	1.042	100.000						

Note: Extraction Method: Principal Components Analysis. Sub-domain names are in Table N11.

Table N15

*Rotated Components Matrix for Sub-domains in the Principal Components Analysis of Data for Responding Teachers on Form B of the Principal's Practices Questionnaire: Data Aggregated by School*

Sub-domain	Component			
	1	2	3	
1	.075	.837	-.030	
2	.297	.727	.328	
3	.392	.657	.163	
4	.407	.538	.172	
5	.260	.441	.513	
6	.196	.305	.578	
7	.301	.405	.208	
8	.139	.164	.113	
9	.559	.328	.298	
10	.750	.277	.201	
11	.743	.166	.157	
12	.523	.179	.102	
13	.724	.067	.190	
14	.605	.327	.341	
15	.295	.266	.702	
16	.227	.396	.552	
17	.153	-.128	.827	

*Note.* Extraction Method: Principal Components Analysis. Rotation Method: Method: Varimax with Kaiser Normalization. Rotation converged in 7 iterations. Sub-domain names are in Table N11.

APPENDIX O

DATA TABLES FOR THE CHI-SQUARE TESTS FOR RELATIONSHIPS BETWEEN ACCREDITATION STATUS AND PRINCIPAL, TEACHER, AND SCHOOL VARIABLES

Table O1

*Data for the Chi-Square Test of Independence Between Accreditation Status and Gender of the Principal*

			Accreditation Status Recorded <sup>a</sup>		Total
			Accredited with Warning	Fully Accredited	
Gender Principal	Male	Count	15	45	60
		Expected Count	14.0	46.0	60.0
		% within Gender Principal	25.0%	75.0%	100.0%
		% within Accreditation Status	48.4%	44.1%	45.1%
	% of Total	11.3%	33.8%	45.1%	
	Female	Count	16	57	73
Expected Count		17.0	56.0	73.0	
% within Gender Principal		21.9%	78.1%	100.0%	
% within Accreditation Status		51.6%	55.9%	54.9%	
% of Total	12.0%	42.9%	54.9%		
Total		Count	31	102	133
		Expected Count	31.0	102.0	133.0
		% within Gender Principal	23.3%	76.7%	100.0%
		% within Accreditation Status	100.0%	100.0%	100.0%
		% of Total	23.3%	76.7%	100.0%

Note.  $\chi^2$  (1 df)=.175; Cramer's V=.036. <sup>a</sup>Accreditation status recoded – 0= “Accredited with Warning” and 1= “Fully Accredited.”

Table O2

*Data for the Chi-Square Test of Independence Between Accreditation Status and the Principal's Highest Degree*

			Accreditation Status Recorded <sup>b</sup>		Total
			Accredited with Warning	Fully Accredited	
Principal's Highest Degree <sup>a</sup>	Master's or less	Count	18	72	90
		Expected Count	21.0	69.0	90.0
		% within Principal Degree	20.0%	80.0%	100.0%
		% within Accreditation Status	58.1%	70.6%	67.7%
		% of Total	13.5%	54.1%	67.7%
	More than master's	Count	13	30	43
		Expected Count	10.0	33.0	43.0
		% within Principal Degree	30.2%	69.8%	100.0%
		% within Accreditation Status	41.9%	29.4%	32.3%
		% of Total	9.8%	22.6%	32.3%
Total		Count	31	102	133
		Expected Count	31.0	102.0	133.0
		% within Principal Degree	23.3%	76.7%	100.0%
		% within Accreditation Status	23.3%	76.7%	100.0%
		% of Total			

*Note.*  $\chi^2$  (1 df)=1.70; Cramer's V=.113. <sup>a</sup>Principal's highest degree recorded – 0= “master's or less” and 1= “more than a master's.” <sup>b</sup>Accreditation status recorded – 0= “Accredited with Warning” and 1= “Fully Accredited.”

Table O3

*Data for the Chi-Square Test of Independence Between Accreditation Status and School Level Assignment*

			Accreditation Status Recoded <sup>a</sup>		Total
			Accredited with Warning	Fully Accredited	
School Level Assignment	Elementary	Count	11	61	72
		Expected Count	16.8	55.2	72.0
		% within School Level	15.3%	84.7%	100.0%
		% within Accreditation Status	35.5%	59.8%	54.1%
	% of Total	8.3%	45.9%	54.1%	
	Middle	Count	15	18	33
		Expected Count	7.7	25.3	33.0
		% within School Level	45.5%	54.5%	100.0%
		% within Accreditation Status	48.4%	17.6%	24.8%
% of Total	11.3%	13.5%	24.8%		
High	Count	5	23	28	
	Expected Count	6.5	21.5	28.0	
	% within School Level	17.9%	82.1%	100.0%	
	% within Accreditation Status	16.1%	22.5%	21.1%	
% of Total	3.8%	17.3%	21.1%		
Total		Count	31	102	133
		Expected Count	31.0	102.0	133.0
		% within School Level	23.3%	76.7%	100.0%
		% within Accreditation Status	100.0%	100.0%	100.0%
		% of Total	23.3%	76.7%	100.0%

Note.  $\chi^2$  (2 df)=12.12; Cramer's V=.302. <sup>a</sup>Accreditation status recoded – 0= “Accredited with Warning” and 1= “Fully Accredited.”

Table O4

*Data for the Chi-Square Test of Independence Between Accreditation Status and Principal's Setting*

		Accreditation Status Recoded <sup>a</sup>		Total		
		Accredited with Warning	Fully Accredited			
Setting Principal	Urban	Count	11	17	28	
		Expected Count	6.5	21.5	28.0	
		% within Setting Principal	39.3%	60.7%	100.0%	
		Principal	% within Accreditation Status	35.5%	16.7%	21.1%
			% of Total	8.3%	12.8%	21.1%
	Suburban	Count	0	10	10	
		Expected Count	2.3	7.7	10.0	
		% within Setting Principal	.0%	100.0%	100.0%	
	Principal	% within Accreditation Status	.0%	9.8%	7.5%	
		% of Total	.0%	7.5%	7.5%	
Rural	Count	20	75	95		
	Expected Count	22.1	72.9	95.0		
	% within Setting Principal	21.1%	78.9%	100.0%		
	Principal	% within Accreditation Status	64.5%	73.5%	71.4%	
		% of Total	15.0%	56.4%	71.4%	
Total		Count	31	102	133	
		Expected Count	31.0	102.0	133.0	
		% within Setting Principal	23.3%	76.7%	100.0%	
		% within Accreditation Status Recoded	100.0%	100.0%	100.0%	
		% of Total	23.3%	76.7%	100.0%	

Note.  $\chi^2$  (2 df)= 7.31; Cramer's V=.234. <sup>a</sup>Accreditation status recoded – 0= “accredited with warning” and 1= “fully accredited.”

Table O5

*Data for the Chi-Square Test of Independence Between Accreditation Status and Principal's Professional Certificate*

			Accreditation Status Recoded <sup>a</sup>		Total
			Accredited with Warning	Fully Accredited	
Professional Certificate Principal	Fully Licensed	Count	31	98	129
		Expected Count	30.1	98.9	129.0
		% within Professional Certificate	24.0%	76.0%	100.0%
		% within Accreditation	100.0%	96.1%	97.0%
		% of Total	23.3%	73.7%	97.0%
	Provisionally Licensed	Count	0	4	4
		Expected Count	.9	3.1	4.0
		% within Professional Certificate	.0%	100.0%	100.0%
		% within Accreditation	.0%	3.9%	3.0%
		% of Total	.0%	3.0%	3.0%
Total		Count	31	102	133
		Expected Count	31.0	102.0	133.0
		% within Professional Certificate	23.3%	76.7%	100.0%
		% within Accreditation	100.0%	100.0%	100.0%
		% of Total	23.3%	76.7%	100.0%

Note.  $\chi^2$  (1 df)= 1.25; Cramer's V=.097. <sup>a</sup>Accreditation status recoded – 0= “accredited with warning” and 1= “fully accredited.”

APPENDIX P  
 POOLED WITHIN-GROUPS CORRELATION MATRICES FOR THE PREDICTOR  
 VARIABLES

Correlation	2	3	4	5	6	7	8	9	10	11	12	13
1	.10	-.02	.11	-.10	-.16	.36	.05	.11	-.04	.02	.05	.03
2		.54	-.13	.12	-.12	.08	-.11	.02	-.06	.03	.02	.06
3			-.07	.05	-.06	-.06	-.14	.08	-.16	-.06	-.03	-.11
4				-.04	-.10	.13	.11	-.08	-.01	-.04	.16	-.01
5					.05	-.01	.18	-.23	-.15	-.13	-.10	-.07
6						-.60	.12	-.16	.04	.08	-.00	.01
7							-.04	.07	-.03	-.15	-.03	-.10
8								-.82	.15	.12	.18	.09
9									-.18	-.15	-.20	-.14
10										.61	.64	.67
11											.64	.66
12												.64

*Note.* Predictor variables: (1) School's Free and Reduced Price Lunches, (2) Years Principal Experience, (3) Years Current Assignment Principal, (4) Principals Gender Recoded, (5) Principal's Highest Degree Recoded 2, (6) Principal's Assignment Middle, (7) Principal's Assignment Elementary v Other, (8) School Setting Urban v Other, (10) Principal Setting Rural v Other (11) PC1, (12) PC2, (13) PC3, (14) PC4.