USING COGNITIVE TASK ANALYSIS TO CAPTURE HOW EXPERT PRINCIPALS CONDUCT INFORMAL CLASSROOM WALK-THROUGHS AND PROVIDE FEEDBACK TO TEACHERS

By

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Dedication

This dissertation is dedicated to my best friend and biggest supporter, my wife Wendy; and to my two biggest cheerleaders, Victoria and Brenden. Without your support and insistence that I not only complete this dissertation but also live to tell about it, I never would have completed this journey. I am extremely grateful for your sacrifice and understanding, and now I look forward to being a regular part of the family again.

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List of Abbreviations

CCSS:	Common Core State Standards
CDM:	Critical Decision Method
CPP:	Concepts, Processes, and Principles
CTA:	Cognitive Task Analysis
GSP:	Gold Standard Protocol
IRB:	Institutional Review Board
K – 12:	Kindergarten through Twelfth Grade
MDL:	Model of Domain Learning
NAEP:	National Assessment of Educational Progress
NCLB:	No Child Left Behind Act
NICU:	Neo-Natal Intensive Care Unit
OECD:	Organisation for Economic Co-operation and Development
PARI:	Precursors, Action, Result, and Interpretation
PGSP:	Preliminary Gold Standard Protocol
SAM:	School Administration Manager
SBA:	Smarter Balanced Assessments
SES:	Socio-economic Status
SME:	Subject Matter Expert
3i + 3r:	Three Independent Interviews + Three Reviews

Abstract

Informal classroom walk-throughs conducted by school principals with feedback provided to teachers has been demonstrated to improve learning achievement in kindergarten through twelfth grade (K-12) education. Principals are often trained by experts to conduct these walk-throughs. Unfortunately, research shows that experts may omit up to 70% of the critical information needed by trainees to replicate their expertise. The purpose of this study was to capture the knowledge and skills expert K-12 principals use when they conduct informal classroom walk-throughs and provide feedback to teachers. Cognitive Task Analysis (CTA) semi-structured interviews were conducted with three principals who were qualified as experts using both qualitative and quantitative measures. Action and decision steps, as well as standards, equipment, and conceptual knowledge from individual subject matter experts (SMEs) were captured and aggregated into a gold standard protocol which was reviewed by a fourth expert. The study also sought to identify and quantify the number and percentage of expert knowledge and skills omissions when the principals described how they conducted classroom walk-throughs and provided feedback to teachers. Findings indicate that expert principals omitted an average of 54.76% of the action and decision steps when compared to the gold standard protocol. This study extends the potential negative effects of relying on experts for instruction and curriculum development. The expert knowledge and skills captured by CTA methods may be used to train pre-service and in-service principals in performing the complex instructional leadership task of informal walk-throughs and providing feedback to teachers, which may ultimately improve teachers' classroom instruction and student achievement.

CHAPTER ONE: OVERVIEW OF THE STUDY

Statement of the Problem

The adoption and implementation of No Child Left Behind (NCLB) in addition to the Common Core State Standards (CCSS) and the aligned Smarter Balanced Assessments (SBA) have brought a new level of accountability for student achievement to schools and school districts across the country (California Department of Education [CDE], 2010; Davidson, Reback, Rockoff, & Schwartz, 2013; Dee & Jacob, 2011; Elmore, 2002; Fuhrman & Elmore, 2004; Kim & Sunderman, 2005; McDonnell & Weatherford, 2013; Phillips & Wong, 2010). NCLB was signed into law by President George Bush on January 1, 2002 and launched a new era of Federal educational accountability through high stakes testing. The results of the testing were made public, all students were required to score proficient on the testing by 2014, and sanctions were placed upon schools and districts that did not meet the predetermined achievement thresholds (Davidson et al., 2013; Dee & Jacob, 2011; Kim & Sunderman, 2005).

Since 2007, NCLB has been due for reauthorization, but has not received sufficient bi-partisan support from the Congress. In an attempt to rectify some of the shortcomings of NCLB, the Council of Chief State School Officers and the National Governors' Association Center for Best Practices with representatives from 48 states, two territories, and the District of Colombia; voluntarily created the CCSS to provide national academic standards for all students in grades kindergarten through 12 to ensure that all students regardless of where they live within the United States would be held to the same academic standards with the goal of being college and career ready (CDE, 2010; McDonnell & Weatherford, 2013; Phillips & Wong, 2010). To assess and monitor student achievement toward mastering the CCSS, the Smarter Balanced Assessment

(SBA) Consortium has designed a national assessment which schools and districts will begin to take in the 2014-2015 school year (CDE, 2010).

As a result, school principals and teachers are under increasing pressure to foster and maintain high quality classroom instruction. The pressure to meet accountability measures rests primarily upon each classroom teacher who has the single greatest impact upon the individual student, the quality of the instruction provided, and the classroom environment; even greater than the school that the child attends (Nye, Konstantopoulos, & Hedges, 2004; Rivkin, Hanushek, & Kain, 2005). In a study conducted by Murnane and Papay (2010), a majority of teachers reported that they were in support of the goals of NCLB but also reported much higher levels of pressure put upon them, especially when working in schools with greater numbers of disadvantaged students. A majority of teachers in the Murnane and Papay study reported this higher level of pressure due to NCLB had led to: (a) score inflation due to a focus on test preparation; (b) increased concentration on students that were just short of the proficiency level on tests at the exclusion of other students; (c) narrowing of the curriculum to tested areas; and (d) incentives and sanctions that did not adequately represent a school's achievement. As of the NCLB testing in 2014, if just one student failed to reach proficient status the entire school was determined to be failing and the pressure to ensure that all students score proficient is most often placed directly onto the school's principal. NCLB requires that one of the sanctions placed upon a school for not reaching the achievement targets for two consecutive years is removal and replacement of the principal (Davidson et al., 2013).

The ultimate responsibility at the school level to achieve consistent high quality instruction lies with the principal who must serve as the instructional leader of the school. Instructional leadership has been identified over the past two decades as the most

important skill for site principals to have (Marzano, Waters, & McNulty, 2005). Marzano et al. conducted a meta-analysis to look at the last 35 years of research on principal leadership and determined that increased skillful principal leadership, especially in the area of instruction, is positively correlated to a school's improvement. A school principal sets the climate for a school and determines the extent to which a school is focused upon student learning through effective classroom instruction (DuFour & Mattos, 2013).

The school principal must use multiple methods to evaluate instructional quality. The most popular method of evaluation, which is often a legal or contractual requirement, is the formal process of clinical supervision. Clinical supervision is a summative process meant to evaluate or judge a teacher's performance. In contrast, Range, Young, and Hvidston (2013) reported informal formative instructional evaluation methods focusing upon constructive principal feedback such as informal observations, also known as walk-throughs, and providing feedback to teachers, enable teachers to plan and reflect on instruction.

When conducted correctly, informal observations can increase the quality of teachers' instruction; when performed incompletely and/or incorrectly, informal observations can result in no change or even negative consequences to teachers' instruction, student achievement, and a school's climate (Bloom, 2007; Grissom, Loeb, & Master, 2013). Principals conduct informal observations and walk-throughs for a variety of purposes including creating a presence, monitoring school operational issues, and complying with district-level expectations or mandates. Informal observations, specifically walk-throughs, help facilitate formative assessment which has been characterized as events that encourage assessment "for learning" rather than assessment "of learning" (Stiggins, 2002). Providing feedback is fundamental to formative assessment. Informal walk-throughs without follow-up feedback between the

principal and classroom teacher to provide the opportunity for improving instruction have little to no effect (Ing, 2009).

The primary source for training principals in informal walk-throughs has traditionally been through expert led formal professional development, in the form of consultants. This formal professional development is most often conducted in a seminar or lecture format whereby the presenter, or expert, transmits the information through a presentation to the learners. This method of professional development has not been shown to be as effective as on-the-job training which promotes learning in one's own work environment using a mentor or expert as a guide using real work situations as learning experiences (Mesler Parise & Spillane, 2010).

Experts, such as those who train principals, are at a disadvantage as trainers in that their knowledge and skills are often automated and unconscious; and, thus, not easily accessible to accurately describe how to perform complex tasks, such as conducting informal walk-throughs. Studies show that when training, experts may omit up to 70% of the key actions and decisions they make when describing how to perform a complex task (Clark, Feldon, van Merriënboer, Yates, & Early, 2008; Sullivan, Yates, Baker, & Clark, 2010). Expert knowledge becomes automated to free-up mental resources to handle novel problems. This expert knowledge is of two types: declarative knowledge, or "why or that" information, which is characterized by concepts, principles, and processes; and procedural or production knowledge which is "how and when" to apply knowledge. Experts who provide training can omit one or both of these types of knowledge, leaving the learner with incomplete knowledge or "holes" in their understanding (Clark & Estes, 1996).

Cognitive Task Analysis (CTA) is a method that has been demonstrated to be useful to capture the knowledge and skills experts use to perform complex tasks and solve difficult

problems (Clark et al., 2008). CTA is a qualitative research approach whereby three to five subject matter experts are interviewed, using a semi-structured interview protocol, in order to capture the conceptual and procedural knowledge required to perform a complex task. Conducting informal classroom walk-throughs and providing feedback to teachers are such complex tasks. The results of a CTA study could potentially be used for professional development of existing and aspiring principals.

Purpose of the Study

The purpose of this study is to conduct a CTA with principals who have been identified as experts, to capture the knowledge and skills they use when conducting informal walk-throughs and providing feedback to teachers to improve teachers' classroom instruction.

The questions that guide the study are:

- What are the action and decision steps that expert principals recall when they describe how they conduct informal classroom walkthroughs and provide feedback to teachers?
- What percentage of actions and/or decision steps, when compared to a gold standard, do expert principals omit when they describe how they conduct informal classroom walk-throughs and provide feedback to teachers?

Methodology of the Study

Cognitive Task Analysis was used in this study to determine the knowledge and skills of kindergarten through twelfth grade (K-12) principals from school districts in Southern California identified as experts (subject matter experts or SMEs) in conducting informal classroom walk-throughs and providing feedback to teachers. Four SMEs were selected, three to participate in

interviews and the fourth to verify the data collected from the three SMEs on informal classroom walk-throughs. The CTA followed a five step process

1) a preliminary phase to build general familiarity frequently called "bootstrapping;"

2) the identification of declarative and procedural knowledge and any hierarchal relationships in the application of these knowledge types;

3) knowledge elicitation through semi-structured interviews;

4) data analysis involving coding, inter-rater reliability, and individual SME protocol verification; and

5) the development of a gold standard protocol that was used to analyze and determine expert omissions and ultimately for use in the training of novice principals.

Definition of Terms

The following are definitions of terms related to cognitive task analysis as suggested by Zepeda-McZeal (2014).

Adaptive expertise: When experts can rapidly retrieve and accurately apply appropriate knowledge and skills to solve problems in their fields or expertise; to possess cognitive flexibility in evaluating and solving problems (Gott, Hall, Pokorny, Dibble, & Glaser, 1993; Hatano & Inagaki, 2000).

Automaticity: An unconscious fluidity of task performance following sustained and repeated execution; results in an automated mode of functioning (Anderson, 1996a; Ericsson, 2004).

Automated knowledge: Knowledge about how to do something: operates outside of conscious awareness due to repetition of task (Wheatley & Wegner, 2001).

Cognitive load: Simultaneous demands placed on working memory during information processing that can present challenges to learners (Sweller, 1988).

Cognitive tasks: Tasks that require mental effort and engagement to perform (Clark & Estes, 1996).

Cognitive task analysis: Knowledge elicitation techniques for extracting implicit and explicit knowledge from multiple experts for use in instruction and instructional design (Clark et al., 2008; Schraagen, Chipman, & Shalin, 2000).

Conditional knowledge: Knowledge about why and when to do something; a type of procedural knowledge to facilitate the strategic application of declarative and procedural knowledge to problem solve (Paris, Lipson, & Wixson, 1983).

Declarative knowledge: Knowledge about why or what something is; information that is accessible in long-term memory and consciously observable in working memory (Anderson, 1996a; Clark & Elen, 2006).

Expertise: The point at which an expert acquires knowledge and skills essential for consistently superior performance and complex problem solving in a domain; typically develops after a minimum of 10 years of deliberate practice or repeated engagement in domain-specific tasks (Ericsson, 2004).

Procedural knowledge: Knowledge about how and when something occurs; acquired through instruction or generated through repeated practice (Anderson, 1982; Clark & Estes, 1996).

Subject matter expert: An individual with extensive experience in a domain who can perform tasks rapidly and successfully; demonstrates consistent superior performance or ability to solve complex problems (Clark et al., 2008).

Organization of the Study

Chapter Two of this study reviews the literature in two main sections, the first section of the literature review examines the relevant literature related to conducting informal classroom walk-throughs and the second section focuses on the relevant literature related to Cognitive Task Analysis as a knowledge elicitation technique for subject matter expertise. Chapter Three addresses the methods of this study and how the approach to the research answers the research questions. Chapter Four reviews the result of the study and compares the findings to each of the research questions. Chapter Five serves as a discussion of findings, the implication of the findings upon informal classroom walk-throughs and CTA, limitations of the study, and implications for future research.

CHAPTER TWO - LITERATURE REVIEW

The Changing Educational Landscape

Over the course of the past 20 years, education has experienced significant changes related to nearly every aspect of teaching, learning, and accountability with the adoption and implementation of rigorous standards, testing, and accountability measures through No Child Left Behind and more recently the Common Core State Standards. The result has been increased pressure upon teachers and principals to improve student performance. The following sections examine these issues in greater depth by discussing the No Child Left Behind Act and Common Core State Standards, and the increased pressure they have placed upon teachers and principals.

No Child Left Behind Act

The No Child Left Behind (NCLB) Act was signed into law in January 2002 by President George Bush and had far reaching effects on education throughout the United States. The theoretical underpinnings of NCLB were that schools should be forced to improve student achievement and be held accountable if students were not achieving. Student achievement under NCLB was measured through large-scale assessment systems with consequences for student achievement designed to motivate school leaders, teachers, and students.

High stakes accountability. Accountability under NCLB demonstrated a "contractual" relationship between a "director" who rewards, punishes, or replaces and a "provider" who provides a good or service on many levels: federal to state, state to county, county to district, district to principal, principal to teacher, and teacher to students (Hentschke & Wohlstetter, 2004). All students and numerically significant subgroups as described by Kim and Sunderman (2005), were expected to score at the proficient level in English language arts and math by 2014 on state assessments, even though as Elmore (2002) and Linn (2005) described a 10% increase

each year in proficiency from the implementation of NCLB up to 2014 was ungrounded in any research base or theory of school improvement. The results of NCLB testing were made public as were the sanctions for schools and districts that did not achieve "proficient" levels (Dee & Jacob, 2011). As Elmore (2002) explained the sanctions were developed by policy makers that were not involved in education or local communities and included forcing schools to use Federal funds to provide tutoring, offering parents transfers to non-failing schools, removing the principal, and restructuring of closing the school altogether (Davidson et al., 2013). The rewards and sanctions under NCLB have proven to be ineffective, both in practice and the research literature, in turning around or improving professional practice and student achievement in failing schools in urban areas, with higher total student enrollments, which contain large numbers of students who are low Socio-economic Status (SES), minority, and designated as Title I eligible (Davidson et al., 2013; DuFour & Mattos, 2013). Furhman (2004) states that NCLB was intended to result in more effective instruction with minimal unintended consequences, however as seen in the next section, NCLB had several unintended consequences.

Unintended consequences of NCLB. Under NCLB each state was given the authority to establish teaching standards, assessments, and scores that would determine proficiency levels; leading to a large degree of variability between "proficient" among states. As a result, failing schools and students in one state would likely be proficient in another state and there was no way to accurately and fairly compare results across states due to inconsistent standards, assessments, levels of rigor, and the inability to correlate NCLB testing with nationally normed tests such as the National Assessment of Educational Progress (NAEP) (Cawelti, 2006; Davidson et al., 2013; Linn, 2005; McDonnell & Weatherford, 2013). Teachers supported the aims of NCLB, however teachers also made changes to their instructional practices including: shifting instructional time

to the tested areas of language arts and math at the exclusion of other subject areas, increased time teaching test preparation, and paying more attention to student just below the "proficient" level or "bubble kids" (Cawalti, 2006; Murnane & Papay, 2010).

Another unintended consequence of NCLB was the incentive and sanction system did not provide rewards for progress or focus on growth that did not reach the predetermined levels of proficiency. Schools with high concentrations of disadvantaged students, students with special needs, and English language learners were more likely to be labeled "failing" despite demonstrating consistent and regular student achievement gains (Linn, 2005; Murnane & Papay, 2010). Teacher morale and school climate were also impacted by demoralizing patterns of repeated failure, perceived inability to reach NCLB goals, and removal of school principals (Cawalti, 2006; Murnane & Papay, 2010). Educational gains as measured by student achievement for all student groups have fallen short of expectations, and in most cases, remained flat despite the money and energy spent to implement the "top down" accountability measures of NCLB (Adams, 2010; Council for Exceptional Children, 2005; Harkin, 2013). The unintended consequences of NCLB, in addition to the inability of many schools and districts to reach the student achievement goals has led to the development and adoption of a new set of learning standards, the Common Core State Standards.

Common Core State Standards

In 2009, the Council of State School Officials and the National Governors Association Center for Best Practices coordinated the creation of the Common Core State Standards (CCSS) (CDE, 2010).

Background. The concept of developing "National Standards" dates back more than two decades, not long after the publication of *A Nation at Risk*. The CCSS represent a previously

unknown shift from the varied and inconsistent standards across each state in the country, and the CCSS were developed to be the next generation of learning standards to provide for a common set of expectations for the entire United States based upon research, international models, college and career readiness skills, and 21st century skills (California Department of Education [CDE], 2013; McDonnell & Weatherford, 2013; Phillips & Wong, 2013; Porter, McMaken, Hwang, & Yang, 2011).

Implications. O'Day and Smith (1993) explained the development of a "national curriculum," the CCSS, attempted to address the achievement gap and focused on impacting classroom instruction which has a profound effect upon the achievement of minority, disadvantaged, and low-SES students. The movement to a "national curriculum" is anticipated to lead to: (a) common understanding of what all students should know and be able to do; (b) structures and supports for schools to deliver state adopted curriculum through sound teaching by teachers who are appropriately educated and licensed; and (c) governance structures which provide for sufficient resources, flexibility, and accountability to ensure all students are meeting the goals (O'Day & Smith, 1993).

Implementation. The focus of the CCSS, which have been adopted in 48 states, is on what students should know and do, but not on how they are taught or assessed, so the next step in implementing the CCSS will be to develop aligned instructional tools and assessments (Phillips & Wong, 2013; Porter et al., 2011). The CCSS are "fewer, higher, and clearer," however the number of standards and amount of content that needs to be taught will require alignment of the CCSS in all content areas. Adding to this challenge, textbooks and instructional materials created on a state-by-state basis need to be aligned to the CCSS through rewriting and redesigning by the textbook companies because the alignment between existing standards and the

CCSS is only between 25% and 52% for the two primarily assessed areas of English language arts and Math (Phillips & Wong, 2013; Porter et al., 2011). Additionally, state and local assessment systems will not just have to be readjusted, but entirely redesigned as current state assessment systems based upon existing state standards show a 19% alignment with the CCSS (Phillips & Wong, 2013; Porter et al., 2011). The adoption and implementation of the new and more challenging Common Core State Standards will not raise student achievement alone; ultimately the pressure is on classroom teachers and school principals to change the content, delivery, and assessment of classroom instruction.

Increased Accountability for Student Achievement

Changes to educational policy and standards brought about by NCLB and the CCSS affect classroom teachers and school principals as they are the individuals who must ultimately implement these policies and standards, and who are held accountable for demonstrating results in the form of student achievement.

Increased pressure on teachers for student achievement growth. The theory behind NCLB and other accountability measures is high-stakes accountability and testing influence classroom activities. The greatest impact upon teachers across the research was the increased pressure they were under to produce student achievement gains on high-stakes testing (Diamond 2007; Hannaway & Hamilton, 2008; Plank & Falk Condliffe, 2013; Reback, Rockoff, & Schwartz, 2011). This increased pressure also manifested itself in changes to instructional content wherein teachers mediated the changes to instructional content through focusing on English language arts and Math at the exclusion of other non-tested subject areas (Diamond, 2007; Hannaway & Hamilton, 2008; Murnane & Papay, 2010). These changes to instructional content were even greater for minority and disadvantaged students who received significantly

more didactic instruction, as opposed to interactive instruction, than their predominately white middle class peers (Diamond, 2007). In schools with a greater number of students below proficiency benchmarks, teachers were 10% less likely to teach a science lesson and 6% less likely to teach a Social Studies lesson during a week of instruction (Reback et al., 2011). In addition, lesson pacing was changed, some instructional content was covered hastily to ensure students were exposed to tested curricular areas prior to testing, and students were instructed how to approach types of problems on a test without teaching the underlying subject area content, most commonly referred to as test preparation or "teaching to the test" (Diamond, 2007; Hannaway & Hamilton, 2008; Plank & Falk Condliffe, 2013).

Pressure from high stakes accountability also changed the way teachers delivered content and their instructional practices. During instructional periods prior to high-stakes testing, accountability pressures impacted the instructional practices of emotional support, classroom organization, and instructional support; and once released from the pressure of high stakes testing, tested classrooms returned to the same levels of organization and instructional and emotional support as non-tested classrooms (Plank & Falk Condliffe, 2013). The amount of time and attention students received on instructional content was varied due to high-stakes accountability with students who were just below testing proficiency goals, or "bubble-kids," receiving greater instructional time, specialized instruction, and resources at the expense of students significantly above or below the proficiency goals (Hannaway & Hamilton, 2008; Murnane & Papay, 2010). Hannaway and Hamilton (2008) found that in extreme cases teachers would even allow cheating, or at a minimum, turn a blind-eye to cheating when they knew it was taking place.

Pressure from high-stakes testing was also found to reduce teacher's feelings of having job security, to increase the percentage of teacher who reported that they did not plan on working in education until they retired, and to result in longer work hours for teachers. These results were even more significant for non-tenured teachers who lacked the same job protections as tenured teachers (Reback et al., 2011). Principals strategically placed teachers in tested grade levels, classrooms, and subjects adding to these pressures. The pressure of high-stakes accountability is not limited to teachers, but also impacts school principals as will be discussed in the following section.

Accountability of principals for student achievement. High-stakes accountability measures like NCLB call for the implementation and use of research-based strategies, like more intensive formal teacher evaluation, even though the research literature demonstrates that more intensive formal evaluations do not improve instruction or student achievement (DuFour & Mattos, 2013). Principals have been under increased pressure to improve instruction and student achievement through teacher evaluation. Effective teacher evaluation involves teachers knowing what to do and being motivated to actually do it, and if they are not principals are expected to teach them how and motivate them to change their practice. For effective teacher evaluation to occur, principals must have the time to conduct teachers' evaluations and the expertise to help improve teachers' practices (DuFour & Mattos, 2013). The principal's role in improving teachers' practice and motivating the teachers to implement these improvements are commonly referred to as "instructional leadership," a concept popularized in the 1980's when the "Effective Schools" movement began based on the reasoning that principals of "instructionally effective" schools are leaders (Hallinger, 2007).

The role of instructional leader places principals under increased pressure to demonstrate that a school is both legitimate and has organizational integrity (Spillane & Kenney, 2012). This need for legitimacy and integrity creates conflict between the teachers and principal as the teachers are accustomed to autonomy and personal choice, and principals are accountable for implementing policies with fidelity (Spillane & Kenney, 2012). Spillane and Kenney explain the principal is caught between being the primary unit for implementing federal, state, and district mandates and policies, and supporting classroom teachers as they work to improve student achievement; while convincing them to implement policies and mandates that may be well intentioned but lacking detail, untested, and in the worst case, not educationally sound. One of the primary ways principals increase legitimacy and integrity is through improving teaching and learning with a more coherent instructional program. The challenge for many school principals is that instructional leadership is not an area that is taught in many pre-service administrative programs or that has a large body of supporting research (Spillane & Kenney, 2012). Moreover, despite the increased pressure for instructional leadership and improved instruction, the classroom remains the teacher's domain where the teacher works primarily in isolation and the presence of the principal may not be welcomed

Under high-stakes accountability, another area of pressure for principals is the possibility of being removed from their position if their school, especially if a school is low-performing with a high number for students from disadvantaged populations, fails to meet growth benchmarks based upon student assessment scores. Branch, Hanushek, and Rivkin (2012) stated that low-performing schools have the highest percentage of first year principals with no previous administrative experience, whereas high-performing schools without students from disadvantaged backgrounds have 50% more principals with at least six years of experience. The

researchers found that a principal in the top 16% of quality measures will lead to a .05 standard deviation increase in student achievement above the average growth for students with similar demographics. In short, Branch et al. (2012) found that school principals have an impact on student achievement outcomes. The pressure to increase student achievement has had unintended consequences on both teachers and principals, primarily increased pressure and stress, leading educators to question what is the most effective way to improve classroom instruction and student achievement.

Improving Classroom Instruction

The interaction between teachers and students in the classroom around instructional activities is the primary mechanism for learning and increasing student achievement. This section examines the importance of the classroom teacher's instructional practices on student achievement, the principal's role in improving classroom instruction, and instructional leadership.

Importance of Teacher's Instructional Practices for Improving Student Achievement

Educational policy makers have implemented a variety of policy initiatives with the goal of increasing student achievement such as: increased resources, increased instructional time, smaller class sizes, prescriptive instructional curriculums, and incentives and sanctions among many others (Cohen, Raudenbush, & Loewenberg Ball, 2003). The difficulty researchers have had in narrowing down the effects of the teacher on student learning and achievement is isolating the teacher's input as a variable and gathering a large enough sample size to mitigate other external student factors such as SES, language dominance, minority status, and assuring the non-random assignment of students to teachers' classrooms. This analysis is known as "value-added"

analysis, or the value a teacher's input adds to a student's achievement (Wright, Horn, & Sanders, 1997).

A number of studies have found the greatest influence on student achievement remains effective classroom instruction and the effect of a teacher is significantly higher than all other factors measured (Cohen et al., 2003; Kane, McCaffrey, Miller, & Staiger, 2013; OECD, 2005; Rivkin et al., 2005; Rowan, Correnti, & Miller, 2002; Wright et al., 1997). Rowan et al. (2002) used a statistical model that overcame the weaknesses of most "value-added" models and found the effect size of a teacher upon a student's individual achievement differs between 4-18% of the variance per year, and when students are provided instruction in two subject areas by the same teacher they will demonstrate higher achievement in one subject over the other. The amount of increased achievement a student experiences with an effective teacher is offset if the student has an ineffective teacher the following year or even worse two years of an ineffective teacher in a row; however the data indicate that students only have a 3% chance of having two years of an effective or ineffective teacher in a row, and a 1% chance or having three consecutive years of either type of teacher (Rowan et al., 2002). Rowan et al. conducted interviews with the teachers in their study to further investigate the difference in achievement across classrooms and concluded that teachers use a variety of research-based effective instructional content and teaching strategies but not all. This was due mainly to teacher autonomy and the lack of supervision of teachers and classrooms to reinforce, support, and monitor the use of research-based effective instructional practices. Autonomy and lack of supervision was compounded by the effect of randomization, naturally occurring talent, and voluntary adoption of techniques and practices, causing researchers to conclude, "As a direct result of teacher to teacher differences in instructional effectiveness, some students make far less academic progress than they would

otherwise be expected to make simply by virtue of placements in ineffective classrooms" (Rowan et al., 2002, p. 10).

Similar value added studies which have narrowed the scope of student achievement down to the effectiveness of the teacher, eliminating the factors of student selection and teacher assignment, have found the greatest influence on student achievement is effective classroom instruction (Cohen et al., 2003; Kane et al., 2013; Rivkin et al., 2005; Wright et al., 1997). Further, a teacher's education level, years of experience after the first three years, class size, and student's family income made no measureable difference in a teacher's impact on student achievement. The results of these studies support two important findings regarding student achievement: (a) the teacher has a greater influence on student achievement than all other factors; and (b) standardized tests accurately report academic progress.

Effective teachers were effective with all students due to common components of effective instructional practices regardless of the combination of all other factors, and the variance in teacher quality was just as strong within schools as it was between schools, making teacher quality a much larger issue for every school in every district (Cohen et al., 2003; Kane et al., 2013; Rivkin et al., 2005; Wright et al., 1997). As a result, these studies call for teacher evaluation which includes reliable and valid measures of a teacher's ability to provide effective classroom instruction which raises student academic achievement. They also support coaching and training for principals and teachers to increase teacher quality. "In comparison to gains from higher teacher quality, however, the estimates indicate that even a very costly ten student reduction in class size, such as those undertaken in some U.S. states, produce smaller benefits than a one standard deviation improvement in teacher quality" (Wright et al., 1997, p. 419).

In 2005, the Organisation for Economic Co-operation and Development (OECD) conducted a study which looked at data across 25 countries and focused on issues related to teacher quality and found that teachers are essential to school improvement and the most costly component. A teacher's educational level, previous experience, academic ability, and knowledge of subjects taught made little difference in student achievement, but effective instructional practices impacted student achievement (OECD, 2005). The study found that teaching, unlike many other professions, does not have a built in cultural expectation of change and life-long learning brought about by changes in knowledge, technology, and research. As a result, teachers expect to do what they learned in college for their entire career; however, what has been learned from the research on teaching and learning in the past 20 years should change new and veteran teacher's practice (OECD, 2005). The principal, as the instructional leader, plays an important role in improving classroom instruction and changing teacher practice.

Principal's Role in Improving Classroom Instruction and Instructional Leadership

With NCLB and now CCSS, the role of a principal has changed from that of a school manager to an instructional leader (Grissom et al., 2013; Hallinger, 2007; Ing, 2009; Louis, Dretzke, & Wahlstrom, 2010; May, Huff, and Goldring, 2012; Ovando, 2006; Turnball et al., 2009). The research literature has focused on three key components related to instructional leadership: defining instructional leadership and what it looks like; explaining the current model in practice in schools; and describing the effects of instructional leadership on student achievement. Instructional leadership is defined as transforming a school's culture and instructional practices so that effective teaching and learning are taking place and accessible to all students. Instructional leadership is further characterized by working publically to improve instructional practices and engaging teachers in reflective discourse about improving their

instructional practices without focusing on the principal's personal attributes (Elmore, 2002; Hallinger, 2007; Louis et al., 2010; Ing, 2009; May et al., 2012; Marzano et al., 2005).

The shift to principal as instructional leader has led researchers to not just look at what an instructional leader does, but when, how, and why it is done. Marzano et al. (2005) conducted a meta-analysis on research studies related to principal instructional leadership conducted since the 1970's and looked at the effect of principal instructional leadership on student achievement. They found the correlation between principal leadership and student achievement to equal a 10% difference in achievement between effective and ineffective instructional leadership practices (Marzano et al., 2005).

Preparing principals as instructional leaders. The impact of instructional leadership upon student achievement is limited by a principal's ability to actually become an instructional leader. Louis et al. (2010) examined the impact of instructional leadership on student achievement and determined that in addition to instructional leadership practices, principals also need to be able to implement shared leadership and develop trust with the teaching staff. However, principals report that they avoided the role of instructional leader for other school management activities that were more tangible and managerial, especially in higher performing schools, and instructional leadership activities changed and often decreased as a school's performance increased (Hallinger, 2007; May et al., 2012). Although principals are more socialized in the role of instructional leader, they do not feel competent to perform this role and face the obstacles to getting into the classrooms due in part to the diverse nature of instructional leadership activities which can vary from one school year to the next (May et al., 2012). As such, "there is little evidence to support the view that on a broad scale at either the elementary or secondary school level that principals have become more engaged in hands-on directed

supervision of teaching or learning in the classrooms. The classroom doors appear to remain as impermeable as a boundary line for principals in 2005 as 1980" (p. 230). This presents a challenge to principals who are expected to take a hands-on role as an instructional leader coaching, monitoring, and evaluating a teacher's instructional performance which is primarily accomplished through the process of formal and informal observations.

Formal and Informal Observations

As noted in the previous sections, the principal is expected to be in the classrooms to observe teachers providing instruction in order to be able to determine the teachers' effectiveness, areas where teachers need assistance, and to monitor student learning. There are two main approaches to a principal's observations in a teacher's classroom, formal and informal. The next section examines what the literature indicates about both effective and ineffective formal and informal observations and how conducting informal classroom walk-throughs and providing feedback to teachers by the principal influences teachers' classroom instructional practices.

Effective and Ineffective Formal Observations

Formal teacher evaluations in most school systems are required by union contracts and local and state laws. The formal supervision model stems from an industrial model focused on compliance which is generally normative, punitive, and disciplinary reinforcing the hierarchical relationship between the teacher and the principal often thought of as a parent-child relationship in which the parent is in charge, tells the child what to do, and scolds the child when it is not done correctly (Downey, Steffy, English, Frase, & Poston, 2004).

Most frequently teachers are evaluated as "excellent" or "effective," on average 99%, with very few examples of teachers receiving negative comments and only when they are in

danger of being dismissed (Downey et al., 2004; Weisberg, Sexton, Mulhern, & Keeling, 2009). For example, during the 2002-2003 and 2003-2004 school years, 96% of nearly 2,650 teachers in the San Bernardino City Unified School District (SBCUSD) were rated as "meeting or exceeding" performance standards and 28% to 32% of the teachers did not receive comments providing suggestions for improvement on their performance evaluations, although 40 out of 54 campuses had not met NCLB proficiency standards (Peyton, 2005).

The FDR Group conducted a survey of 1,010 teachers who were representative of the teacher population nationwide who were formally evaluated, and then facilitated six focus groups to follow-up on the findings of the survey (Duffett, Farkas, Rotherham, & Silva, 2008). Only 26% of teachers surveyed said their most recent formal evaluation was useful and meaningful for their professional improvement, 44% called it "just a formality," and 70% reported that once a teacher became tenured it was merely a formality and not reflective of teacher quality. Duffett et al. (2008) asked the surveyed teachers about untenured teachers and 83% responded that they should have a more rigorous evaluation process. When asked about tenured or veteran teachers nearly one-half of the teachers reported that they knew a teacher who should be dismissed for being ineffective and 76% reported that they knew veteran teachers who were burned out and ineffective but "locked" in their teaching jobs due to pay and benefits (Duffett et al., 2008).

Evaluating all teachers with the same undifferentiated process with little to no clear goals for improvement or with no differentiated professional development or training based on professional experience has been referred to as the "Widget Effect" (Weisberg et al., 2009). Weisberg et al. state that the "Widget Effect" stems from the mindset that all teachers, "widgets," have the same effectiveness in the classroom and can be placed interchangeably with any

students without any negative impact to student achievement. Furthermore, the formal evaluation process is flawed by limiting administrators to one or two short and infrequent formal observations with little to no training and an engrained culture which views anything other than an average or above average rating as a personal attack. Weisberg et al. (2009) ultimately called for a formal teacher evaluation system that recognizes teachers who are truly excellent; provides for formative assessment and differentiated professional development and training for teachers; requires training and calibration for evaluators which holds them accountable for timely and accurate evaluations; uses evaluations to make personnel decisions such as assignment, promotion, and dismissal; and implements teacher dismissal policies that are efficient and timely, but that also allow teachers who are evaluated poorly to exit the profession easily.

Donaldson (2009) reviewed teacher evaluation processes and instruments finding that rating inflation was rampant in education which did not allow school systems to remove ineffective teachers because almost all teachers were rated as "satisfactory," and did not recognize teachers who truly were satisfactory and outstanding. Additionally, many evaluation instruments worked against improving and evaluating instruction, also known as "instrument failure," due to the focus on a checklist or working counter to the instructional focus of a district. District policies and teacher contracts further supported "instrument failure" by placing restrictive rules on what is evaluated, how it is evaluated, and limiting evaluation sessions to one class period as infrequently as every five years with no real consequences for poor evaluation; even though the instruments state that the goal was to improve instruction and student achievement. Principals face additional difficulties in making the formal teacher evaluation process robust as between 7% and 10% of a principal's total work time is needed to evaluate 20 teachers. Furthermore, principals did not receive professional development which included

immediate feedback and coaching to increase effectiveness, were evaluating subjects or grades they were unfamiliar with, and did not have a grasp of the components of great teaching (Donaldson, 2009; Ho and Kane, 2013). Added to these difficulties with the formal teacher evaluation process was the social issue of pushback from teachers when the process was made more rigorous and accurate; and the risk of losing the teachers' cooperation which was needed for the principal to run the school, and if a teacher was moved out, there was a strong likelihood of getting an equal or worse replacement (Donaldson, 2009).

In sum, principals' formal evaluations of teachers have been shown to be ineffective as a formative assessment for improving teacher's instructional practices and ultimately student achievement (Donaldson, 2009; Duffett et al., 2008; Jacob & Lefgren, 2006; Peyton, 2005; Weisberg et al., 2009). As will be shown in the next section, principals also conduct informal observations and researchers have studied their effectiveness.

Effective and Ineffective Informal Observations

Informal observations are most frequently referred to as classroom walk-throughs which are "brief, structured, non-evaluative observations followed by collaborative conversations" designed to support classroom instruction and student achievement, the goal of instructional leadership (Feeney, 2014; Grissom et al., 2013). When informal classroom walk-through observations are done well, the principal prepares teachers for the process by creating clarity of purpose, describing who will participate, and outlining the process (Bloom, 2007; Grissom et al., 2013). Bloom emphasizes that these initial steps followed by walk-throughs aligned with these initial steps, lead to informal observations that are tied to a school's instructional focus. Further, these walk-throughs build professional learning communities which lead to continuous

improvement and transformative processes that improve classroom instruction and student achievement.

Grissom et al. (2013) shadowed principals during their work day to observe their instructional leadership practices, in particular informal classroom walk-throughs, to determine if this strategy increased learning and academic achievement. Even though principals reported that walk-throughs served as the primary source of information about classroom instructional practices, the researchers (Grissom et al., 2013) found when a principal simply visited classrooms without providing feedback to teachers there was a negative association to school improvement. Bloom's (2007) findings further supported Grissom et al. (2013) by showing that when done poorly, classroom walk-throughs led to hostility and distrust among teachers and principals, and became one more school reform activity that did not increase student performance and caused teachers to be skeptical and locked into their existing instructional practices whether or not they were effective for improving student learning. A major limitation related to this study was not investigating the knowledge and skills that the principals had related to classroom walk-throughs and without training on classroom walk-throughs, which takes 50 hours of ongoing training to build proficiency. Principals may not know how to use the practice to support instruction and school improvement (Bloom, 2007; Feeney 2014).

The Wallace Foundation funded a study that provided a School Administration Manager (SAM) to principals who agreed to spend the time in the classrooms that the SAM freed them from managerial tasks (Turnbull et al., 2009). Turnbull et al. found with a SAM, principals were exercising greater instructional leadership through spending more time in the classrooms, but principals held few if any meetings with teachers to provide feedback and assistance to teachers on what they were observing. Specifically, on average principals increased their time in the

classrooms during instruction by five hours per week, but only four minutes per day were added to principals' time spent providing teachers with feedback, modeling, and coaching (Turnbull et al., 2009). Additionally, increased participation in school team meetings that looked at student data, achievement results, and instructional practices were sporadic. Increasing principals' available time in the classroom increased informal classroom observations providing compliance with quickly observable items such as posted objectives or checklist items. Informal classroom walk-throughs that are transformative to instructional practices will require more intense principal training and support. "Principals expressed interest in providing coaching and 'deep feedback' which would build teacher capacity. However, these principals also said this role would require specific knowledge and skills, which they were working to develop" (Turnbull et al., 2003, p. 53).

Providing teachers with formative feedback. Principals who provide professional development to teachers in the form of instructional coaching see results in improved instructional practices. Range et al. (2012) correlated formative supervision, or the process whereby principals provide feedback and assistance to teachers in order to impact instructional practices, with continuous improvement and a proactive stance toward improving teacher's performance. For classroom walk-throughs and the information collected during these walk-throughs to be useful as formative supervision, informal classroom walk-throughs must be linked with structured and purposeful coaching activities (Range et al., 2012). However, one of the difficulties in many school districts is formative supervision and formal evaluations are treated as the same process. Effective formative observations and supervision should not be evaluative but rather non-threatening and solely for the purpose of improving classroom practice (Range et al., 2012). Range et al. found that teachers valued open, honest, and sincere constructive feedback,

built on a relationship of trust, which included time for reflection and discussion of areas of improvement directly related to their instructional practices, was the most valuable component of a professional growth program.

Classroom walk-throughs which include the components of formative observations, coaching, and teacher feedback are important for effective and meaningful interactions between the principal and classroom teacher and result in improved instructional practices leading to increased student achievement.

Conducting informal classroom walk-throughs and providing feedback to teachers. Researchers have yet to make a direct definitive link between instructional leadership activities and increased student achievement, however when principals set a specific focus for the walk-throughs, conduct them regularly, and provide teachers with specific feedback; there is a positive correlation to the teachers' perceptions of the school's instructional climate (Ing, 2010). Further, Ing (2010) determined that conducting classroom walkthroughs without providing feedback to teachers has no impact upon the teacher's perception of the school's instructional climate.

Teacher training most often focuses upon formal lecture-style generic professional development with very few opportunities for on-the-job personalized training. Mesler Parise and Spillane (2010) conducted a study on the impact of on-the-job training through the practice of informal classroom walk-throughs to change teachers' instructional practices. The researchers had two primary findings from their study; first, teachers' perceptions of their school's conditions and the need for change are very different from a teacher's willingness to change their on-the-job performance. Meaning that on-the-job training has the potential of having the theory learned in formal professional development actually impact classroom practice. Second, teachers' learning with on-the-job training was not different between math and English language

arts. Teachers are generally more comfortable and effective in one of these two subject areas, and on-the-job training has the potential to balance out performance differences and improve instruction in both content areas (Mesler Parise & Spillane, 2010).

The classroom walk-through process was developed from the concept of "management by walking around" which was popularized in the 1980's and supported by the idea that the most effective managers were those that were out among their employees and involved in "the work" (Downey et al., 2004). There are at least 18 documented models of classroom walk-throughs and despite a large amount of professional development on classroom walk-throughs, there is not one agreed upon most effective model or best practice (Kachur, Stout, & Edwards, 2010). Classroom walk-throughs have four components in common:

1. They are short, informal, on-going, and paperless conversations to improve instruction and professional practice.
2. The teacher becomes the main audience for the principal, like the students are for the teacher, and the principal gives teachers information on their instructional practices for self-reflection.
3. They are conducted in the classroom where the instruction occurs in order to get a brief snapshot of the teacher's instructional practices.
4. Separate from formal observations and evaluations, it's a process that a principal can accomplish through clear communication and building trust (Downey et al., 2004, Kachur et al., 2010).

All models of classroom walk-throughs incorporate reflective conversations and dialogue based upon the data gathered during principal walk-throughs (Downey et al., 2004; Kachur et al., 2010). Downey et al. (2004) emphasize that follow-up conversations are essential to the

classroom walk-through; simply walking in and out of classrooms does not improve instructional quality or student achievement. The follow-up conversations should: occur in relative proximity to the walk-through, be done in private, be paperless, focus on the knowledge that teachers possess regarding their classroom practices, end with a reflective question designed to help the teacher think about his/her practice without having the principal tell the teacher what to do, and continue ongoing conversations regarding professional practice between the teacher and principal (Downey et al., 2004; Kachur et al., 2010). Kachur et al. emphasize three "T's" during this process "Trust, Transparency, and Truthfulness."

Professional Development for Principals on Informal Classroom Walk-throughs

Principals have to assume the role of mentor and coach to effectively conduct classroom walk-throughs, this is a role that principals are often not trained to take, does not come naturally, and requires time and coaching in order to reach a proficient level (Downey et al., 2004; Kachur et al., 2010). Training principals to conduct effective classroom walk-throughs involves using adult learning theory which includes the following key concepts: recognizing and reducing anxiety, defining and elaborating expectations, identifying and employing experience, allowing and supporting active participation, identifying and utilizing relevant information, and providing opportunities for change and growth (Kachur et al., 2010). Downey et al. (2004) found that it is extremely difficult for adults to assume the responsibility for and actually accomplish their own professional growth. As such, experts, in the form of consultants, are often relied upon to provide this professional growth to principals.

Nagel (2014) found that principals were asked to implement teacher observation and evaluation systems without sufficient tools, resources, and knowledge. When observing and evaluating teachers, principals should receive on-going professional development, including

technology and related tools, and credentialing programs should include explicit instruction regarding effective teacher observation and evaluation (Nagel, 2014).

Summary

Formal observations are required in many states and school systems. Results from formal observations indicate that nearly all except the absolutely worst teachers receive satisfactory or excellent ratings despite teachers and principals reporting that anywhere from 10 to 20 percent of the teachers at their school need to improve or even be terminated. Informal observations, specifically classroom walk-throughs, when conducted by a principal with follow-up activities change a school's culture and climate as the principal serves as the instructional leader, breaks down the hierarchal structure of principal-teacher supervision, and improves teachers' classroom instructional practices. However, when a principal conducts informal classroom walk-throughs without providing feedback to teachers or receiving proper training and support, the informal classroom walk-throughs can do greater harm than good. Thus it is important to determine how principals, especially those who lead high performing schools, conduct informal classroom walk-throughs and provide feedback to teachers and use this knowledge to develop training, instructional materials, and coaching and mentoring for other principals. In order to effectively train novice principals, training must be based on capturing the knowledge and skills of these successful principals.

Using Subject Matter Experts to Train Non-experts

Experts are frequently called upon for their knowledge and skills to teach, to inform curriculum content and instructional materials, and to mentor and coach others to perform complex tasks and solve difficult problems. The purpose of education is to replicate knowledge (Jackson, 1985). Education started with the traditional master and apprentice model in which the

objective was for the apprentice to imitate the master. As the concept of education evolved into a model of one instructor to many students, the objective of imitating the master remained. Contemporary education seeks to maintain this traditional model (Jackson, 1985).

Current research shows, however, that experts may omit up to 70% of the critical knowledge and skills novices need to replicate expert performance. Feldon and Clark (2006) found that experts' self-reports on critical knowledge and skills are often incomplete and inaccurate, and errors and omissions are often introduced that can hinder novices' subsequent performance of the target task. The errors and omissions made by experts cause novices to receive incomplete information which results in a void that the novices fill with their own information, which often contains misconceptions about successful strategies (Feldon & Clark, 2006).

Cognitive Task Analysis has been shown to be an effective method for capturing both the conscious and automated knowledge experts use to perform complex skills and solve difficult problems. To further understand why CTA is effective, the following sections examine two types of knowledge, the nature of automaticity, and the characteristics of expertise.

Knowledge Types

Merrill (1994) suggests that there are four types of knowledge: concept, processes, principles, and procedures. Further, Merrill stated that there were two uses of these four knowledge types; first, knowledge that you say or tell, or declarative knowledge; and knowledge that you use or apply, or procedural knowledge. Declarative knowledge, or factual knowledge, is recalled from long-term memory and is consciously observable in working memory, however it in not sufficient for performance. Procedural knowledge, or production knowledge, is required

for skilled performance. Automaticity of procedural knowledge develops as skills are practiced and automated knowledge is outside of the consciousness of the expert (Clark et al., 2008).

Declarative Knowledge

Declarative knowledge is knowledge that is controlled and can be changed abruptly in the working memory. Declarative knowledge is described as overt knowledge about facts, events, and objects which includes concepts, principles, and processes that can be used to articulate the answers to questions of "what, why, and that" (Anderson & Schunn, 2000; Clark & Estes, 1996). Nearly all knowledge is first learned in a declarative form characterized by the speed with which it can be learned and modified when it is retrieved from the long-term memory seemingly intended to help solve novel tasks (Anderson & Fincham, 1994; Clark & Estes, 1996). Declarative knowledge is also factual and goal-independent which includes beliefs about tasks or personal abilities which may influence goal setting (Corbett & Anderson, 1995; Paris et al., 1983). These characteristics of declarative knowledge led Anderson (1996a) to suggest that the proposition was the "atomic unit of thought," or in other words, at the basic level declarative knowledge is the relationship between two things or "this is that."

Anderson (1982) described that declarative knowledge by itself is insufficient to execute skilled performance. Knowledge is first learned in a conscious, declarative form represented in chunks which are then transformed over time with repeated use into a largely unconscious, automated procedural form freeing-up the working memory (Anderson, 1982; Anderson, 1993; Anderson & Schunn, 2000). The declarative stage of knowledge is where the domain knowledge is directly embodied in procedures for performing a skill made up of production rules (Anderson, 1982; Anderson & Fincham, 1994). Declarative knowledge, knowing *why* and *what* something is enables and supports the attainment of procedural knowledge, the *how* and *when* something is.

Procedural Knowledge

Procedural knowledge is knowledge about "when and how" to perform a task and apply specific procedures, skills, or methods which include sequences and steps to be followed during a simple or complex task (Anderson & Krathwohl, 2001; Ambrose, Bridges, DiPietro, Lovett, & Norman, 2010; Clark & Estes, 1996). Anderson (1982) explained procedural knowledge consists of "IF/THEN" statements that rely on facts generated from declarative knowledge (IF) that are converted to decision steps from procedural knowledge (THEN). Cognitive skill is a function of translation or transition from the declarative stage to the procedural stage (Anderson, 1982). Procedural knowledge is goal oriented, in that it promotes problem solving, and requires repetition, practice, and direct instruction (Corbett & Anderson, 1995; Paris et al., 1983).

Procedural knowledge involves knowing how to perform a task and includes the steps and actions taken during goal attainment (Paris et al., 1983). It is knowledge of different processes that result from subject-specific declarative or factual knowledge, for example knowledge of the skills and techniques in performing a complex task such as surgery (Anderson & Krathwohl, 2001). Clark and Estes (1996) suggested that procedural knowledge is difficult to learn and fast to execute. Further, it requires practice and feedback but once learned it demonstrates a high level of expertise and is automated requiring little conscious thought, like driving an automobile. Once procedural knowledge is developed and automated, it is very difficult to change or revise (Anderson, 1982).

Anderson and Schunn (2000) found that procedural knowledge is production knowledge represented by condition-action or procedural rules. Additionally, procedural rules and factual chunks combine to form competence in a given domain. The activation or retrieval

of factual chunks is influenced by how well the production knowledge is learned (base-level activation) and by the context (association activation) in which factual chunks are retrieved. Practice is needed to strengthen both the factual knowledge and production rules and retention is a function of how well information was learned and the pattern of practice (Anderson and Schunn, 2000).

Conditional knowledge is a subset of procedural knowledge. Conditional knowledge is described as knowing when or why to use or not use a given procedure, providing the circumstances or rational for various actions, including value judgments, and helping modulate procedural and declarative knowledge (Anderson & Krathwohl, 2001; Paris et al., 1983). Conditional knowledge modulates the fact-to-action process (Anderson, 1982). Paris et al. (1983) emphasized both "skill and will" as components of conditional knowledge and task execution as the amount of knowledge or skill may be an indication of capability but not necessarily likelihood of actual task execution. It is "will" or motivation that directs an individual's actions.

Declarative, procedural, and conditional knowledge are acquired as one transitions from novice to expert (Paris et al., 1983). With repetition and practice, both declarative and procedural knowledge become stronger and performance becomes more fluid, consistent, and automated.

Automaticity

Through repeated performance and deliberate practice of a task, declarative and procedural knowledge becomes automated and unconscious in nature and speed increases in performing a task while the amount of active mental effort decreases (Feldon, 2007). Anderson (1996b) identified three stages of automaticity:

1. The first stage is the interpretive stage or cognitive stage in which a learner is able to complete a task or at least a close approximation of the task with initial instructions that are often verbal. This stage frequently involves talking to oneself when performing the action.
2. The second stage is the knowledge compilation or associative stage. In this stage the learner works through the procedure and applies or learns the declarative knowledge necessary to correct procedural errors. As the learner corrects errors and develops stronger procedural knowledge the verbal cueing of talking to oneself decreases and ultimately disappears.
3. The third stage is the strengthening and tuning or autonomous stage where the learning performs the procedure automatically without verbal cueing and any changes made to the procedure serve to strengthen or make the process more efficient.

A fourth stage of automaticity was identified by Ericsson, Krampe, and Tesch-Römer (1993) which is reserved for expert performance only. In this fourth and final stage, experts have mastered most of the training provided by their teachers and coaches and add their own innovative and creative contributions to the field of expertise.

Automated processes often initiate without prompting and once initiated, they run to completion without being available for conscious monitoring (Feldon, 2007). Feldon found even when teachers are made aware of omissions in their automated teaching processes or are provided with goals to change these automated processes, they ironically fail to make changes because the working memory becomes quickly occupied with the changes and the automated processes begin and run to completion because the working memory is occupied. This results in

the inability to attend to and monitor automated processes in order to bring about desired changes. Further, Feldon determined as experts develop their conscious declarative knowledge, it becomes gradually more automated.

Automated knowledge helps to alleviate cognitive overload and/or processes that can impede the efficiency of working memory because the length and amount of information that can be retained and processed in working memory is limited (Kirschner, Sweller, & Clark, 2006). Kirschner et al. go on to say that procedural knowledge is difficult to articulate because it has become automated, non-conscious expert action, so critical information omitted by experts may confound effective knowledge sharing. With repeated practice, cognitive tasks become fluid and automatic and SMEs are able to deploy strategies to solve problems with ease (Clark, 1999).

Automaticity is a double-edged sword, on one hand, it frees up working memory by unconsciously processing and running procedures, which then is available to attend to novel information and tasks (Wheatley & Wegner, 2001). When experts encounter new problems, they have the working capacity to see what is novel in new problems and figure out what to do consciously. On the other hand, once a skill or task is automated it is very resistant to change or modification and takes considerable sustained monitoring of mental processes to modify or eliminate (Clark, 2008; Wheatley & Wegner, 2001).

Automaticity enables the unconscious performance of tasks requiring declarative and procedural knowledge, freeing up working memory to address novel tasks, however due to the unconscious nature of automaticity it is resistant to change and difficult to modify, eliminate, or express to others; thus making automaticity an important, albeit complex, characteristic of expertise.

Expertise

Characteristics of Experts

The characteristics of expertise include extensive and highly structured knowledge of the domain, effective strategies for solving problems within the domain, and expanded working memory that utilizes elaborated schemas to organize information effectively for rapid storage, retrieval, and manipulation (Chi, 2006; Glaser & Chi, 1998). An expert is defined as a brilliant or distinguished journeyman, due to a track record of strong performance or years of working in a specific domain, who is highly regarded by peers and whose judgments are uncommonly accurate and reliable (Chi, 2006; Feldon, 2007). Further, an expert is able to consistently demonstrate superior performance reliability upon demand due to special knowledge or skills acquired from extensive experience with subdomains (Chi, 2006; Ericsson & Lehmann, 1996).

Expert performance was initially thought to be a gift from the gods and was first approached be theorists as something that an individual was "born" with (Ericsson & Charness, 1994). However, the more modern view supports the idea that expert performance is the result of skill that develops over time and with increased exposure to a task, however sufficient experience and practice will not lead to improved performance beyond any innate physical barriers prohibiting expertise (Ericsson, 2004; Ericsson & Charness, 1994; Ericsson et al., 1993). Studies of expertise have focused in two areas: (a) an "absolute approach" which starts with the tacit assumption that expertise happens by chance and is innate so the focus of these studies are "exceptional" individuals; and (b) a "relative approach" in which experts are compared to non-experts or novices which assumes that expertise is a level of proficiency that novices can achieve (Chi, 2006). The "relative approach" has been shown to be more accurate and is used more frequently in studies.

Experts are set apart from novices in that they have developed schemas allowing them to efficiently organize information so it is quickly and efficiently retrieved with minimal effort (Bedard & Chi, 1992). Experts can optimize normal working memory capacity limitations by seeing beyond function and simple schemas using principles, concepts, connections, and deeper learning allowing them to create mental models so they can anticipate based on advanced perceptual cues and forward thinking (Bedard & Chi, 1992; Ericsson & Lehman, 1996). This forward thinking enables an expert to view problems differently from novices who are more literal, predictable, and use surface information. An expert has the ability to determine the relevance of a situation through better developed working memory, short-term and long-term memory, and reflective memory skills between the long-term and working memory to detect with much greater speed and accuracy that a problem exists; enabling the expert to assess the degree of difficulty to generate a domain-relevant effective solution strategy through planning, reasoning, and anticipation of future events (Chi, 2006; Ericsson & Charness, 1994; Ericsson & Lehmann, 1996; Feldon, 2007; Glaser & Chi, 1988).

In sum, experts leverage their highly structured knowledge of relevant concepts and processes, or declarative and procedural knowledge, not as a consequence of domain-specific experience but rather through the acquisition of specific memory skills and highly structured knowledge of relevant concepts and principles tailored to the demands of working memory by a specific activity (Ericsson & Lehmann, 1996; Feldon, 2007).

Experts are limited when their expertise does not match the task that they are trying to solve, in other words, expertise does not transfer from one domain to another (Bedard & Chi, 1992; Ericsson et al., 1993). Bedard and Chi emphasized in cases where an expert's domain knowledge does not match the task, novices can outperform experts, supporting the importance

of declarative and procedural knowledge types when addressing expertise. Subject matter experts possess distinct and extensive declarative and procedural knowledge that enabled them to perform tasks expertly in their specific subject area much differently than novices, and this expertise is developed through specific actions.

Building Expertise

Expertise, by its nature, is acquired as a result of continuous and deliberate practice in solving problems in a domain. Alexander (2003) developed the Model of Domain Learning (MDL) which focuses on the journey that an individual takes from novice to expert specifically in academic domains to bridge the understanding of expertise and educational practice. The MDL focuses on three components: knowledge, strategic processing, and interest; all three of which play a role toward developing expertise as they influence each other at every stage, but differently at each stage. According to the MDL, the components of knowledge, strategic processing, and interest configure differently as individuals progress through the three stage of domain learning which are:

1) Acclimation: the initial stage of domain expertise. The term signifies the demands placed on student as they acclimate to a complex, unfamiliar domain.
2) Competence: competent individuals not only demonstrate a foundational body of domain knowledge, but that knowledge is also more cohesive and principled in structure.
3) Proficiency: a synergy among components is required for movement from competence into expertise. Not only is the knowledge base of experts both broad and deep, but the experts are also contributing new knowledge to the domain.

Ericsson (2004) also developed a theory of skill acquisition based on an individual's primary goal being to reach a level of mastery that will allow him/her to perform everyday tasks at an acceptable level or to engage proficiently in recreational activities with his/her friends. During the initial phase of learning, novices try to understand the activity and concentrate on avoiding mistakes. With more experience in the middle phase of learning, gross mistakes become rare, performance appears smoother, and learners no longer need to concentrate as hard to perform at an acceptable level. After a limited period of training and experience, frequently less than 50 hours for most recreational activities such as typing, playing tennis, or driving a car; an acceptable standard of performance is typically attained. As individuals adapt to a domain and their skills become automated, they are able to execute skills smoothly and without apparent effort. As a consequence of automation, performers lose conscious control over execution of those skills, making intentional modifications difficult. Once the automated phase of learning has been attained, performance reaches a stable plateau with no further improvements (Ericsson, 2004). In the absence of innate physical barriers, the challenge for aspiring expert performers is to avoid the arrested development associated with automaticity and to acquire cognitive skills to support their continued learning and improvement which is accomplished with more experience coupled with deliberate practice (Ericsson, 2004).

Deliberate practice leads to elite expert performance and to physical change (Ericsson & Charness, 1994). Deliberate practice is characterized by the aspiring expert's motivation to attend to the task and exert effort to improve his/her performance. The design of the task should take into account the preexisting knowledge of the aspiring expert so that the task can be correctly understood after a brief period of instruction. This ensures that the deliberate practice is designed to improve specific aspects of performance in a manner that attained changes can be

successfully integrated into representative performance (Ericsson, 2004a). The aspiring expert should receive immediate feedback and knowledge of results related to his/her performance, and finally the subject should repeatedly perform the same or similar tasks (Ericsson & Charness, 1994). Once expertise is developed, it has significant consequences.

Consequences of Expertise

As new knowledge becomes automated and unconscious, experts are often unable to completely and accurately recall the knowledge and skills that comprise their expertise, negatively impacting instructional efficacy and leading to subsequent difficulties for learners. Once knowledge and skills become automated they are deeply ingrained and difficult to modify or change, and evidence suggests that habitual approaches to problems are goal activated and start automatically (Feldon, 2007).

Feldon (2007) reviewed studies on the accuracy of expert's self-reports and determined that errors are prevalent in expert's self-reports of problem-solving processes and omissions increased as skills improved especially in the expert's domain. Feldon found that individuals tend to attribute most, if not all, of their actions to intentional decision making processes, and the strength of this belief can lead them unintentionally to fabricate consciously reasoned explanations for their automated behaviors. Hence, reports may be inaccurate when participants rely on incorrect preexisting causal theories to explain their processes and experts commonly fail to articulate relevant cues seen in problem states (Feldon, 2007). Consequently, the most frequent employed elements – presumably those of greatest utility within a domain of expertise – would be the most difficult to articulate through recall (Feldon, 2007). The automaticity of experts impairs their ability to consciously identify many of the decisions they make thereby

omitting key details and process information necessary to provide instruction for optimal performance.

Expert Omissions

Experts in an instructional role may unintentionally leave out information that students must master when learning procedural skills. Feldon (2004) concluded that automaticity and the accuracy of expert's self-reporting were negatively correlated. Recent research has shown that when experts describe how they perform a difficult task, they may unintentionally omit up to 70% of the critical information novices need to learn to successfully perform the procedure (Feldon & Clark, 2006). This is a serious problem because it forces novices to "fill in the blanks" using less efficient and error-prone trial-and error methods. Moreover, as these errors are practiced over time, they become more difficult to "unlearn" and correct (Clark, 2008).

There are two reasons for this problem. First, as individuals gain expertise, their skills become automated and the steps of the procedure blend together due to unconscious knowledge as a result of years of practice and experience (Clark & Estes, 1996). This causes experts to omit specific steps when trying to describe a procedure because this information is no longer accessible to conscious processes (Clark & Elen, 2006). Secondly, many experts are not able to share the complex thought processes of behavioral execution of technical skills. Even experts who make attempts to "think out loud" during procedures often omit essential information and have difficulty identifying points during a procedure where they make decisions (Clark & Elen, 2006). Errors are not often recognized by experts because of the automated and unconscious nature of the knowledge described and are likely to increase in number and impact under stressful situations (Hunt and Joslyn, 2000; Wheatley & Wegner, 2001). Due to expert

omissions in self-reports, knowledge elicitation techniques such as Cognitive Task Analysis are necessary to elicit expert knowledge.

Cognitive Task Analysis (CTA)

Definition of CTA

Cognitive Task Analysis (CTA) has evolved from traditional task analysis methods, and is utilized in order to elicit and explicate expert knowledge within a specific domain (Hoffman & Militello, 2009). CTA uses a variety of interview and observation strategies to capture a description of the explicit and implicit knowledge that experts use to perform complex tasks, as well as overt and covert cognitive functions that form the integrated whole (Clark et al., 2008). CTA captures both conscious and automated knowledge of complex tasks that can extend over several hours or days (van Merriënboer, Clark, & de Croock, 2002). CTA has been defined as an "extension of traditional task analysis techniques to yield information about the knowledge, thought processes, and goal structures that underlie observable task performance" (Chipman, Schraagen, & Shalin, 2000, p. 3). Modern work relies upon automation to support human action and is focused on the cognitive aspects of work that are not directly observable, so the products of CTA are used for teaching, individual training, performance assessment, and the development of expert systems (Chipman et al., 2000).

CTA History

The origins of CTA date back as far as 1880 and encompass many aspects of the study of cognitive engineering and task analysis. Studying work via task analysis is firmly rooted in Taylor's time and motion studies as well as the bricklaying studies of Gilbreth in the early 1900's whereby the physical cognitive elements of work were studied in order to improve human performance and system design to decrease fatigue, injuries, and labor costs (Annett, 2000; Hoffman & Militello, 2009; Militello & Hoffman, 2008). In the 1950s the foundations for

cognitive psychology began to take hold as the concept of mental workload and information processing became more important. As a result of this, there became increased interest in capturing human expertise, which time and motion studies could never capture; the mental processes and decisions behind expert performance, knowledge elicitation of complex tasks, and the explication of declarative and procedural knowledge (Annett, 2000).

This was the foundation of modern CTA which began in the late 1960's as a response to applied psychology, industrial engineering, human factors, and social and cognitive activities in the workplace (Hoffman & Woods, 2000; Militello & Hoffman, 2008). CTA methods emerged in the 1980s in response to workplace demand for expert systems and other applications of artificial intelligence however the term cognitive task analysis came into being as early as the 1970s (Annett, 2000; Hoffman & Woods, 2000). CTA has been long in evolution and over the past century has become one of the most successful methods of elicitation of expert knowledge (Clark & Estes, 1996). Modern CTA is the advanced task analysis system that fills in the gap of determining unobservable mental processes and decisions steps which evolved from traditional behavioral task analysis and the study of cognitive engineering.

Cognitive Task Analysis Methodology

A number of researchers have identified the stages through which a typical, ideal CTA would proceed. The ideal model of CTA, one that is not subject to resource restrictions, is typified by a series of five discrete steps; which are

1) A preliminary phase;

2) The identification of knowledge representations;

3) Knowledge elicitation techniques;

4) A review and possible modification of the knowledge elicited to date by experts; and

5) Using the results of the analysis as a basis for an expert system or expert cognitive model (Chipman et al., 2000; Clark et al., 2008).

Over 100 types of CTA have been identified (Cooke, 1994; Yates, 2007). Despite the varieties of CTA, in a general sense, most varieties follow the five-stage process.

Clark et al. (2008) and Clark (2014) state that concepts, processes, and principles (CPP) have been one of the most commonly used "evidenced-based" CTA methods. CPP draws from two methods: Precursors, Actions, Results, and Interpretations (PARI) which is a process in which experts, frequently in pairs, identify complex cognitive and behavioral demands in each of the four categories to complete a task as they think aloud, use diagrams and drawings, and ask probing questions; and Merrill's (2002, 2006) recommendations regarding instructional design (Clark, 2014; Hoffman & Militello, 2008; Tofel-Grehl & Feldon, 2013; Yates, 2007; Yates & Feldon, 2011). Despite the number of methods for conducting CTA, it has been shown across different disciplines to be an effective way to elicit expert knowledge.

Effectiveness of CTA for Capturing Expert Knowledge

Cognitive Task Analysis has proven to be an effective method for capturing the explicit observable behaviors, as well as the tacit, unobservable knowledge of experts. CTA is regarded as a necessary component of research in complex cognitive work because CTA addresses the issues of research into the interaction of people, technology, and work (Hoffman & Militello, 2009; Yates, 2011). CTA is able to identify the explicit and implicit knowledge of experts to use for training and technology. Knowledge that can be captured from experts includes domain content, concepts and principles, experts' schemas, reasoning and heuristics, mental models, and sense making (Hoffman & Militello, 2009; Yates, 2011).

CTA methodology uses multiple experts to capture explicit knowledge and skills needed to perform complex tasks and solve difficult problems. The use of CTA knowledge elicitation techniques is able to capture expert declarative and procedural knowledge for use in training and technology. A number of studies have shown that although experts individually omit critical information when describing how to perform complex task and solve difficult problems, this gap in knowledge can be meditated for by eliciting expert knowledge from multiple experts using CTA procedures (Tirapelle, 2010; Zepeda-McZeal, 2014). These studies have consistently revealed the effectiveness of aggregating multiple individual protocols of expert action and decision steps for performing complex tasks into a gold standard protocol. The gold standard protocol upon expert review is considered to be the most complete representation of how to perform the complex task or solve a difficult problem. Moreover, Crispen (2010) and Bartholio (2010) replicated the methodology of Chao and Salvendy (1994) and demonstrated that using three to five experts captured up to 70% of action and decision steps, and eliciting knowledge from additional experts beyond three to five results in only marginal increases (less than 10%) of action and decision steps.

Effectiveness of CTA-Based Training

Studies that have applied Cognitive Task Analysis to capture knowledge and deliver instruction have uncovered several benefits and useful design strategies as compared to other forms of instruction. CTA is able to identify the explicit and implicit knowledge of experts to use for training and technology, and the knowledge that can be captured from experts includes: domain content, concepts and principles, experts' schemas, reasoning and heuristics, mental models, and sense making (Hoffman & Militello, 2009). Data captured from CTA supports effective and efficient training and instructional activities in complex systems. CTA can be used

for training in a variety of ways, such as "cognitive training requirements, scenario design, cognitive feedback, and on-the-job training" (Crandall, Klein, & Hoffman, 2006, p .196).

CTA-based training has a long and rich history of result in the field of medicine. Tirapelle (2010) conducted a study to determine the increase in declarative knowledge and procedural accuracy and recall of critical decision steps for CTA-based training on Open Cricothyrotomy for medical students. Tirapelle found that CTA-based training resulted in significant increases in both procedural accuracy and recall of critical decision steps for medical students on Open Cricothyrotomy. Embry (2012) and Gucev (2012) conducted blind studies using CTA-based anesthesia training and found increases in the amount of declarative and procedural knowledge and speed of performing procedures for trainees receiving CTA-based training. Crandall and Getchell-Reiter (1993) conducted a study in which the findings were favorable in supporting CTA-based training methods as more effective for training in nursing practice. Fackler et al. (2009) demonstrated that CTA-based training was shown useful for understanding communication and decision making among physicians, resulting in the possibility of preventing harm to patients. CTA-informed learners, or employees, may be considered better trained and perhaps more appealing to employers throughout the medical field (Clark, 2014).

CTA-based instruction has also been successfully used by the military and Federal Government. Crandall et al. (2006) conducted a CTA-based training study with firefighters for the National Emergency Training Center to enhance their training systems in the areas of critical decision points, judgments, and patterns, which are essential to the training of firefighters. The CTA-based training proved to be more effective than the then current method of training firefighters. A research study by Schaafstal et al. (2000) was conducted on a group of students

who were attending the Naval Weapon Engineering School, and demonstrated the effectiveness of CTA-based training. The key success indicators of the CTA-based training were: systematic processing, understanding of the troubleshooting functions, and the correct identification of problems with a reduction in training time. The CTA method proved to be effective in increasing expertise from a theoretical perspective as well as a practical level with decreased costs (Schaafstal et al., 2000).

Meta-analysis of studies. Two meta-analyses of CTA-based studies have investigated the effectiveness of CTA-based training over more traditional non CTA-based training methods (Lee, 2004; Tofel-Grehl & Feldon, 2013). Lee (2004) reviewed 39 studies based on pretest and posttest results after CTA-based training and found performance gain of 75.2%. Tofel-Grehl and Feldon (2013) found an effect size for CTA-based training that is three time that of non CTA-based training, such as traditional behavioral task analysis and expert self-reporting. According to Clark (2014) CTA-based instruction contributes to posttest learning gains of 31% versus traditional training methods.

Critical Decision Method (CDM), a CTA method in which experts recall the critical decisions that they made during incidents which usually involve life or property (Klein, Calderwood, & MacGregor, 1989), and PARI CTA elicitation methods have been shown to be more effective toward improved training outcomes than other CTA methods. The effect size for CDM was .329 and for PARI was 1.598, resulting in a 13% increase in learning for CDM and a 45% increase in learning for PARI (Clark, 2014; Tofel-Grehl & Feldon, 2013). CTA-based training consistently demonstrates increased learning over more traditional non CTA-based training methods (Clark, 2014; Lee, 2004; Tofel-Grehl & Feldon, 2013).

Summary

CTA is a knowledge elicitation method that uses interview and observation techniques to capture a description of the explicit and implicit knowledge that experts use to perform complex tasks. When experts are asked to describe how to perform domain-specific tasks, they unintentionally omit up to 70% of critical information novices need to learn to successfully perform complex tasks. There are at least 18 different documented methods for conducting the complex domain-specific task of informal classroom walk-throughs and providing feedback to teachers, and traditional training relies upon subject matter experts, in the form of consultants, to provide instruction to novice principals. The purpose of this present study was to conduct a CTA to elicit school principals' expert knowledge, that is, the critical action and decision steps of subject matter experts, in order to develop a gold standard protocol that can be used as the basis for training novices on the task of informal classroom walk-throughs and providing feedback to teachers.

CHAPTER THREE: METHODS

The purpose of this study was to conduct a Cognitive Task Analysis to determine the knowledge and skills that expert principals (subject matter experts or SMEs) rely upon when conducting informal classroom walk-throughs and providing feedback to teachers to improve teachers' classroom instruction. The task examined in the study was conducting informal classroom observations of teachers and providing feedback by principals to improve teachers' classroom instruction. Given the nature of expertise, it was assumed that these subject matter experts had both declarative and procedural knowledge that was highly automated and often unconscious making it difficult for them to give detailed or accurate descriptions of what, why, how, and when they conducted informal classroom walk-throughs and then provided feedback to teachers.

As such, the questions that guided the study were:

- What are the action and decision steps that expert principals recall when they describe how they conduct informal classroom walkthroughs and provide feedback to teachers?
- What percentage of actions and/or decision steps, when compared to a gold standard, do expert principals omit when they describe how they conduct informal classroom walk-throughs and provide feedback to teachers?

Participants

The participants in this study were K - 12 principals identified as experts in conducting informal classroom walk-through observations followed by providing feedback to teachers on what was observed. As operationalized for this study, expert principals had at least five years of recent, consistent, and recognized success conducting informal classroom walk-throughs and providing feedback to teachers. These expert principals had reliable and commonly recognized

performance that could be validated, not mere social recognition or time on the job (Ericsson & Charness, 1994). Further the expert principals had a wide range of experiences, settings, and problems that they address on a regular basis; and did not have experience as instructors or trainers in the area of the study (Yates, 2007). Yates (2007) suggests that instructors or trainers often will describe how they train a task as opposed to how they actually perform the task on the job.

In order to select these experts, the researcher initially contacted school districts and county offices of education for names of experts in conducting informal classroom walk-throughs and providing feedback to teachers. However, this strategy was not successful. As an alternative path for identifying experts, the researcher contacted a consultant who for the past 10 years has provided training, on-site coaching, and observation of principals when conducting informal classroom walk-throughs and providing feedback to teachers. The consultant has worked with over 50 school districts in three states and with approximately 1,200 administrators walking through more than 5,000 classrooms. This consultant provided the researcher with a list of nine potential SMEs, principals of kindergarten through twelfth grade schools in Southern California with diverse student populations, for participation in the study and ultimately four responded to an invitation from the researcher and agreed to participate in this CTA study. The recommended participants were qualified as experts by the consultant based on: reputation; years of experience; superior performance of the task based on the consultant's personal observations and experience, and a track record of student achievement based on the annual state assessments verified on the California Department of Education (CDE) website. Table 1 provides a complete list of the potential SMEs whom were invited to participate in the current study.

Table 1

Potential SMEs as Recommended by a Consultant for the Current Study

Potential SME	Grades	Years of Experience	% of ELLs	% of FRLP	API Ranking
SME 1	K-8	7	40.8%	83.9%	719
SME 2	K-6	13	70.0%	80.0%	835
SME 3	K-6	20	31.8%	82.2%	878
SME 4	6-8	6	4.5%	54.0%	843
SME 5	9-12	22	2.9%	30.5%	839
SME 6	6-8	20	4.5%	35.9%	865
SME 7	K-5	15	31.1%	72.4%	846
SME 8	K-6	14	15.6%	9.8%	917
SME 9	6-8	22	60.6	97.6%	642

Note. All data in Table 1 is de-identified. Each SME is numbered for demonstration purposes only and numbering does not represent any rank order or selection criteria. ELLs means English Language Learners or students who have a dominant language other than English upon entering school in the United States and have yet to demonstrate English Fluency as demonstrated by the California English Language Development Test (CELDT). FRLP represents the Free and Reduced Lunch Program which provides free or reduced price school meals to students who are considered socio-economically disadvantaged. API is the Academic Performance Index which is a scaled score, from 200 to 1000, representing a school's ranking as compared to all other schools in the state based on student achievement as measured by students' annual state test scores.

Data Collection for Question 1: ***What are the action and decision steps that expert principals recall when they describe how they conduct informal classroom walkthroughs and provide feedback to teachers?***

Clark et al. (2008) describe a five-stage process to conduct Cognitive Task Analysis:

1. Collect preliminary information which builds general familiarity with the topic of the study through document analysis, observations, and informal interviews.

2. The second stage identifies knowledge types used when performing the task which requires the researcher to identify declarative and procedural knowledge and any hierarchal relationships in the application of these knowledge types.
3. The third stage applies the knowledge elicitation techniques best suited to the study.
4. The fourth stage verifies and analyzes the data gathered through the use of qualitative data analysis techniques.
5. A fifth and final stage formats the results into a training tool.

In this study, the five-stage process was implemented as described in the next sections.

Phase 1: Collect preliminary knowledge. Because the researcher is a former school principal and has experience conducting informal classroom walk-throughs, a thorough literature review was conducted to help gather preliminary information and build general familiarity on informal classroom walk-throughs.

Phase 2: Identify knowledge types. In the process of completing the literature review the researcher was able to develop a thorough understanding of the distinction between declarative and procedural knowledge. To practice distinguishing between these two knowledge types and to understand hierarchal relationship the researcher participated in practice activities with other researchers under the guidance of a senior researcher to identify action steps, decision steps, as well as conceptual knowledge types such as concepts, processes, and principles. These knowledge types were used in the interview protocol.

Phase 3: Apply knowledge elicitation techniques.

Instrumentation. A semi-structured interview protocol was used to capture the knowledge and skills from the subject matter experts using the concepts, processes and principles

(CPPs) technique (Clark, 2014). The semi-structured interview protocol is attached as Appendix A.

The CPPs techniques were used to develop the semi-structured interview protocol for this CTA. The CPPs technique uses layered interview techniques to gather the automated and often unconscious knowledge used by experts to accomplish complex tasks (Clark, 2006). The process begins with the researcher explaining the CTA process to the participant and asking the participant to list stages required to accomplish the larger task being studied. The expert then identifies five problems that an expert should be able to solve if the primary task has been mastered, and for the final step, the researcher leads the expert through a semi-structured interview that focus on each of the subtasks and how the expert completes the subtasks. The semi-structured interview focuses on items such as: action steps; decisions; concepts, processes, and principles; initiating conditions to start a subtask; equipment and materials needed; sensory experiences needed; and performance standards required among other relevant areas (Clark et al., 2008). The action and decision steps are considered the critical information novice need to perform the task. Action steps begin with a verb and are statements about what a person should do, such as "When driving a car, make a full stop at every stop sign." Decision steps contain two or more alternative to consider before taking an action, such as "When driving IF a traffic light is red, THEN stop; IF the traffic light is yellow, THEN proceed only if it is safe; IF the traffic light is green, THEN continue through the intersection."

Interviews. Following Institutional Review Board (IRB) approval from the University of Southern California, three of the four principals from school districts in Southern California were asked to participate in the semi-structured interview per the protocol described above. Each interview took approximately two hours and with prior approval of the subject matter experts,

the interviews were audio recorded to aid with transcription. The researcher used the semi-structured interview protocol to capture the unconscious and non-observable action steps, decisions, judgments, cognitive processes, and knowledge that the subject matter experts use when they conduct informal classroom walk-throughs and provide feedback to teachers.

Phase 4: Data analysis. Audio recording the interviews of the subject matter experts permitted verbatim transcription, using an outside service, of each interview for deep analysis of the interview data.

Coding. Once the interviews were transcribed verbatim, a coding scheme previously developed based Clark's (2006) CPP method was used to code the data from the semi-structured interviews. The coding scheme was used for inter-rater reliability and is included as part of Appendix B.

Inter-rater reliability. Using the coding scheme described above, the transcription of one complete interview was coded by the researcher and a fellow researcher as a second coder and compared for inter-rater reliability. The double coding was analyzed and a standard inter-rater reliability was calculated as a percentage of correspondence between the two coders. Hoffman, Crandall, and Shadbolt (1998) determined that once there is an 85% or higher agreement in inter-rater reliability, the coding process is consistent and reliable among different coders. If the inter-rater reliability is less than 85%, Crandall et al. (2006) recommend that the coding scheme and the function-unit categories may need to be further refined. The results of the inter-rater reliability are presented in Chapter Four.

Subject matter expert protocol and verification. The coding of the transcriptions led to the creation of a step-by-step protocol for each subject matter expert who was interviewed. These individual step-by-step protocols were generated and reviewed by each subject matter

expert with the researcher. During the second interview the researcher asked the SME to make any corrections, additions, or deletions to the individual protocol.

Phase 5: Formatting the results.

Gold standard protocol (GSP). The revised and corrected individual subject matter expert protocols were aggregated in order to generate a preliminary gold standard protocol (PGSP). The aggregation was accomplished by identifying the individual protocol that was most complete, clear, and used the most accurate language and terminology. Then each action and decision from each individual protocol was compared to the initial individual protocol considered to be most complete. If the action and decision steps had the same meaning, then it was attributed to both SMEs. If the language action or decision step was more accurate or complete from one of the other two individual protocols, then the action or decision step was modified and attributed to both SMEs. If it was a new step which was not listed in the most complete individual protocol, it was added to the initial protocol in order to build the aggregated initial gold standard protocol and attributed to the SME who had described it in their individual protocol. See Appendix C for a description for the complete procedure for creating a GSP. The PGSP was returned to the three subject matter experts who participated in the semi-structured interviews and provided to the fourth subject matter expert selected as a participant in the study but who was not interviewed as part of this CTA.

Summary. The five phase process noted above has been is called the 3i +3r method, which stands for three initial interviews and three reviews, and is represented visually in Figure 1.

Figure 1.

3i + 3r CTA Method

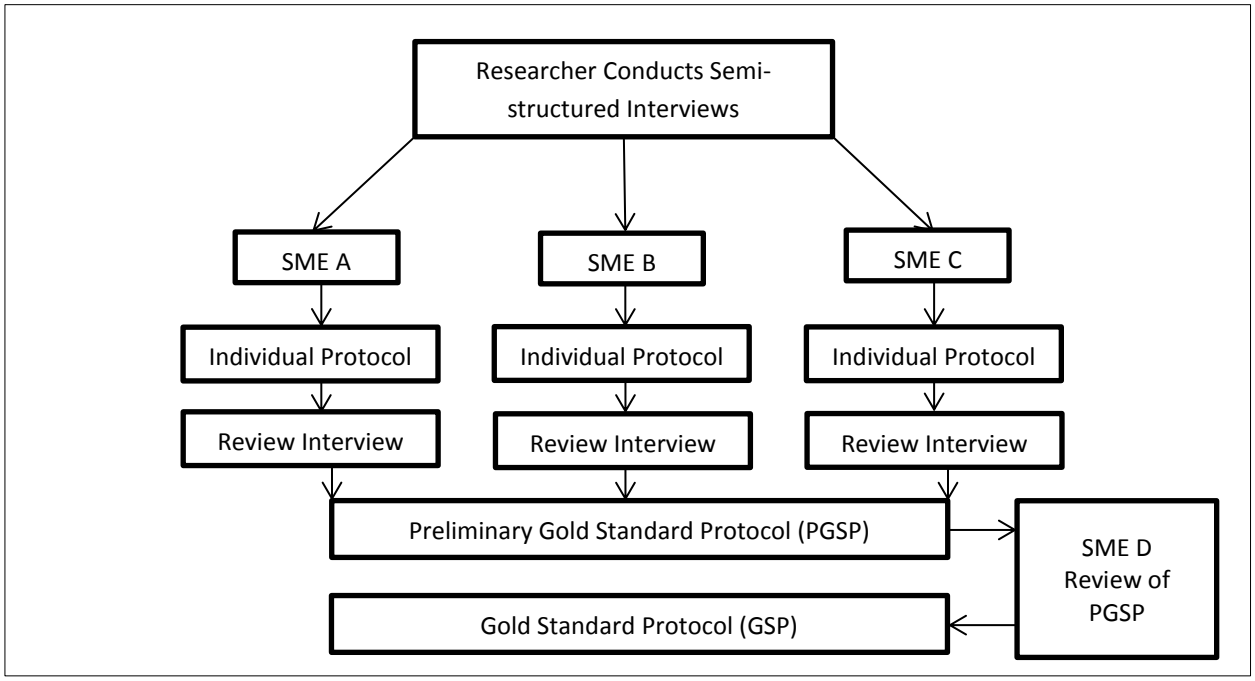

Figure 1: Provides a visual representation of the five stages of the CTA 3i + 3r Method.

Data Analysis for Question 2: ***What percentage of actions and/or decision steps, when compared to a gold standard, do expert principals omit when they describe how they conduct informal classroom walk-throughs and provide feedback to teachers?***

Spreadsheet analysis. The final stage of the data collection was completed by transferring the action and decision steps identified in the GSP to a spreadsheet. Each subject matter expert's protocol, as a result of the interview, was reviewed and compared to the GSP. If the individual protocol included an action or decision step that was also included in the GSP, then a "1" was placed in the cell corresponding to that action or decision step. If the action of decision step in the GSP was not in the individual subject matter expert's protocol, then a "0" was placed in the cell corresponding to that action or decision step. This analysis enabled the researcher to convert the frequency counts to percentages which represented the total number of agreements and omissions between the subject matter expert's individual protocol and the GSP.

CHAPTER FOUR: RESULTS

Overview of Results

This study examines the declarative and procedural knowledge, which are expressed as objectives, standards, cues, conceptual knowledge, and action and decision steps of four expert K- 12 grade principals as a result of using CTA methods to capture their expertise. The results of the data analysis are organized by research question.

Research Questions

Question 1

What are the action and decision steps that expert principals recall when they describe how they conduct informal classroom walkthroughs and provide feedback to teachers?

Inter-rater reliability. As described in Chapter Three, inter-rater reliability was determined by tallying the number of coded items that were in agreement and dividing that number by the total number of coded items. The results are shown in Appendix B. The inter-rater reliability was established at 97%. Given the high inter-rater reliability, this researcher coded the remaining two SME's interviews prior to creation of an initial individual protocol for each SME.

Flowchart analysis. SME A's initial individual protocol was then used to create a flowchart which is attached as Appendix D. The flowchart was carefully analyzed and reviewed by the researcher to ensure that SME A's knowledge flowed logically and that there were no decision steps without appropriate potential actions. The flowcharting process revealed additional questions regarding the knowledge captured in SME A's first interview which were asked during a follow-up interview, resulting in the final individual protocol for SME A. For example, the flowchart revealed several decision steps that did not provide two or more alternatives and several action steps that did not make a logical progression. The process of

flowcharting SME A's protocol and the subsequent round two interview, also informed the researcher about additional questions to consider during the protocol review with SME B and SME C.

Gold standard protocol. As described in Chapter Three, the researcher reviewed all three SME individual protocols and aggregated the data to create an initial gold standard protocol for conducting informal classroom walk-throughs and providing feedback to teachers. Upon review of the three individual protocols, SME C was determined to have the most complete individual protocol and as a result was used as the foundation for the preliminary gold standard protocol. Upon review of the remaining two protocols SME A was determined to be more complete than SME B. The individual action and decision steps for SME A were compared to each action and decision step of SME C and where the meaning of the step was identical, then SME A was also associated with describing that step. In the event there was an action and decision step in SME A's individual protocol that was not captured by SME C, it was added to SME C's foundational protocol; however, it was only associated with SME A. Following this process, the individual protocol for SME B was also aggregated in a similar manner to the aggregated preliminary gold standard protocol. An example of the process is shown in Figure 2.

Figure 2

Example of Aggregating Action and Decision Steps for the Preliminary Gold Standard Protocol (PGSP)

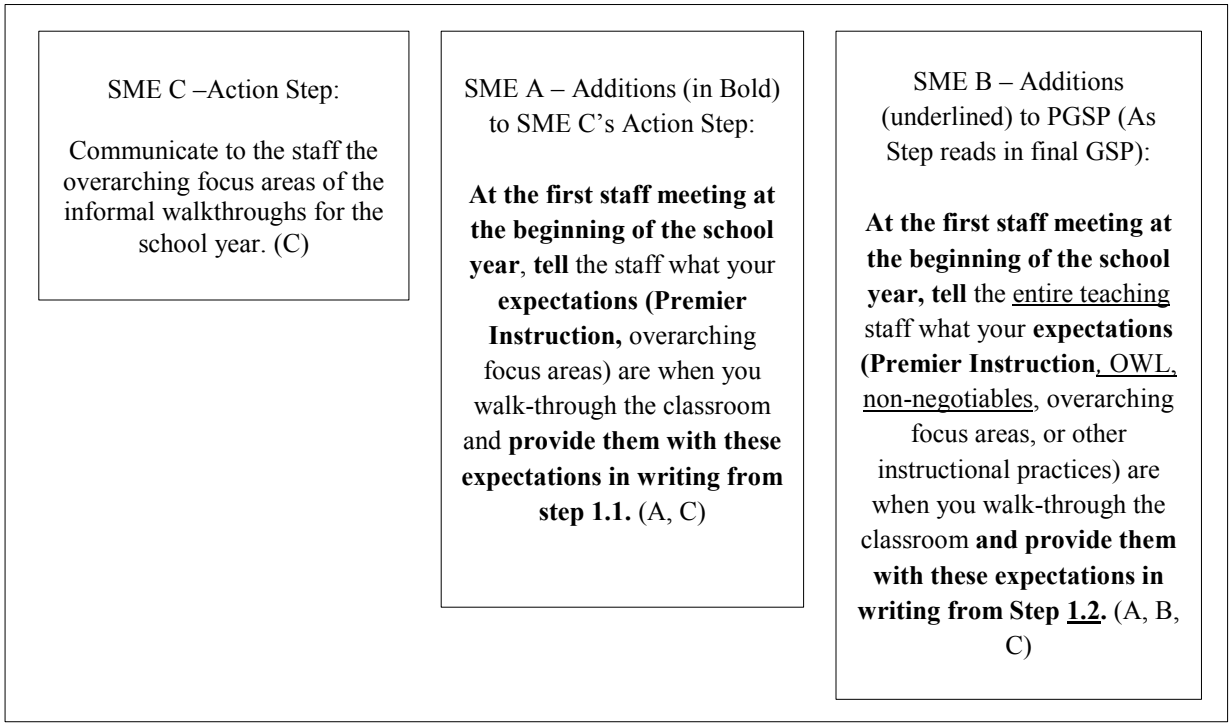

Figure 2. The figure show the progression of an action step as data described by each SME from their individual protocols is aggregated to create an action step found in the GSP.

The researcher sent an explanatory email and copy of the initial gold standard protocol to a fourth SME, identified as SME D, to allow SME D time to review the initial gold standard protocol before meeting with SME D in-person to capture additions, modification, and deletions to the initial gold standard protocol.

The response to Research Question one is the final gold standard protocol, attached as Appendix E, and represents the action steps and decision steps that expert principals use to improve teachers' classroom instruction through the informal observation and feedback process. Overall there were found to be eight stages in the process of conducting informal classroom walk-throughs and providing feedback to teachers. These eight stages are:

1. Build rapport, relationships, and trust.

2. Set clear expectations.
3. Plan for the walk-throughs.
4. Observe the teacher in the classroom.
5. Provide feedback to individual teachers.
6. Provide feedback to the entire teaching staff.
7. Communicate with the Leadership Team and plan next steps.
8. Facilitate personal reflection.

The disaggregated results are described in the following sections.

Recalled action and decision steps. A behavior that is observable is an action step. Unobservable cognitive processes are represented as decision steps that are critical to performing tasks and serve as cues or prompts for the SME to evaluate, interpret, analyze, and decide among alternatives. The action and decision steps captured from the experts interviewed comprise the critical information novices need to replicate expert performance. As such, the researcher conducted an analysis of each SME's action and decision steps to determine the number of steps recalled by each.

To conduct this analysis, the researcher listed each action and decision step in the final gold standard protocol in its own row of a Microsoft Excel spreadsheet. The number of action and decision steps was determined through frequency counts. In the first column on the spreadsheet, each step from the gold standard protocol was coded with "A" for action step or "D" for decision step. Some steps were not action or decision steps, for example standards in the gold standard protocol were labeled "S" for "Standard" but had no numerical value as part of the data analysis. An example of a standard is Step 2.5.5, "All professional development is aligned with the Board's goals and research-based." Each SME was assigned a letter, "SME A," SME

B," or "SME C" for identification purposes based on the order in which the SMEs were interviewed, and a column on the spreadsheet was used to track the inclusion of action and decision steps. Action and decision steps that were included in the individual SMEs protocol and the gold standard protocol were marked with a "1." The number of actions and decisions for each SME were totaled at the bottom of the SME's column. The spreadsheet analysis is attached as Appendix F. Table 2 provides a total of each SME's action and decision steps.

Table 2

Cumulative Action and Decision Steps Captured for Each SME in the Initial Individual Protocols.

	Steps		
	Action Steps	Decision Steps	Total Steps
SME A	35	47	82
SME B	49	35	84
SME C	58	42	100

Action and decision steps contributed by each SME. Table 2 reports action and decision steps recalled by each SME. The action and decision steps in Table 2 which were elicited through CTA may not be solely attributed to one SME, as a result the action and decision steps reported in Table 2 when added together do not equal the total number of action and decision steps in the gold standard protocol reported in Table 2. In other words, SMEs in many cases provided the same action or decision steps through the CTA process.

Figure 3

Number of Action Steps, Decision Steps, and Action and Decision Steps for SME A, SME B, and SME C Captured through CTA.

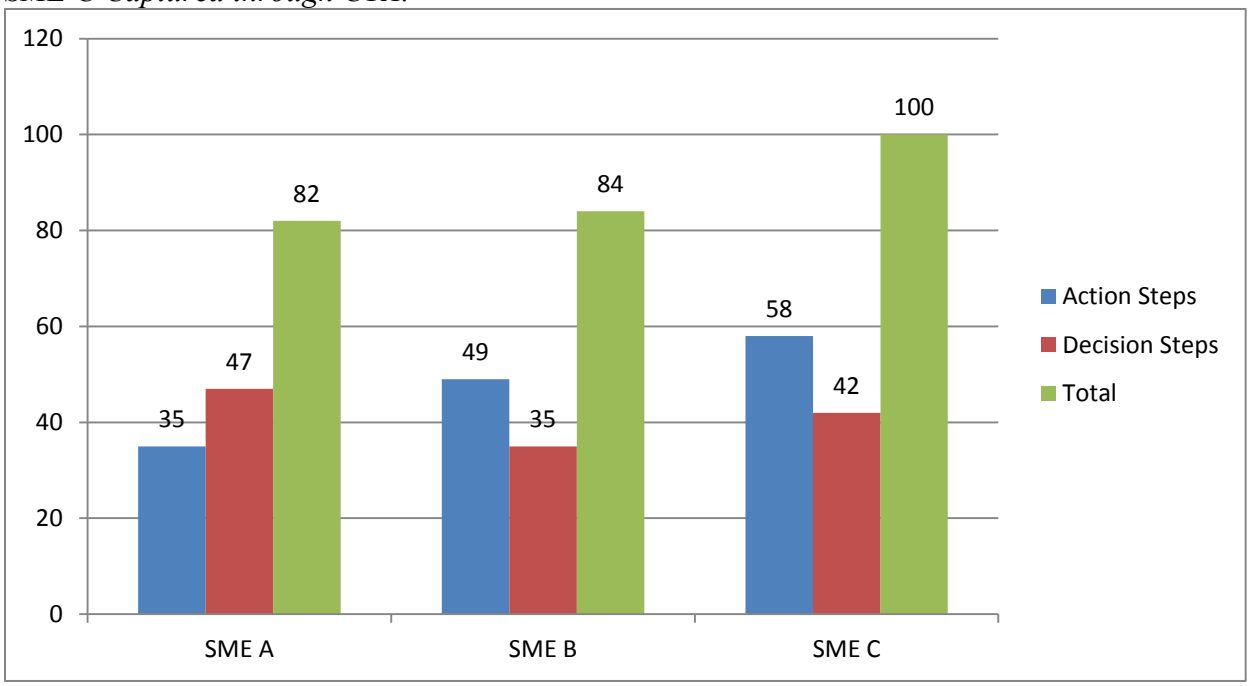

Figure 3. Total non-repeating action and decision steps from the CTA process represented in the gold standard protocol: action and decision steps – 196; action steps – 105; decision steps 91.

The SMEs collectively described a total of 197 action and decision steps, however no individual SME described more than 100 action and decision steps and the percentage of total recalled action and decision steps across all SMEs was between 41.84% and 51.02%. Only one of the three SMEs recalled more decision steps than actions steps, SME A recalled 35 action steps and 47 decision steps, a difference of 18.32 %. While SMEs B and C recalled more action steps than decision steps, SME B recalled 49 action steps and 35 decision steps, a difference of 8.21%; and SME C recalled 58 action steps and 42 decision steps, a difference of 9.09%. The range of the percentages of action steps identified between each SME was nearly 22%. The least percentage identified was 33.33% versus 55.24% for the most number identified; and the range

of decision steps identified was 13%, between 38.46% for the least number identified and 51.65% for the most.

Action and decision steps captured in the follow-up interviews. As an additional analysis, the researcher wanted to know how many action and decision steps were added, modified, or deleted during the follow–up interview with each SME. The results of this analysis are shown in Table 3.

Table 3

Additional Expert Knowledge Captured, in Action and Decision Steps, During Follow-up Interviews

	Additional Steps Captured	
SME	Action	Decision
A	3	7
B	2	1
C	31	12
D	0	2

Note: SME D did not participate in the CTA semi-structured interviews and only reviewed the initial gold standard protocol for additions, modifications, and deletions after it was reviewed by the other 3 SMEs.

In all cases, when the initial SMEs reviewed their individual protocols and participated in a follow-up in-person interview, the process resulted in increased action and decision steps.

Alignment of SMEs in describing the same action and decision steps. The spreadsheet analysis was also used to determine the number and percentage of action and decision steps described by each SME that were highly aligned, partially aligned, or slightly aligned. For each action and decision step, if the step was only included by one SME, it was identified as being "slightly aligned" then the number "1" was added in a separate column. If an

action or decision step was described by two of the three SMEs, then the number was "2" was added in the column indicating that the step was "partially aligned." If an action or decision step was described by all three SMEs the number was "3" was added in the column indicating the step was "highly aligned." Table 4 shows the results of this analysis.

Table 4

Number and Percentage of Action and Decision Steps that are Highly Aligned, Partially Aligned, and Slightly Aligned

	Number	Percentage
Highly Aligned	15	7.69%
Partially Aligned	44	22.56%
Slightly Aligned	136	69.74%

Collectively the SMEs were "highly aligned" on 15 total or 7.69%, "partially aligned" on 44 total or 22.56%, and "slightly aligned" on 136 or 69.74% of action and decision steps. The implications of these differences are discussed in Chapter 5.

Question 2

What percentage of actions and/or decision steps, when compared to a gold standard, do expert principals omit when they describe how they conduct informal classroom walk-throughs and provide feedback to teachers?

Total knowledge omissions. To answer Question 2, the Microsoft Excel spreadsheet for analysis of the percentage of action and decision step captured was also used to determine the number of action and decision steps omitted by the individual SMEs when describing the informal classroom walk-through process and providing teachers feedback. Action and decision steps which were included in the gold standard protocol but omitted by the SME were marked

"0." The total number of action and decision steps omitted was added and divided by the total number of cumulative action and decision steps for all SMEs in the gold standard protocol which produced a percentage of knowledge omissions for action and decision steps and total steps. As shown in Table 5, SMEs omitted a significant number of action and decision steps. Between 48.98% and 58.16% of total action and decision steps were omitted. Table 5 provides a comparison of action and decision steps omitted by each SME when compared to the gold standard protocol including the range and standard deviation.

Table 5

Total Action and Decision Steps, or Expert Knowledge, Omissions by SME when Compared to the Gold Standard Protocol

	Steps Omitted					
	Total Action & Decision Steps Omitted	%	Action Steps Omitted	%	Decision Steps Omitted	%
SME A	114	58.16%	70	66.67%	44	48.35%
SME B	112	57.14%	56	53.33%	56	61.54%
SME C	96	48.94%	47	44.76%	49	53.85%
Mean Omissions	107.34	54.76%	57.67	54.92%	49.67	54.58%
Range	18		23		12	
SD	8.06		9.46		4.92	

Note. Total non-repeating action and decision steps from the CTA process represented in the gold standard protocol: action and decision steps – 196; action steps – 105; decision steps 91.

Across all SMEs, the percentage of expert omissions when describing how to conduct informal classroom walk-throughs and provide feedback to teachers was on average: 107.34 average total action and decision steps omitted, or 54.76% (SD ± 8.06); 57.67 average total

action steps omitted, or 54.92% (SD ± 9.46); and 49.67 average total decision steps omitted, or 54.58% (SD ± 4.92).

Individually, the percentage of both action and decision step omissions, or expert knowledge omissions, varied moderately among the SMEs when compared to the gold standard protocol, from 48.94% to 58.16%. However, the percentage of action and decision steps when compared individually to the gold standard protocol varied significantly among the SMEs from: 44.76% to 66.67% for action steps; and 48.35% to 61.54% for decision steps.

Analysis of action and decision step omissions. Figure 4 represents the action and decision step omissions, or expert knowledge omissions, data for SME A, SME B, and SME C when compared to the cumulative gold standard protocol.

Figure 4

Total SME Knowledge Omissions when Compared to the Gold Standard Protocol

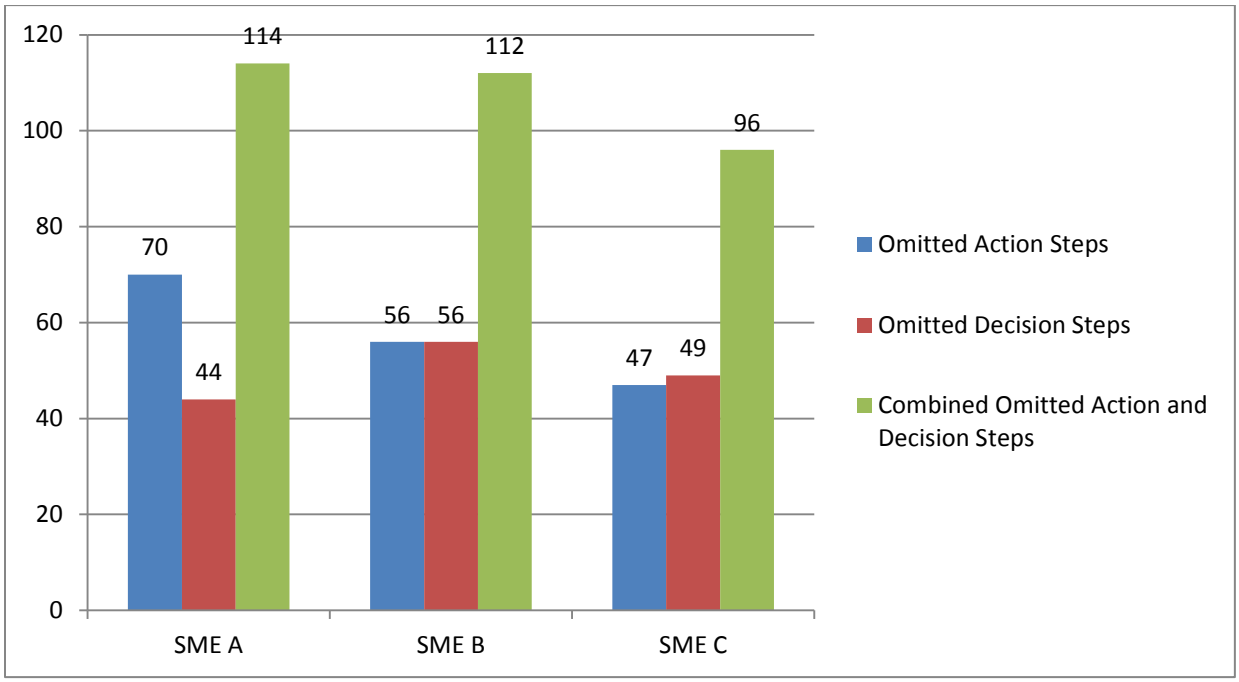

Figure 4. Total non-repeating action and decision steps from the CTA process represented in the gold standard protocol: action and decision steps – 196; action steps – 105; decision steps 91.

The next chapter will include an overview of the study, a discussion of the findings, limitations, implications, and future research.

CHAPTER FIVE: DISCUSSION

Overview of Study

The primary purpose of this study was to capture the knowledge and skills expert kindergarten through twelfth grade principals use to conduct informal classroom walk-throughs and provide feedback to teachers. This study also sought to identify the critical knowledge and skills omissions by expert principals when they describe the process of conducting informal classroom walk-through observations and providing teachers feedback when compared to a gold standard protocol. Research has shown that when experts communicate the knowledge and skills they use to conduct complex tasks, they may omit up to 70% of the critical information novices need to replicate the activity though experts can perform these complex tasks automatically and without conscious thought (Clark, 2014; Clark et al., 2008; Clark & Feldon, 2006). Automaticity is a key characteristic and consequence of expertise, and has been referred to as a "double-edged sword" (Feldon, 2007).

Consultants, who are deemed experts in the field, often train principals in the complex task of informal classroom walk-throughs and providing feedback to teachers. Although these consultants had the advantage of expertise acquired over time, unfortunately, these consultants may be disadvantaged by the 70% rule as a result of the effects of expertise and automaticity when recalling critical knowledge and skills. Nonetheless, training principals to conduct this complex task with expert skill has been demonstrated as an ongoing need (Donaldson, 2009; Hallinger, 2007; Ho and Kane, 2013; May et al., 2012). Although CTA has been used effectively to elicit and capture expert knowledge across a number of disciplines (Clark, 2014), this is the first study to use CTA to elicit and capture expert principals' knowledge and skills as they exercise instructional leadership when conducting informal classroom walk-throughs and providing feedback to teachers. The expert knowledge and skills captured through this CTA

study may provide valuable input to help design more effective professional development programs for both aspiring and in-service principals than those currently provided, which are often based on behavioral task-analysis and experts' self-reports (Clark et al., 2008; Feldon & Yates, 2011).

Process of Conducting Cognitive Task Analysis

Selection of Experts

The literature related to the selection of experts from whom knowledge and skills are captured through CTA recommends the use of three to five experts before diminishing marginal returns set-in. The investment of time and effort in conducting a CTA study with more than three to four experts yields less than 10% additional action and decision steps (Bartholio, 2010; Chao & Salvendy, 1994). Replicating the methods of Chao and Salvendy, Crispen (2010) also found that it takes three to five experts to yield an acceptable amount of expert knowledge to create a gold standard protocol that can be used for training purposes, thus reversing the 70% rule (Clark & Feldon, 2006). In addition to the number of experts, the identification of experts that were selected for this CTA study was another critical element.

The selection criteria for a subject matter experts in a CTA study includes four key criteria identified in the literature as: (a) three to five years of consistent success in performing the task to be studied; (b) recent expert performance of the task as recognized by colleagues in the field; (c) history of expert performance of the task in a wide variety of settings; and (d) not having provided instruction to others on the performance of the task within the past year or longer (Clark, 2014; Clark et al., 2008; Flynn, 2012). The SMEs selected for this study met the criteria as described in the CTA literature above, however identifying the SMEs proved challenging.

There are at least 18 different documented models for informal classroom walk-throughs (Kachur et al., 2010), however, there is no standardized "best practice" or evaluation tool that scores or rates principals to determine their effectiveness when they conduct classroom walk-throughs and provide feedback to teachers. As such, the researcher did not have any success in contacting school districts or county offices of education for names of experts in performing this task. As an alternative path for identifying experts, the researcher contacted a consultant who for the past 10 years has provided on-site coaching and observation of principals when conducting informal classroom walk-throughs and providing feedback to teachers. The consultant has worked with over 50 school districts in three states and with approximately 1,200 administrators walking through more than 5,000 classrooms. This consultant provided the researcher with a list of eight potential SMEs for participation in the study and ultimately four responded to an invitation from the researcher and agreed to participate in this CTA study. The SMEs who responded represent schools with students enrolled from kindergarten through twelfth grade, with diverse student populations, and with a track record of student achievement based on the annual state assessments, which are posted on the state's department of education website.

Identifying experts and the characteristics of expertise for teachers and principals is difficult. The difficulty lies in not only the characteristics of expertise but also in how expertise is developed in teaching (Berliner, 1986, 1988; Bullough & Baughman, 1995; Smith & Strahan, 2004; Sternberg & Horvath, 1995). Studies of teaching expertise have focused on comparisons of novice teachers with "expert" teachers, on teaching expertise based on experimental or simulated tasks as opposed to real classrooms, on equating experience with expertise, on checklists or tables of expert behavior and rating expertise based on the number of identified "characteristics," and on student assessment outcomes (Smith & Strahan, 2001). However, in

the end these approaches have done little to help determine expertise in teaching (Sternberg & Horvath, 1995) and the complexities related to "expert" school principals have not been addressed in the research at this point. As seen in the section that follows, the difficulty of identifying expertise and how to develop it has been an issue for other professions as well.

For example, determining expertise in psychotherapy has proven "elusive" due to the unpredictable nature of the outcomes and the limited amount of quality feedback provided to psychotherapists. Expertise for psychotherapists, much like teachers and school principals, is based on reputation, performance, and client outcomes (Tracey, Wampold, Lichtenberg, & Goodyear, 2014). Tracey et al. explain measuring expertise through reputation is based on peer nomination or degree attainment; performance is difficult to define and quantify in order to distinguish "expertise from competence;" and client outcomes are not only dependent upon the psychotherapist's skills but also the patient's willingness and motivation to participate in treatment. "Instruction is the instructor's manipulation of the learner's environment in order to foster learning" (Mayer, 2011, p. 53). Using this definition, psychotherapists, teachers, and school principals all provide instruction with the goal of changing a learner's environment to foster learning but the challenge remains identifying expertise during this instructional process.

Future studies may consider the suggestion by Tracey et al. (2014) for an approach to identify expertise in psychotherapy which could similarly be used for the identification of expertise in teachers and school principals described as the "disconfirmatory approach." In this approach expertise is identified by determining which knowledge, skills, and characteristics would be present if one were an expert and seeking disconfirming information to determine the expert status of a practitioner (Tracey et al., 2014).

Collection of Data

The data were collected for this study by conducting semi-structured interviews with three of the four SMEs who participated in this study. The interview method is referred to as 3i + 3r in the research literature which stands for three independent interviews and three reviews of the data collected. The 3i + 3r method has been shown as an effective way to capture expert knowledge to inform instructional design and the development of related instructional materials (Clark et al., 2008; Zepeda-McZeal, 2014). The initial and follow-up interviews with the three SMEs took over two hours each to complete, resulting in each SME dedicating at least four hours of time and mental effort to this CTA process. Despite the commitment of time and mental effort, each SME fully participated in the process. The time and mental effort expended by the SMEs refutes the recommendations of Canillas (2010) who calls for using a separate group of SMEs for review of the initial protocol because the initial group of interviewed SMEs in her study demonstrated difficulty committing the time and sustained mental effort necessary to review the initial individual protocols. Additionally, the methodology of this CTA study calls for the researcher to serve as a knowledge analyst who must code, organize, and interpret the data captured from the SME. Therefore, the researcher must review each step individually in the initial individual protocol with each SME to ensure that the expert knowledge and skills are accurately represented,, thereby making the recommendations of Canillas (2010) further inappropriate for this CTA study and other CTA studies using similar methodology.

During the semi-structured interview process, the SMEs began by identifying the main or primary procedures or steps of an informal classroom walk-through and providing teachers feedback. This was followed by the SMEs then providing the individual steps within each main or primary procedure. Each of the three SMEs began by explaining how they walk into the

classroom through the door and begin to conduct an informal classroom walk-through. Individually, the SMEs appeared to recall the steps in the process of conducting an informal classroom walk-through and providing teachers feedback as if they were actually in the classroom at that moment. During the CTA interviews, each SME stopped at one point during the interview due to the realization that the knowledge and skills they were describing didn't actually occur at that time but in an earlier previously unidentified main or primary procedure or step that the SME now needed to add. A possible explanation of this may be found in Anderson's (1996b) model for the acquisition of automated knowledge. It may be that when the SMEs recalled knowledge and skills which were affected by their automated and unconscious knowledge (the third stage of automaticity), the process triggered the less automated and more conscious knowledge recall (associative or knowledge compilation stage). The associative or knowledge compilation stage of automaticity enabled the SMEs to correct procedural errors by applying declarative knowledge to procedural tasks (Anderson, 1996b).

Another possible explanation may be found in the method for conducting the CTA. A CTA study by Crandall and Getchell-Reiter (1993) captured the expert knowledge and skills neonatal intensive care unit (NICU) nurses used to identify and diagnose early sepsis in newborns. The NICU nurses' expert knowledge and skills were captured by "being in the moment" through the use of the Critical Decision Method (CDM). The CDM is a CTA method in which experts recall, often an extended period of time after a critical event, the critical decisions that they made during incidents which usually involve life or property (Klein, Calderwood, & MacGregor, 1989). The NICU nurses were able to recall a greater number of critical sepsis assessment techniques than were being used in the current NICU nurse pre-service sepsis assessment training (Crandall & Getchell-Reiter, 1993). Due to the NICU nurses placing

themselves "in the moment" of providing care to a newborn suspected of having sepsis, additional knowledge and skills were captured by asking expert nurses to focus on goals, cues, contextual conditions, and place. It is possible that this same process occurred during the CTA interview process in the current study, which also incorporates elements of CDM.

Discussion of Findings

No formal hypotheses were developed for this research study. Rather the study was guided by two main research questions.

Question 1

What are the action and decision steps that expert principals recall when they describe how they conduct informal classroom walkthroughs and provide feedback to teachers?

Two of the three experts in this study described a greater number of action steps than decision steps. The recall of a greater number of action steps over decision steps indicates the impact of expertise upon knowledge recall. Expert knowledge becomes automated through repeated deliberate practice of complex tasks. Automaticity frees up experts' working memory to address novel tasks by transferring knowledge into the long-term memory making the execution of complex tasks unconscious but the capturing of critical action and decision steps difficult (Clark, 2014; Clark & Estes, 1996; Ericsson, 2004).

Action steps versus decision steps. As indicated in *Chapter Four: Results*, two SMEs (SME B and SME C) described 14 and 16 more action steps than decision steps. The tendency of experts to describe a greater number of actions than decision steps has been noted in other CTA studies (Canillas, 2010; Crispen, 2010; Embry, 2012; Tolano-Leveque, 2010; Zepeda-McZeal, 2014). However, SME A described 12 more decision steps than action steps. This was an unexpected result, so the researcher reviewed the interview transcript, recorded interview, and

data collected and organized into the initial individual protocol for SME A. One possible explanation for the higher number of decision steps than action steps for SME A is the seemingly more directive or "top-down" leadership style of SME A. In a research study by Harris (2004), the researcher examined the impact of distributed leadership upon school improvement and determined that not only with distributive leadership, but all forms of leadership, a principal takes either a "top-down" or "bottom-up" approach. Harris (2004) describes examples of successful "top-down" and "bottom-up" leadership which are dependent upon the leader, the school staff, and the specific situational context of the school. In this current study SME A was responsible for the initiation, implementation, and expectations related to conducting informal classroom walk-throughs and providing feedback to teachers. Due to this "top-down" approach to the informal classroom walk-through process there are fewer action steps and/or input required from teachers in the process. The task for SME A involves making decisions on what was observed and whether or not to provide feedback and in what form. In contrast, SME B and SME C demonstrate a more "bottom-up" approach to leadership that involves the teachers in the development of the implementation and expectations for informal classroom walk-throughs both initially and throughout the process which results in a greater number of action steps to involve the staff and develop consensus.

Additionally, SMEs B and C recalled more action than decision steps, indicating that subject matter experts have greater difficulty recalling the unobservable decisions made and find it easier to recall the observable and thereby more tangible tasks they perform. Clark (2014), in reviewing CTA studies related to healthcare, found that experts tend to recall more action steps because they form a "mental image" which is more easily recalled than decision steps which do not to create the same "mental images" as action steps.

As demonstrated in Table 2 in *Chapter Four: Results*, the total number of action and decision steps described by each SME increased with each interview (SME A - 82, SME B - 84, and SME C - 100). An explanation for this increase in the total number of action and decision steps may be the increase in interview skills of this researcher. By the third SME interview, this researcher had a higher degree of confidence with the CTA interview process and had a more intuitive sense of what type of follow-up questions to ask and when. The influences of practice upon the development of this researcher's expertise as a CTA researcher were being demonstrated through the process of conducting this CTA study.

Action and decision steps captured during the review of the initial individual protocols and preliminary gold standard protocol. As discussed in *Chapter Four: Results*, each SME described additional action and decision steps which were integrated into their initial individual protocols, as well as, additional action and decision steps which were described by the fourth SME who reviewed the preliminary gold standard protocol. After the researcher had analyzed the interview transcripts for each SME, the data were used to create an initial individual protocol for each SME. This initial individual protocol was then reviewed in an in-person meeting with each SME in which each action and decision step was reviewed individually in order and the SME was asked to make additions, modifications, and deletions while the researcher took notes. Based on the research of Zepeda-McZeal (2014), the reviews of the initial individual protocols were done in-person because Zepeda-McZeal found the in-person review increased the number of additional action and decision steps described by the SMEs due to the increased communication from the personal face-to-face interaction. The three SMEs that participated in the initial CTA process added between 3 to 31 additional action steps and 1 to 12 additional decision steps.

SME C added 31 additional action steps and 12 additional decision steps when reviewing the initial individual protocol; more additions than all of the other SMEs combined. This SME was one month from retirement at the time of the CTA interview and review, and one possible explanation of the number of additional action and decision steps may be the proximity of the CTA process to the retirement date for this SME. SME C, being near retirement, may have exerted greater mental effort to retrieve automated knowledge and skills from the long term memory in order to leave something behind for future principals who will need to learn the skill of informal classroom walk-throughs and providing feedback to teachers. Erikson (1987) and Erikson, Erikson, and Kivnick (1986) referred to eight stages of psychosocial development, which a person experiences during a lifetime. The seventh stage of psychosocial development is experienced during mid-life and is defined as generativity versus stagnation, or contributing something meaningful that will provide guidance and continuity to the next generation versus being unable to contribute to the next generation due to selfish pursuits or limited productivity (Erikson, 1987; Erikson et al., 1986). For SME C the development of the individual protocol may have served as a "generativity script" that enabled SME C to make meaning of a long educational career and construct a product to help future generations of educators and specifically school administrators (McAdams, de St. Aubin, & Logan, 1993). Future research could identify if the amount of expert knowledge captured from SMEs nearing retirement, or in Erikson's generativity versus stagnation stage of psychosocial development, is greater than that for experts who are still in the midst of their career and an earlier stage of Erikson's psychosocial development.

A fourth SME, SME D, was asked to review the preliminary gold standard generated from the protocols of the previous three SMEs. SME D had not participated in any of the earlier

stages of the CTA process, so SME D was the only SME who was emailed the initial gold standard protocol in advance to allow time to review protocol. SME D was asked in the email to make additions, modifications, and deletions to the initial gold standard protocol in advance prior to the in-person meeting with the researcher. At the onset of the in-person meeting to review the initial gold standard protocol SME D said, "I have had over 60 hours of training on informal walk-throughs and have conducted hundreds of classroom walk-throughs on my own, but I have never seen such a complete and detailed explanation of the process." As indicated in Table 3 in *Chapter Four: Results*, SME D contributed two additional decision steps to the gold standard protocol. It may be that the extensive number of steps generated by the previous three SMEs caused SME D to experience cognitive overload (Sweller, 1988). Due to the mental effort involved in reviewing the initial gold standard protocol and not having participated in the CTA semi-structured interview process, it was likely difficult for SME D to commit the sustained mental effort required to both fully capture the depth of expert knowledge and then make substantial additions, modifications, and deletions to the initial gold standard protocol without the advantage of having participated in the entire CTA process.

Use of multiple experts. As previously noted in the literature (Bartholio, 2010; Crispen, 2010; Chao & Salvendy, 1994), it is recommended that multiple experts be used to capture a more accurate representation of the action and decision steps required to perform a task. In this study, as the data shows only 7.69% of action and decision steps were identified by all three SMEs, thus being "highly aligned;" 22.56 % were in "partial alignment," indicating that two SMEs described the action or decision step; and 69.74% were only "slightly aligned," meaning only one SME included that action or decision step. These data shows the importance of using more than one expert to capture expertise. As such, current methods of using one expert to teach

aspiring and current administrators the instructional leadership practice of conducting informal classroom walk-throughs and providing feedback to teacher is certain to omit crucial expert knowledge that school administrators will need to perform this task. Instruction based on of results CTA will help administrators who are new to this task to be more successful.

Question 2

What percentage of actions and/or decision steps, when compared to a gold standard, do expert principals omit when they describe how they conduct informal classroom walk-throughs and provide feedback to teachers?

Expert knowledge omissions. The final gold standard protocol was compared to each SME's individual protocol to determine expert knowledge and skills omissions, derived from omissions of action and decision steps, for the task of informal classroom walk-throughs and providing feedback to teachers. Experts, who are impacted by the effects of automaticity, may omit up to 70% of critical action and decision steps when asked to describe complex tasks in their area of expertise (Feldon, 2004; Clark & Feldon, 2006).

When SMEs were asked to describe the critical action and decision steps for informal walk-throughs and providing feedback to teachers, on average SMEs omitted 54.76%, ranging between 48.98% and 58.16%, of action and decision steps as compared to the gold standard protocol. SMEs on average omitted 54.2% of action steps, ranging between 44.76% and 66.67%; and omitted 54.58% of decision steps, ranging between 48.35% and 61.54%. The total aggregate number of captured action steps was greater than the total aggregate number of captured decision steps, however the difference between the average percentage of total omitted action and decision steps was only .34%, indicating no significant difference in the omission of action and decision steps. These findings are contrary to the findings of Canillas (2010) and

Tolano-Levenque (2010) who found greater omissions in decision steps than action steps in their study of medical procedures. As Hoffman (1987) noted, it may be that the nature of the task itself, in particular, the complexity and length of time required to perform the task may influence the number of action and decision steps captured with CTA. Zepeda-McZeal (2014) also observed that the complexity of the task and time required to complete the task may influence the CTA knowledge elicitation techniques which used to conduct a CTA study.

Limitations

The present study produced findings which are consistent with findings of previous CTA research studies related to expert knowledge captured in the form of action and decision steps and expert knowledge omissions. The next section will discuss the limitations of the present study.

Confirmation Bias

The first limitation of this present study is the researcher has 12 years of experience as a school principal and district human resources administrator. This background and experience required the researcher to be cognizant of researcher bias when conducting this CTA research study. When a CTA analyst has experience in a task domain, the analyst has a natural tendency to edit the knowledge captured from SMEs to align with the analyst's own experiences (Clark, 2014). The knowledge analyst had knowledge of the task domain and participated in minimal bootstrapping (Schraagen et al., 2000), however extra effort was required by the researcher to not place his own preexisting expectations and experiences onto the data collected by constantly being mindful of not placing the researcher's own background and experiences onto the data collected from each SME.

Internal Validity

The second limitation of this present study is the results of this CTA have not been validated against the actual practice of the SMEs. To ensure internal validity, the gold standard protocol developed for informal classroom walk-throughs and providing feedback to teachers would need to be validated against the actual practice of the SMEs when they perform this task. The expert knowledge and skills would be validated through direct observation as they were performed by the SMEs, ensuring internal validity of the data captured in the gold standard protocol. The scope of this study did not include the validation of the gold standard protocol by observed, however this would be an appropriate study for future research.

External Validity

Another limitation of the present study is the threat to generalizability due to the limited sample size of four SMEs and the domain specificity of kindergarten through twelfth grade principals in the Southern California area. The principals interviewed for this study included two elementary principals, one middle school principal, and one high school principal with a range of students identified as English Language Learners and who participated in the Free and Reduced Lunch Program. Further CTA studies in the same domain which include a greater number and variety of SMEs would help to increase the generalizability and external validity of the current study.

The final limitation of the present study that affects generalizability is the reliance on one consultant's opinion for the recommendation of experts. Generalizability could have been increased by identifying experts from a greater number of sources.

Implications

Across a variety of domains CTA has been demonstrated to be an effective means of capturing expert declarative and procedural knowledge required for the performance of complex tasks (Canillas, 2010; Embry, 2012; Tolano-Leveque, 2010; Zepeda-McZeal, 2014). The declarative and procedural knowledge captured from CTA research when applied to training and instruction increases novice performance and decreases the amount of time and expense required for training. Much of the training for novice and in-service principals in complex tasks such as classroom walk-throughs and providing feedback to teachers is conducted by consultants, serving as experts, who may omit up to 70% of the critical information novices need to replicate complex tasks and activities (Clark, 2014; Clark et al., 2008; Clark & Feldon, 2006). The current study supports the use of CTA research to capture expert knowledge and skills in complex instructional leadership tasks, such as informal classroom walk-throughs and providing feedback to teachers, for not only training and instruction but to ultimately increase student achievement.

Future Research

The use of CTA research and CTA-based instruction for pre-service and in-service training of principals is unknown and a search of the research did not result in any studies in this area. As a result of this study, future research may consider taking the gold standard protocol generated by this research and implementing a randomized experimental design study with principals who are novices to informal classroom walk-throughs and providing feedback to teachers. The randomized experimental study would analyze learning gains from using CTA-guided instruction as compared to traditional instructional methods. Longitudinal research may

also provide useful data regarding the short-term and long-term learning gains resulting from expert implementation of informal classroom walk-throughs and providing feedback to teachers.

Based upon the findings of this study and the findings of Zepeda-McZeal (2014), future research is needed to determine which CTA methods result in a fewer omissions of decision steps than action steps in complex and time intensive K-12 instructionally related tasks. Yates (2007) and Yates and Feldon (2011) suggested different CTA methods may be appropriate to elicit different knowledge types. Other CTA based studies in non K-12 educational task domains, such as Canillas (2010) and Tolano-Leveque (2010) in medical procedures, have shown the opposite tendency as experts in that domain omit fewer actions steps than decision steps. Additional studies related to K-12 instructional practices will be required to determine the overall effectiveness of CTA for capturing key action and decision steps in complex and time intensive instructional tasks.

Identifying SMEs to participate in CTA studies on instructional and instructional leadership tasks is difficult due to the lack of standardized non-biased assessments or metrics. The SMEs were selected to participate in this CTA study based on their professional reputation, their performance as rated by colleagues in their domain, and student assessment results. Tracy et al. (2014), in looking for ways to determine expertise in psychotherapy, called for the use of a "disconfirmatory approach;" which determines expertise by identifying knowledge, skills, and characteristics which would be present if one were an expert and then seeks disconfirming information to determine the expert status of a practitioner. Future research may examine the use of a "disconfirmatory approach" to identify SMEs for CTA studies.

The data collected as part of this study may have been influenced by the leadership styles of the SMEs who participated in this CTA research. Specifically, a more "top-down" orientation

towards leadership may have resulted in a SME describing more decision steps than action steps, whereas a more "bottom-up" leadership style may have led a SME to describe a greater number of action steps than decision steps. If feasible, future research which examines the impact of an individual's leadership style upon the capturing of expert knowledge and skills would be needed to explore this area.

Additionally, it may be that an individual's stage of Psychosocial Development as defined by Erikson (1987) and Erikson et al. (1986) affect the amount of expert knowledge and skills which are captured using CTA methodology. Specifically, in the present study Erikson's Generativity versus Stagnation stage of Psychosocial Development may have resulted in the capturing of a greater amount of expert knowledge and skills from one specific SME who may have been negotiating the Psychosocial Development Stage. However, further research would be needed to establish a relationship between a SME's Psychosocial Development Stage and the amount of expert knowledge and skills described by the SME.

Conclusion

The purpose of this study was to add to the body of research about the benefits of CTA for capturing more complete descriptions of the knowledge and skills that experts use when solving difficult problems and performing complex tasks and the omissions experts make when describing their knowledge and skills. The complex task of capturing the expert knowledge and skills that K-12 principals use when performing informal classroom walk-throughs and providing feedback to teachers is the first of its kind, however there are other similar studies that examine the knowledge and skills captured and omitted by experts through CTA methods. As found in other similar studies, expert principals in this study omitted nearly 70% of the critical action and decision steps when describing how to perform informal classroom walk-throughs and provide

feedback to teachers. However, the result of this study show that CTA methods can be useful to capture the unconscious, automated knowledge of expert principals when they perform the complex task of informal classroom walk-throughs and provide feedback to teachers.

Meta-analyses conducted by Marzano et al. (2005) have clearly demonstrated the correlation between effective instructional leadership practices by a school principal and up to a 10% increase in student achievement gains. The expert knowledge captured and accumulated into a gold standard protocol in this study may be used to train pre-service and in-service principals in performing the complex instructional leadership task of informal walk-throughs and providing feedback to teachers, which may ultimately improve teachers' classroom instruction and student achievement.

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Appendix A
Cognitive Task Analysis Interview Protocol

Begin the Interview: Meet the Subject Matter Expert (SME) and explain the purpose of the interview. Ask the SME for permission to record the interview. Explain to the SME the recording will be only used to ensure that you do not miss any of the information the SME provides.

Name of task(s): How to conduct informal classroom walk-throughs and provide feedback to teachers.

Performance Objective:
Ask*: "What is the objective of informal classroom walk-throughs and providing feedback to teachers? What action verb should be used?"*

Step 1:
Objective: Capture a complete list of outcomes for informal classroom walk-throughs and providing feedback to teachers.

A. *Ask the Subject Matter Expert (SME) to list outcomes when the task is complete. Ask them to make the list as complete as possible*
B. *How are the outcomes assessed?*

Step 2:
Objective: Provide practice exercises that are authentic to the teaching context in which the tasks are performed.

A. *Ask the SME to list all the contexts in which these tasks are performed (i.e., primary, middle school, high school, English language arts, math, science, social studies, special ed., ELD, etc.).*
B. *Ask the SME how the tasks would change for each teaching context.*

Step 3:
Objective: Identify main steps or stages to accomplish the task.

A. *Ask SME the key steps or stages required to accomplish the task.*
B. *Ask SME to arrange the list of main steps in the order they are performed, or if there is no order, from easiest to difficult.*

Step 4:
Objective: Capture a list of "step by step" actions and decisions for each task.

A. *Ask the SME to list the sequence of actions and decisions necessary to complete the task and/or solve the problem.*
B. Ask*: "Please describe how you accomplish this task step-by-step, so a novice could perform it."*

For each step the SME gives you, ask yourself, "Is there a decision being made by the SME here?" If there is a possible decision, ask the SME if there is a decision being made.

If SME indicates that a decision must be made…

Ask*: "Please describe the most common alternatives (up to a maximum of three) that must be considered to make the decision and the criteria trainees should use to decide between the alternatives".*

Step 5:

Objective: Identify prior knowledge and information required to perform the task

A. Ask SME about the prerequisite knowledge and other information required to perform the task.

1. Ask the SME about Cues and Conditions

Ask: "*For this task,* w*hat must happen before someone starts the task? What prior task, permission, order, or other initiating event must happen? Who decides?"*

2. Ask the SME about New Concepts and Processes

Ask*: "Are there any concepts or terms required for this task that may be new to the novice?"*

Concepts – terms mentioned by the SME that may be new to the novice.

Ask for a definition and at least one example

Processes - How something works

Where do informal classroom walkthroughs and providing teachers with feedback fit within a larger process? If the novice needs to understand a component of a larger process, then prompt the SME *"Processes usually consist of different phases and within each phase, there are different activities – think of it as a flow chart."*

Ask*: "Must novices know this process to do the task?" "Will they have to use it to change the task in unexpected ways?"*

IF the answer is NO, do NOT collect information about the process.

3. Ask the SME about Equipment and Materials

Ask*: "What equipment and materials are required to succeed at this task in routine situations? Where are they located? How are they accessed?*

4. Performance Standard

Ask*: "How do we know the objective has been met? What are the criteria, such as time, efficiency, quality indicators (if any)?"*

5. Sensory experiences required for the task

Ask*: "Must trainees see, hear, smell, feel, or taste something in order to learn any part of the task? For example, are there any parts of this task they could not perform unless they could see or hear something?"*

Step 6:

Objective: Identify problems that can be solved by using the procedure.

A. Ask the SME to describe at least one simple or routine problem and two to three complex problems that the trainee should be able to solve if they can perform each of the tasks on the list you just made.

Ask*: "Of the task we just discussed, describe at least one simple or routine problem and two to three complex problems that the trainee should be able to solve IF they learn to perform the task".*

Appendix B
Inter-rater Reliability Code Sheet for SME A

Inter-rater Reliability Code Sheet

CHAD HAMMITT — Main Coder

MEGAN EKNO — Secondary Coder

Code	Tally Total	Agree	Disagree	% Agreement (IRR)
O (Objective)	4	4		100%
C (Conditions/cues)	14	14		100%
M (Main Procedures)	10	10		100%
A (Action Step)	98	96	2	98%
D (Decision Step)	28	26	3	93%
S (Standards)	17	16	2	94%
E (Equipment)	12	12		100%
P (Pre-req know/skl)	8	7	1	88%
NCONC (New Concept)	43	43		100%
NPROS (New Process)	4	4		100%
NPRIN (New Principle)				—
SENSE (Sensory Info)	1		1	0%
REASON (Reasons)	18	18		100%
PROB (Problems)	8	7	1	88%
SAFE (Safety Factors)				—
REF (References)	8	8		100%
	323	313	10	97%

Appendix C
Job Aid for Developing a Gold Standard Protocol
Richard Clark and Kenneth Yates (2010, Proprietary)

The **goals** of this task are to 1) aggregate CTA protocols from multiple experts to create a "gold standard protocol" and 2) create a "best sequence" for each of the tasks and steps you have collected and the best description of each step for the design of training.

Trigger: After having completed interviews with all experts and capturing all goals, settings, triggers, and all action and decision steps from each expert – and after all experts have edited their own protocol.

Create a gold standard protocol

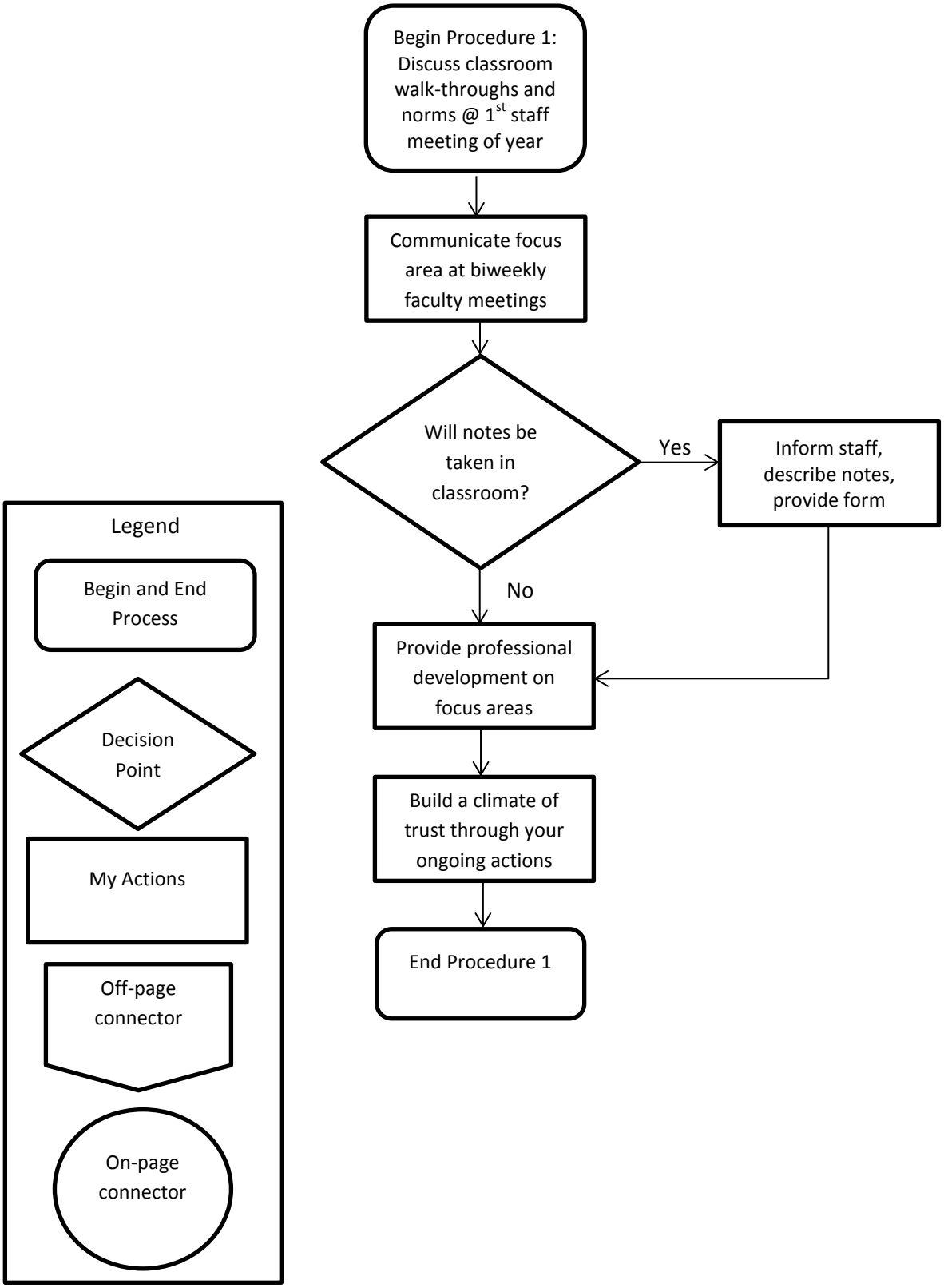
STEPS Actions and Decisions

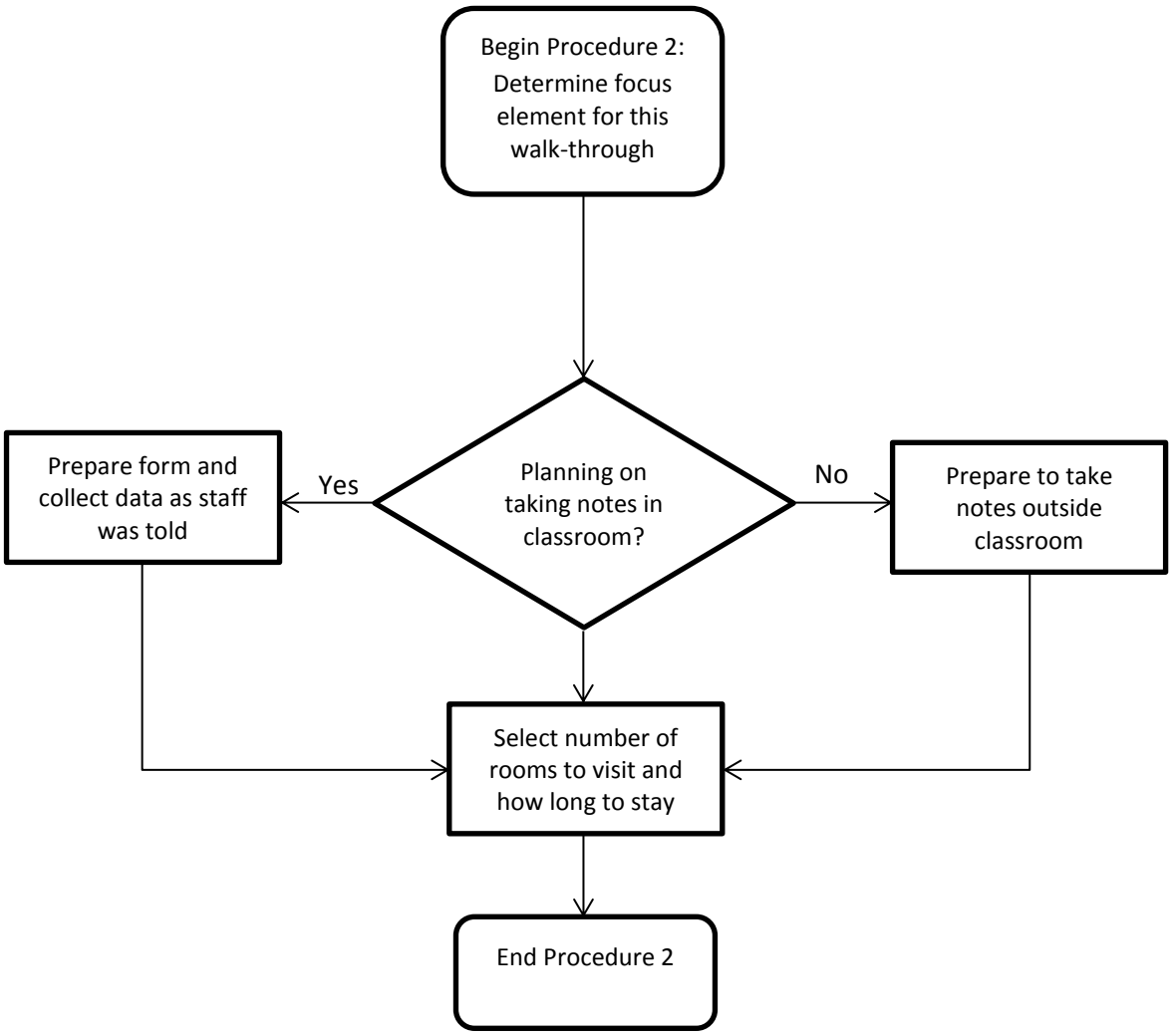
1. For each CTA protocol you are aggregating, ensure that the transcript line number is present for each action and decision step.
    a. If the number is not present, add it before going to Step 2.
2. Compare all the SME's corrected CTA protocols side-by-side and select one protocol (marked as P1) that meets all the following criteria:
    a. The protocol represents the most complete list of action and decision steps.
    b. The action and decision steps are written clearly and succinctly.
    c. The action and decision steps are the most accurate language and terminology.
3. Rank and mark the remaining CTA protocols as P2, P3, and so forth, according to the same criteria.
4. Starting with the first step, compare the action and decision steps of P2 with P1 and revise P1 as follows:
    a. IF the step in P2 has the same meaning as the step in P1, THEN add "(P2)" at the end of the step.
    b. IF the step in P2 is a more accurate or complete statement of the step in P1, THEN revise the step in P1 and add "(P1, P2)" at the end of the step.
    c. IF the step in P2 is missing from P1, THEN review the list of steps by adding the step to P1 and add "(P2N)"* at the end of the step.
5. Repeat Step 4 by comparing P3 with P1, and so forth for each protocol.
6. Repeat Steps 4 and 5 for the remaining components of the CTA report such as triggers, main procedures, equipment, standards, and concepts to create a "preliminary gold standard protocol" (PGSP).
7. Verify the PGSP by either:
    a. Asking a senior SME, who has not been interviewed for a CTA, to review the PGSP and note any additions, deletions, revisions, and comments.
    b. Asking each participating SME to review the PGSP, and either by hand or using MS Word Track Changes, note any additions, deletions, revisions, or comments.
        i. IF there is disagreement among the SMEs, THEN either
            1. Attempt to resolve the differences by communicating with the SMEs, OR

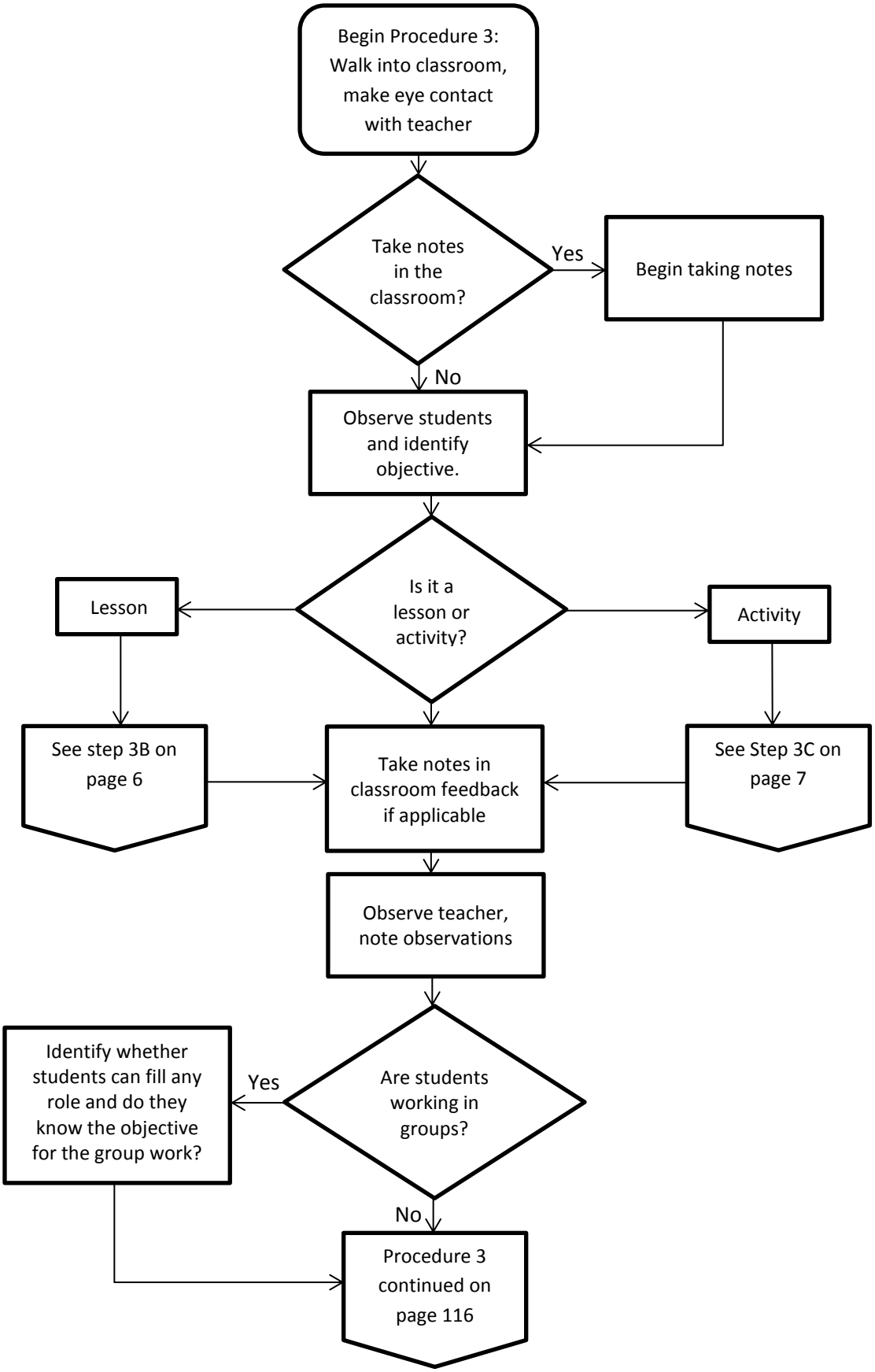
2. Ask a senior SME, who has not been interviewed for a CTA, to review and resolve the differences.

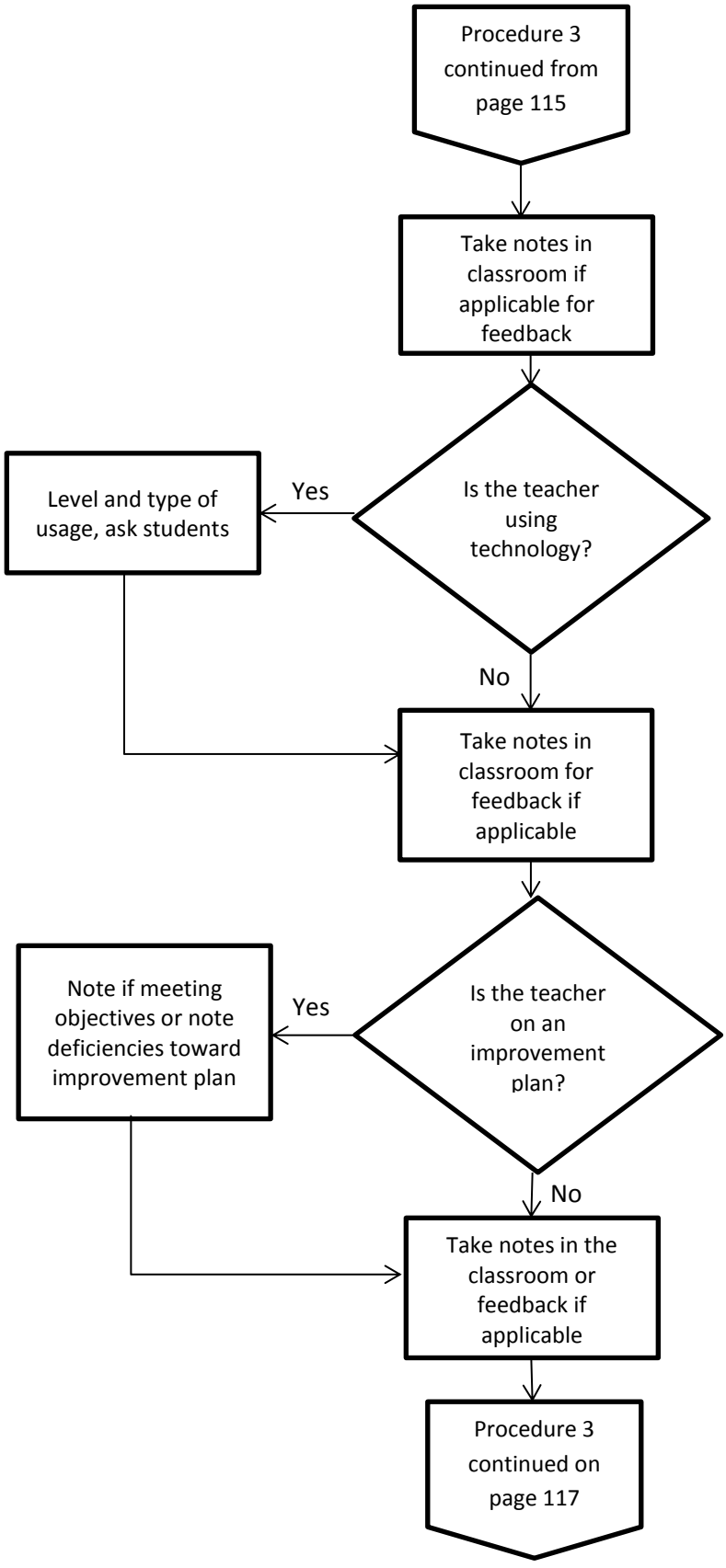
8. Incorporate the final revisions in the previous Step to create the "gold standard protocol" (GSP).

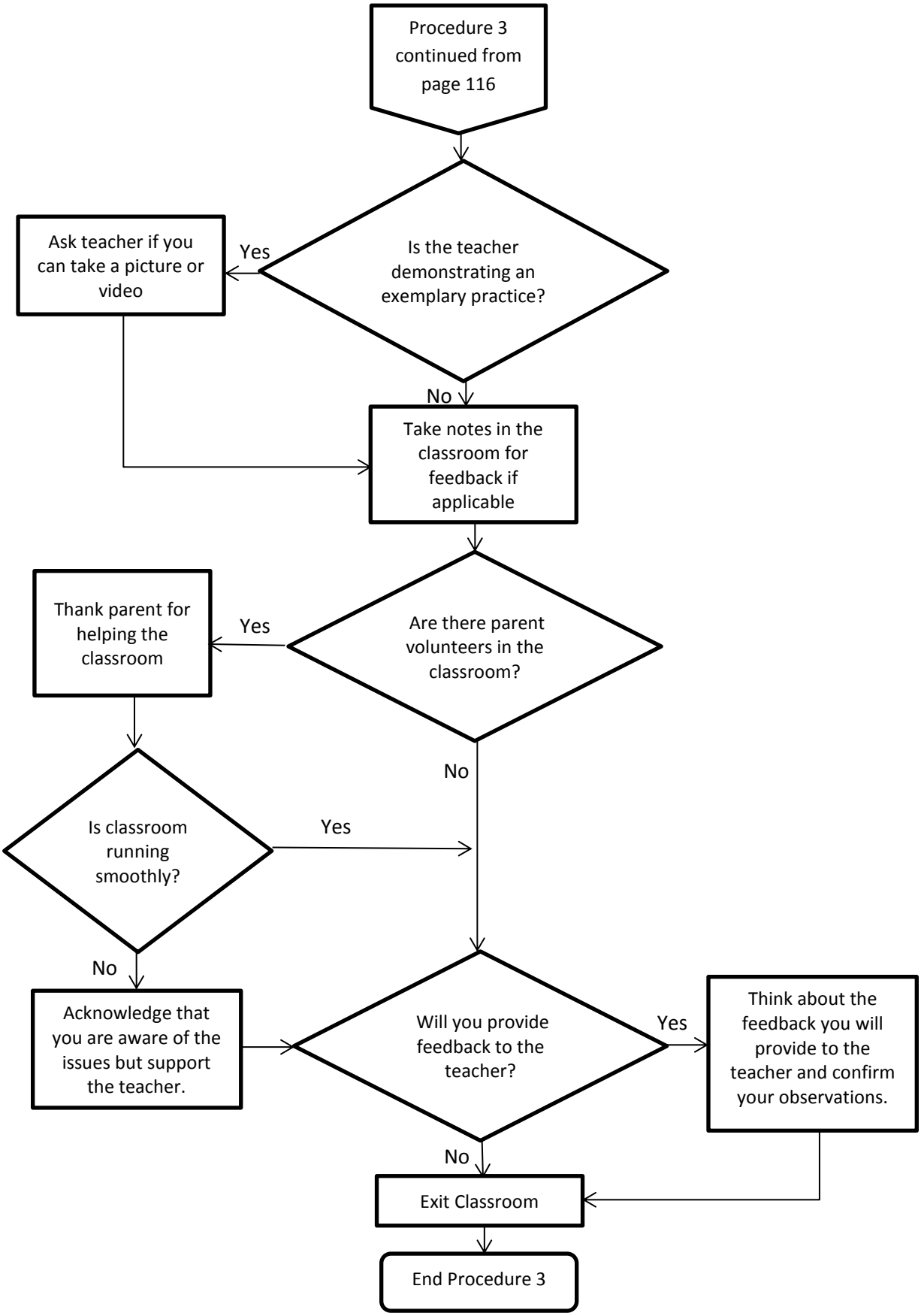
Appendix D
SME A Initial Individual Protocol Flowchart

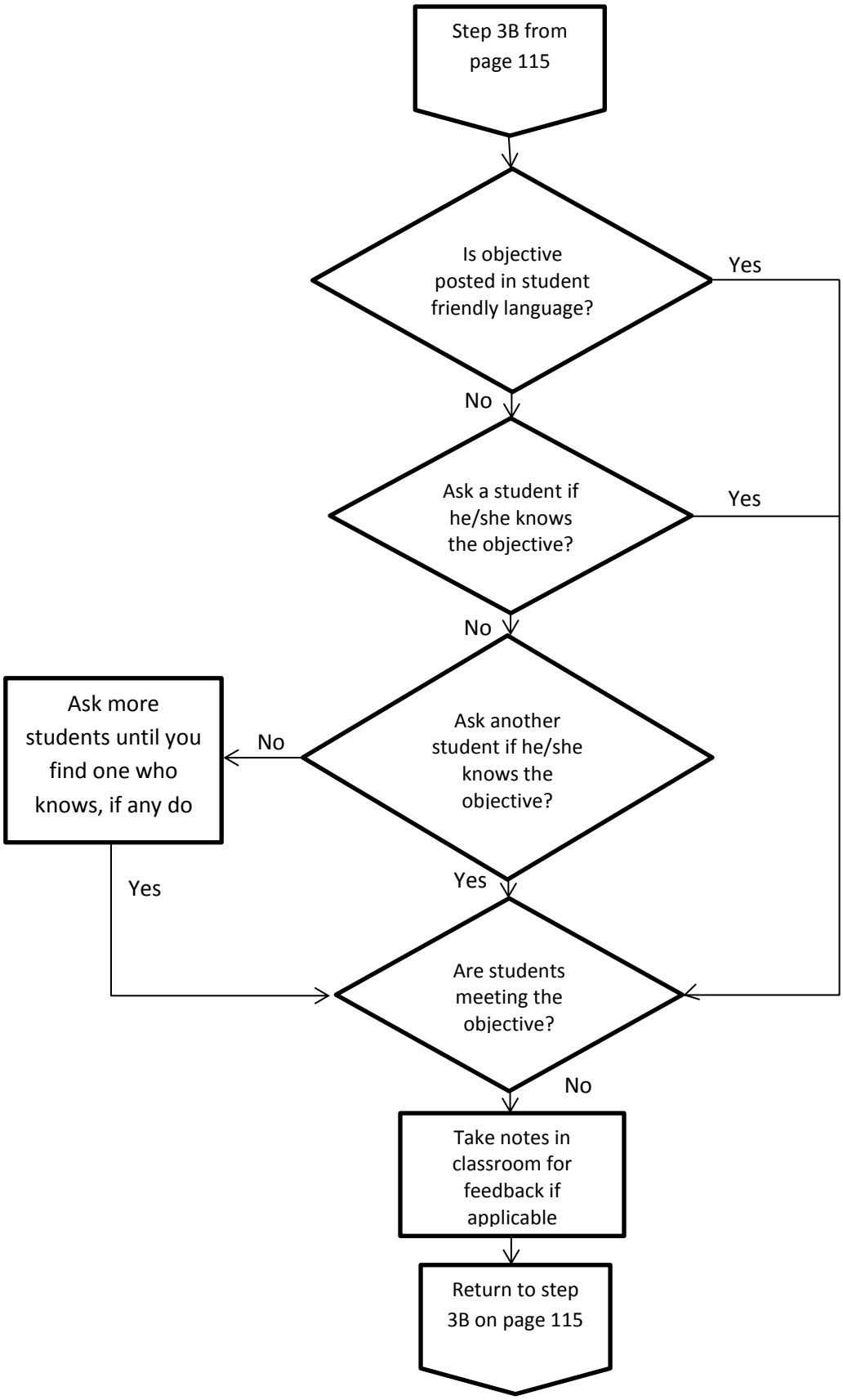


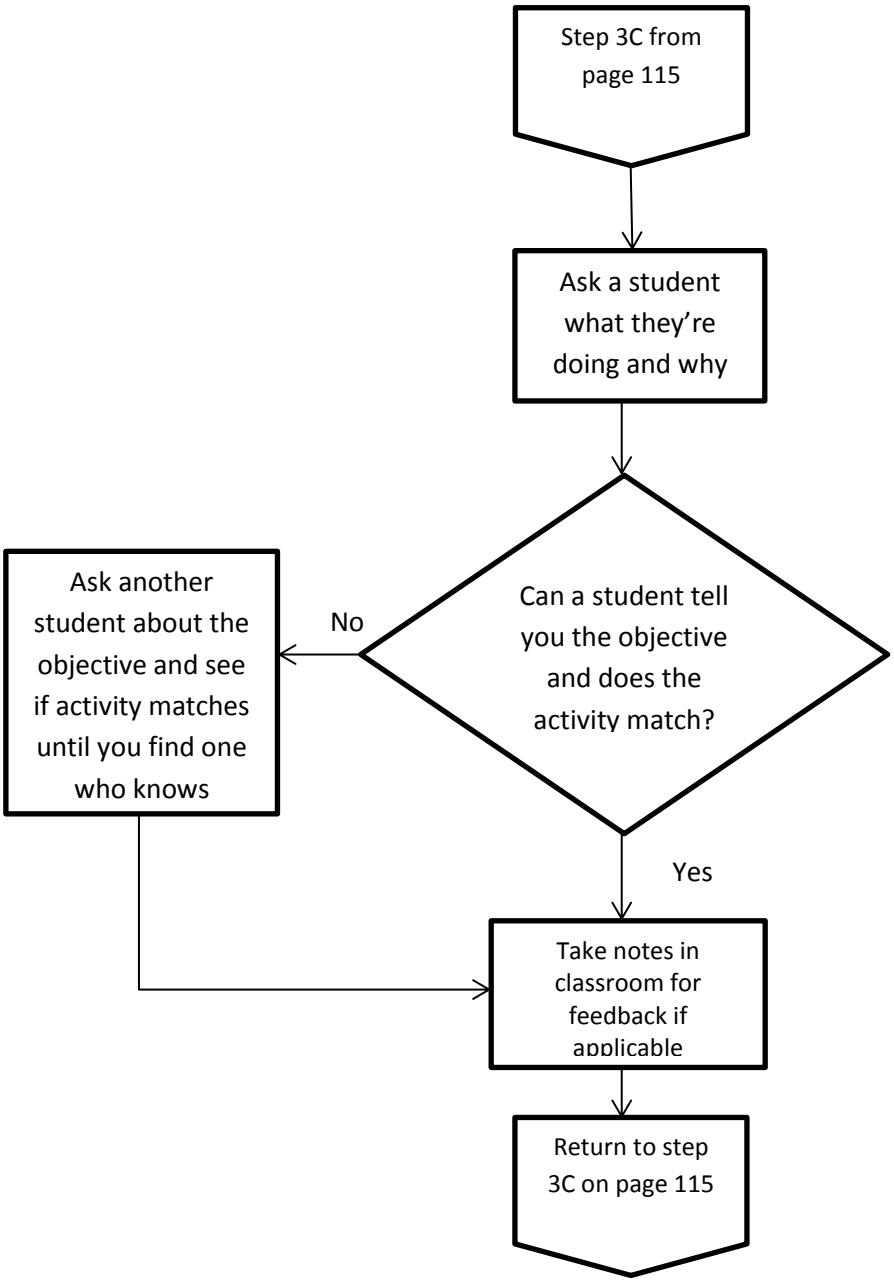

Begin Procedure 2: Determine focus element for this walk-through
Planning on taking notes in classroom?
Yes
No
Prepare form and collect data as staff was told
Prepare to take notes outside classroom
Select number of rooms to visit and how long to stay
End Procedure 2

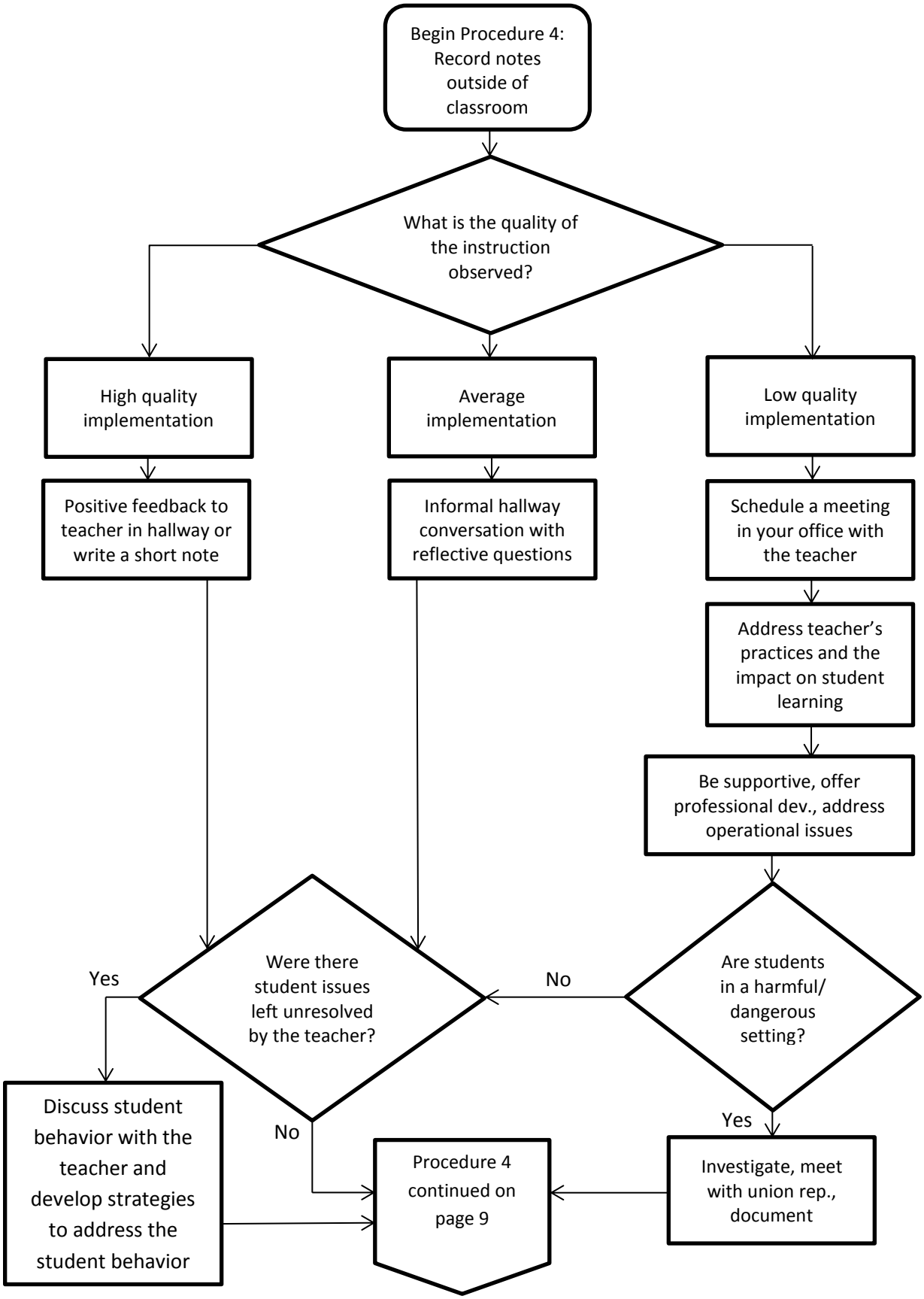

Begin Procedure 3: Walk into classroom, make eye contact with teacher
Take notes in the classroom?
Yes
Begin taking notes
No
Observe students and identify objective.
Is it a lesson or activity?
Lesson
Activity
See step 3B on page 6
Take notes in classroom feedback if applicable
See Step 3C on page 7
Observe teacher, note observations
Are students working in groups?
Yes
Identify whether students can fill any role and do they know the objective for the group work?
No
Procedure 3 continued on page 116

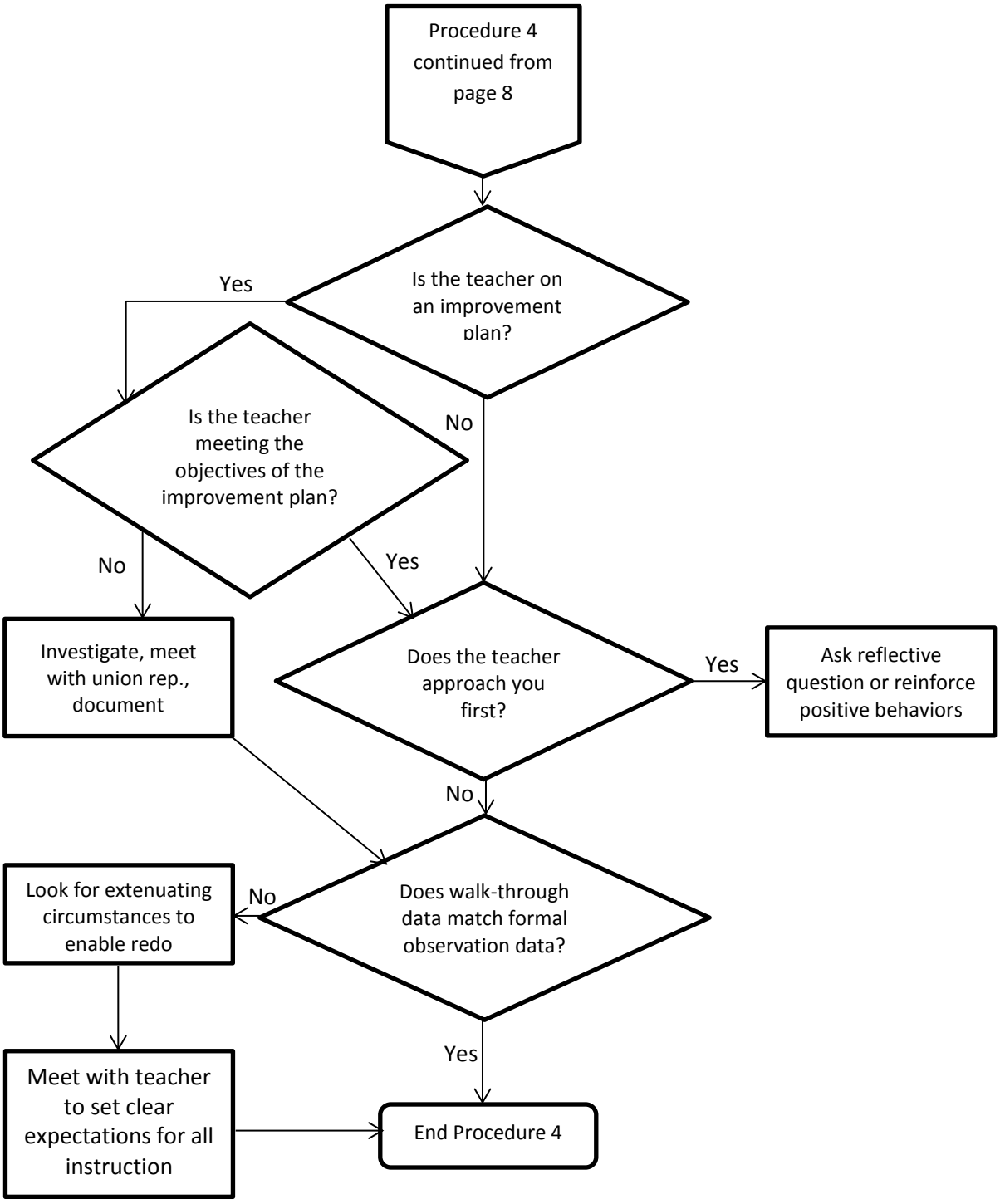

Procedure 3 continued from page 115
Take notes in classroom if applicable for feedback
Is the teacher using technology?
Yes
Level and type of usage, ask students
No
Take notes in classroom for feedback if applicable
Is the teacher on an improvement plan?
Yes
Note if meeting objectives or note deficiencies toward improvement plan
No
Take notes in the classroom or feedback if applicable
Procedure 3 continued on page 117

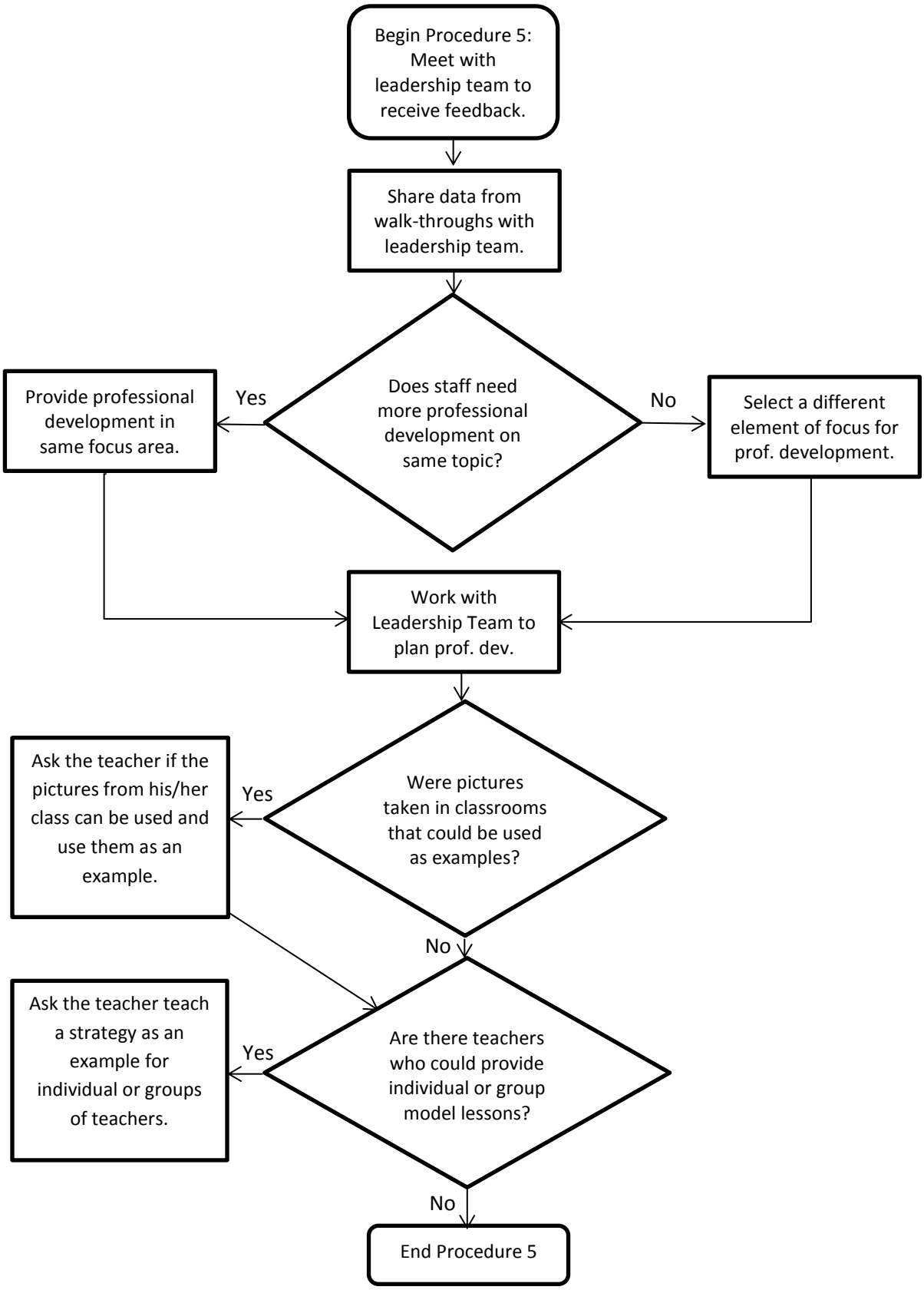

Procedure 3 continued from page 116
Is the teacher demonstrating an exemplary practice?
Yes
Ask teacher if you can take a picture or video
No
Take notes in the classroom for feedback if applicable
Are there parent volunteers in the classroom?
Yes
Thank parent for helping the classroom
No
Is classroom running smoothly?
Yes
No
Acknowledge that you are aware of the issues but support the teacher.
Will you provide feedback to the teacher?
Yes
Think about the feedback you will provide to the teacher and confirm your observations.
No
Exit Classroom
End Procedure 3


Step 3B from page 115
Is objective posted in student friendly language?
Yes
No
Ask a student if he/she knows the objective?
Yes
No
Ask another student if he/she knows the objective?
No
Ask more students until you find one who knows, if any do
Yes
Yes
Are students meeting the objective?
No
Take notes in classroom for feedback if applicable
Return to step 3B on page 115


Step 3C from page 115
Ask a student what they're doing and why
Can a student tell you the objective and does the activity match?
No
Ask another student about the objective and see if activity matches until you find one who knows
Yes
Take notes in classroom for feedback if applicable
Return to step 3C on page 115


Begin Procedure 4: Record notes outside of classroom
What is the quality of the instruction observed?
High quality implementation
Average implementation
Low quality implementation
Positive feedback to teacher in hallway or write a short note
Informal hallway conversation with reflective questions
Schedule a meeting in your office with the teacher
Address teacher's practices and the impact on student learning
Be supportive, offer professional dev., address operational issues
Were there student issues left unresolved by the teacher?
Are students in a harmful/ dangerous setting?
Yes
No
Discuss student behavior with the teacher and develop strategies to address the student behavior
No
Yes
Procedure 4 continued on page 9
Investigate, meet with union rep., document


Procedure 4 continued from page 8
Is the teacher on an improvement plan?
Yes
No
Is the teacher meeting the objectives of the improvement plan?
No
Yes
Investigate, meet with union rep., document
Does the teacher approach you first?
Yes
Ask reflective question or reinforce positive behaviors
No
Look for extenuating circumstances to enable redo
No
Does walk-through data match formal observation data?
Yes
Meet with teacher to set clear expectations for all instruction
End Procedure 4


Begin Procedure 5: Meet with leadership team to receive feedback.
Share data from walk-throughs with leadership team.
Does staff need more professional development on same topic?
Yes
Provide professional development in same focus area.
No
Select a different element of focus for prof. development.
Work with Leadership Team to plan prof. dev.
Were pictures taken in classrooms that could be used as examples?
Yes
Ask the teacher if the pictures from his/her class can be used and use them as an example.
No
Are there teachers who could provide individual or group model lessons?
Yes
Ask the teacher teach a strategy as an example for individual or groups of teachers.
No
End Procedure 5

Appendix E
Gold Standard Protocol

Principal's Informal Classroom Observation Walk-throughs and Providing Feedback to Teachers

Conducting an informal classroom observation walk-through and providing feedback to teachers is outlined in this protocol. The informal classroom observation walk-through is conducted in one single day however the follow-up activities may occur over multiple days.

Main Procedures:

1) Build rapport, relationships, and trust.
2) Set clear expectations.
3) Plan for the walk-throughs.
4) Observe the teacher in the classroom.
5) Provide feedback to individual teachers.
6) Provide feedback to the entire teaching staff.
7) Communicate with the Leadership Team and plan next steps.
8) Facilitate personal reflection.

Procedure 1. Build rapport, relationships, and trust.

1.1. IF you are a new principal to a school OR there are new staff members at the school, THEN contact each staff member individually by telephone OR in person before the school year starts to welcome him/her to a new school year and introduce yourself as the principal. (B)

1.2. Starting with Step 1.1 and prior to the start of the school year and throughout the school year, build rapport, relationships, credibility, and trust with the teaching staff through: (B, C)

- 1.2.1. Conducting staff meetings in which at least one teacher shares how he/she has implemented a component of your expectations (Premier Instruction, OWL, non-negotiables, over-arching focus area, or other instructional practices). (B, C)
- 1.2.2. Attending social events. (B)
- 1.2.3. Making one-on-one connections with teachers. (B)
- 1.2.4. Recognizing teachers' individual events (birthdays, anniversaries, achievement, etc.). (B)
- 1.2.5. Celebrating and honoring holidays. (B)
- 1.2.6. Maintaining a positive tone with the staff focusing on what is going well by providing support and positive feedback at least twice as frequently as constructive feedback. (B, C)
- 1.2.7. Writing individualized notes providing positive feedback. (B)
- 1.2.8. Maintaining open and frequent communication with the teachers about what you are seeing during your walk-throughs. (C)

1.2.9. Being honest about what you observe and sharing your observations with the teachers frequently. (C)
1.2.10. Validating the teachers as professionals by asking questions, listening, and mirroring back their words. (C)
1.2.11. Using directive or telling language only in cases where all other strategies are not changing a teacher's practice. (C)

Procedure 2. Set clear expectations.

2.1. Communicate orally and in writing what your expectations are for the informal classroom walk-throughs (Premier Instruction, OWL, non-negotiables, over-arching focus area, or other instructional practices). (A, B)
2.1.1. STANDARD: These strategies will likely change every year as the school improves and the proficiency level of the staff increases, and remember to establish realistic expectation based on the staff's current proficiency level. (B)
2.2. Meet with the Leadership Team (staff members at the school who are respected by their peers and recognized as understanding and delivering quality instruction) between the beginning of the school year the first staff meeting of the school year to discuss the informal walk-through observation process. (B)
2.2.1. Reinforce that as the instructional leader you will be walking through the classrooms at different times during the school day to provide support and help to the teachers. (B, C)
2.2.2. Develop the agenda for the first staff meeting of the school year with the Leadership Team which includes informal walk-through observations as one of the agenda items. (B)
2.3. Meet with the office staff and explain the informal walk-through process so they understand that you should not be interrupted during walk-throughs unless it is an emergency. (B)
2.4. At the first staff meeting at the beginning of the school year, tell the entire teaching staff what your expectations (Premier Instruction, OWL, non-negotiables, over-arching focus area, or other instructional practices) are when you walk-through the classrooms and provide them with these expectations in writing from step 1.2. (A, B, C)
2.4.1. IF most of your teachers are returning teachers AND they know your expectations (Premier Instruction, OWL, non-negotiables, over-arching focus area, or other instructional practices) AND have heard you explain them before, THEN keep the explanation of your expectations more general. (A)
2.4.2. IF you have a large number of new teachers or transferring teachers, THEN discuss your expectations (Premier Instruction, OWL, non-negotiables, over-arching focus area, or other instructional practices) in detail. (A, B)
2.4.3. Emphasize with the teacher staff your role as instructional leader is to provide support and help to the teachers. (B)

2.4.3.1. Open and close the agenda item with this emphasis because due to "primacy/recency" teachers will best remember the first the last items you discuss of an agenda item. (B)

2.4.4. Ensure the teachers understand that you will be walking through the classrooms frequently to identify and support your expectations (Premier Instruction, OWL, non-negotiables, over-arching focus area, or other instructional practices). (B)

2.4.5. Set the norms with your teachers for the walk-throughs: (C)

2.4.5.1. Tell the teachers when you walk in the classroom to continue teaching and do not stop instruction to recognize your presence. (C)

2.4.5.2. Tell the teachers that you will be looking for specific evidence that your expectations (Premier Instruction, OWL, non-negotiables, over-arching focus area, or other instructional practices) are being addressed. (C)

2.4.5.3. Reinforce with the teachers that the informal walk-through is just a snapshot and not intended to be an observation of an entire lesson. (C)

2.4.5.4. Stress with the teachers that this informal walk-through is not evaluative and is solely for the purpose of looking at the progress towards implementing your expectations (Premier Instruction, OWL, non-negotiables, over-arching focus area, or other instructional practices). (C)

2.4.5.5. Differentiate informal walk-throughs from formal observations by not conducting informal walk-throughs during the time of the year when formal observations occur. (C)

2.5. Use Leadership Team meetings and staff meetings throughout the school year to reinforce and provide professional development on techniques, methods, or ideas related to your expectations (Premier Instruction, OWL, non-negotiables, over-arching focus area, or other instructional practices). (A, B, C)

2.5.1. Instruct the staff so they understand and identify the difference between lessons and activities. (B)

2.5.2. Develop a common language related to your expectations (Premier Instruction, OWL, non-negotiables, over-arching focus area, or other instructional practices). (C)

2.5.3. Build a common understanding of what each element of your expectations (Premier Instruction, OWL, non-negotiables, over-arching focus area, or other instructional practices) should look like when used in the classroom. (C)

2.5.4. Tell the staff that this is an ongoing process of continuous learning that will continue to develop and change based on the students assigned to the teachers' classrooms, the teachers' professional growth, and the school's achievement data. (B)

2.5.5. STANDARD: All professional development is aligned with the Board's goals and research based. (B)

2.6. IF you have new teachers on your staff, THEN meet with the new teachers every month at a separate meeting to develop a clear understanding and common vocabulary regarding your expectations (Premier Instruction, OWL, non-negotiables, over-arching focus area, or other instructional practices) during your informal walk-throughs so the new teachers will clearly understand what you are talking about when you provide feedback after your informal walk-throughs. (A)

2.6.1 Provide new teachers with clear examples of the types of positive feedback or suggestions that you will provide and what they will sound like so they are not surprised when they receive them or left wondering what the feedback sounds like. (A)

2.6.2. Set a clear expectation that teachers will know where they stand and receive clear feedback from you on their performance. (A)

2.7. IF there are multiple administrators at the site who will be conducting informal classroom walk-through observations, THEN ensure all administrators hold the same expectations when they conduct their informal walk-throughs. (A)

2.8. Communicate with the staff at the regularly scheduled staff meeting what component of your expectations (Premier Instruction, OWL, non-negotiables, over-arching focus area, or other instructional practices) you will look for during the informal walk-throughs for the each subsequent period between staff meetings. (C)

2.8.1 IF notes will be taken while you are inside the classroom during the period of time between staff meetings, THEN inform teachers in advance at the staff meeting that this will be taking place AND exactly what type of information will be recorded in the notes (i.e. tallying, scripting, asking questions, etc.) AND provide a copy of any form that will be used to record these notes so staff may provide feedback and offer ideas for editing the form. (C)

2.9. Create and email a brief weekly newsletter (Monday Morning Message) to all school staff, key district office staff, select community members, and some retirees that is two or three paragraphs long and reinforces and reviews a component of your expectations (Premier Instruction, OWL, non-negotiables, over-arching focus area, or other instructional practices) among other school related topics. (A)

2.10. Convey the same message regarding instructional leadership and informal classroom walk-throughs shared with staff in Step 1.5.5 through 1.5.5.5 with various parent and community groups throughout the school year so they will understand your expectations (Premier Instruction, OWL, non-negotiables, over-arching focus area, or other instructional practices) and the informal walk-through process. (B)

2.11. Anticipate push-back from the teacher's union due to increased expectations, claims that the informal walk-through process is evaluative, and addition of extra duties to the teachers' workloads. (B)

Procedure 3. Plan for the walk-throughs.

3.1. (a) IF you are the only one administrator assigned to the school, THEN proceed to step 3.2. (b) IF there is more than one administrator assigned to the school, THEN schedule and hold a weekly administrator's meetings. (A)

3.1.1. Divide the campus evenly among the administrative team so every week at least one administrator is in every classroom. (A)

3.1.1.1. Rotate the way the classrooms are divided so that each administrator has the opportunity to see all of the classrooms on the campus. (A)

3.1.1.2. IF during the previous week you did not have an opportunity to conduct informal walk-throughs in all of your assigned classrooms, THEN discuss with the rest of the administrative team not rotating the assigned classrooms that week AND visiting the same set of classrooms for two weeks in a row. (A, B)

3.1.1.3 IF a specific teacher, grade level, or department have requested you to walk-through their classrooms, THEN ensure that your scheduled informal walk-throughs will enable you to visit those classrooms, AND even if that classroom(s) is not in your weekly rotation of classrooms to visit. (A, B)

3.1.1.4 IF you had a follow-up meeting with a teacher as described in step 5.11.5, THEN make sure to visit that classroom during the week, especially if/when invited by the teacher, AND even if that classroom is not in your weekly rotation of classrooms to visit. (A, B)

3.1.2. For a high performing teacher, IF the administrative team has seen this teacher providing a high quality lesson or activity that is in the area where another teacher needs assistance, THEN ask the high performing teacher to teach a model lesson OR support another teacher on learning how to better deliver the lesson or activity. (A)

3.1.3. For an average performing teacher, IF you or another administrator observed something during your informal walk-through that was not consistent with the teacher's normal performance, THEN share the concern with the other administrators to get their input from their informal observations AND ensure the administrator who walks-through that classroom during the week looks for the same behavior to determine if there is a pattern of behavior. (A)

3.1.4. For a low performing teacher, discuss what has been observed in his/her classroom every week and whether that teacher is improving toward meeting the expectations (Premier Instruction, OWL, non-negotiables, over-arching focus area, or other instructional practices). (A)

3.1.5. IF the administrative team thinks a specific teacher who is being discussed needs feedback to meet the expectations (Premier Instruction, OWL, non-negotiables, over-arching focus area, or other instructional practices), THEN determine among the administrative team what type of feedback to provide and who will provide that feedback to the teacher. (A)

3.1.6. IF an administrator has received a parent or student complaint regarding a teacher, THEN discuss what the administrative team has seen during informal walk-throughs to confirm or refute the complaint AND focus on that teacher's performance during the next week's informal walk-throughs. (A)

3.1.7. IF a teacher has sent a greater than normal number of students to the office for discipline referrals OR a greater than normal number of students for detention, THEN discuss what the administrative team has seen during informal walk-throughs to explain the referrals and detentions AND focus on that teacher's performance during the next week's informal walk-throughs. (A)

3.2. IF you are the only administrator assigned to the school, THEN consider the following prior to conducting your walk-throughs: (A, B)

3.2.1. IF certain classrooms were not visited during the last time you conducted informal walk-throughs, THEN start with the classrooms that were not visited last time. (A, B)

3.2.2. If a specific teacher or grade level has requested you to walk-through their classrooms, THEN ensure that your scheduled informal walk-throughs will enable you to visit that classroom(s). (A, B)

3.2.3. IF you had a follow-up meeting with a teacher as described in step 5.1.4.2, THEN make sure to visit that classroom during the week, especially if/when invited by the teacher, AND even if that classroom is not in your scheduled classrooms to visit that day. (A, B)

3.2.4. For an average performing teacher, IF you observe something during your informal walk-through that was not consistent with the teacher's normal performance, THEN ensure you look for the same behavior to determine if there is a pattern of behavior. (A)

3.2.5. For a low performing teacher, think about what has been observed in his/her classroom every week and whether that teacher is improving toward meeting the expectations (Premier Instruction, OWL, non-negotiables, over-arching focus area, or other instructional practices). (A)

3.2.6. For a high performing teacher, IF you have seen this teacher providing a high quality lesson or activity that is in the area where another teacher needs assistance, THEN ask the high performing teacher to teach a model lesson OR support another teacher on learning how to better provide the lesson or activity. (A)

3.2.7. IF you think a specific teacher who you are reflecting on needs feedback to meet the expectations (Premier Instruction, OWL, non-negotiables, over-arching focus area, or other instructional practices), THEN determine what type of feedback to provide and when to provide that feedback to the teacher. (A)

3.2.8. IF you have received a parent or student complaint regarding a teacher, THEN think about what you have seen during informal walk-throughs to confirm or refute the complaint AND focus on that teacher's performance during the next week's informal walk-throughs. (A)

3.2.9. IF a teacher has sent a greater than normal number of students to the office for discipline referrals OR a greater than normal number of students for detention, THEN think about what you have seen during informal walk-throughs to explain the referrals and detentions AND focus on that teacher's performance during the next week's informal walk-throughs. (A)

3.3. Schedule daily classroom walk-throughs into your calendar, but do not tell the staff when you will be conducting informal walk-throughs as they are unannounced. (A)

3.3.1. IF the informal walk-through observations were conducted at a certain time of day during the prior observations, THEN try to conduct them at a different time of the day. (B)

3.4. Determine the focus from your expectations (Premier Instruction, OWL, non-negotiables, over-arching focus area, or other instructional practices) for the day's informal classroom walk-throughs based on what was communicated with the teachers in Step 2.8 and what you have determined to be the highest priority based on student achievement in Steps 3.1 or 3.2. (B, C)

3.4.1. Based on the time of the school year, select a part of your expectations (Premier Instruction, OWL, non-negotiables, over-arching focus area, or other instructional practices) that are appropriate for the time of year (i.e. beginning of the year, establishing routines and patterns; middle of the year, maximizing learning and building on previous learning; etc.). (B)

3.5. Select the number of classrooms to walk-through and how long to stay in each classroom based on time available to conduct walk-throughs and focus from your expectations (Premier Instruction, OWL, non-negotiables, over-arching focus area, or other instructional practices). (C)

3.6. IF the informal walk-through observation requires specific data that has to be recorded in the classroom in the moment in a specific way, THEN prepare to record the data according to the manner that was indicated to the staff in Step 2.8.1. (C)

3.6.1. If a specific form or note-taking aide will be used, THEN make sufficient copies of the form or note taking aide. (C)

3.7. IF notes will not be taken while in the classroom, THEN prepare to take notes outside the classroom after conducting the informal walk-through observation by carrying a clipboard with paper for taking notes OR using you cell phone or IPad and send yourself an email with your notes. (A, B, C)

3.8. Inform the office staff that you will be conducting informal walk-throughs and for what length of time. (B)

3.8.1. If you have been interrupted over the past one or two informal walk-throughs for non-emergency situations, THEN remind the office staff that this time is dedicated to informal walk-throughs and you should only be interrupted in an emergency. (B)

Procedure 4. Observe the teacher in the classroom.

4.1. Open the door and walk into the classroom. (A, B, C)

4.1.1. IF there are multiple entrances into a classroom, THEN use a different entrance and exit for each informal classroom walk-through. (B)

4.2. Make eye contact with the teacher and smile so that the teacher will not think you are trying to be sneaky and to acknowledge that this is an informal walk-through. (A, C)

4.3. IF you will be taking notes in the classroom during the informal walk-through, THEN begin to note observable data and write it down once observed. (C)

4.4. Do not talk to the teacher or interrupt what the teacher is doing. (A, C)

4.4.1. IF you do need to talk to the teacher, THEN move to the front of the classroom AND keep eye contact AND wait for the teacher to ask if you need something AND depending on the content of the conversation talk to the teacher either inside or outside of the classroom. (A)

4.4.2. Keep a "poker face" and neutral demeanor while in the classroom. (B)

4.5. Walk to the back of the classroom or where you can observe the most from one location but be as least disruptive as possible. (A, B)

4.5.1. Move throughout the classroom and observe from multiple vantage points. (B)

4.6. Look around the entire classroom taking in all four walls, the students, how the room is organized, what is being presented and displayed, and the teacher. (A, B)

4.6.1. Evaluate if the items displayed are accessible and available for student use, preferably student work product. (A)

4.7. Scan the front of the classroom for a posted daily agenda and identify that the lesson or activity matches what the teacher has posted on the daily agenda. (A, B)

4.8. Look at what is projected, written on the Board, or being given to the students for evidence of the objective. (A, B)

4.9. Observe the students, where the action is taking place in the classroom, and look at what the students are doing. (A, C)

4.10 Observe whether the students are participating in a lesson or an activity and identify if what the students are doing matches the objective. (A, C)

4.10.1. Identify whether it is an instructional day or activity day by trying to determine where the teacher is in the instructional process. (A, C)

4.10.2. IF it is an instructional day, THEN the teacher is teaching a lesson. (C)

4.10.2.1. IF the teacher is teaching a lesson, THEN look for the objective of the lesson to be posted at the front of the classroom in student friendly language AND identify if the instruction is enabling the students to reach the objective. (C)

4.10.2.2. IF you determine the students are meeting the posted objective, THEN do not proceed to Step 4.11 indicating to the teacher that you recognize the lesson is going well and you are observing instruction that meets the posted objective. (C)

4.10.2.3. IF the teacher is teaching a lesson AND no objective is posted, THEN remember this information to record in your notes AND to provide feedback to the teacher. (C)

4.10.3 IF you cannot determine where the teacher is in the instructional process within approximately five minutes, THEN it is an activity day. (A)

4.10.3.1. IF it is an activity day OR you cannot determine the objective of the lesson, THEN move to Step 4.11. (C)

4.11. IF it will not interrupt a student's learning or a group activity, unobtrusively speak with a student and ask them what they are learning today and why. (A, B, C)

4.11.1. IF the student cannot tell you what he/she is learning OR the task does not match the objective, THEN unobtrusively ask another student what they are learning today AND keep asking additional students until you get an answer. (A, B, C)

4.11.1.1. Remember the names of the students or where they are sitting to discuss with the teacher during feedback. (B)

4.11.1.2. IF multiple students do not know the objective OR the task does not match the objective AND the students are not learning the intended materials, THEN remember to record this information in your notes AND remember to send the teacher an email outside the classroom or give the teacher a hand written note to see you after school in order to discuss the observation. (B, C)

4.11.2. IF the student understands the objective and the task matches the objective, THEN continue the informal observation AND speaking to additional student(s) is optional. (B, C)

4.11.2.1. While speaking with the student, observe what work the student is producing and determine if it matches your expectations for that portion of the lesson. (A)

4.12. Look for student engagement by determining what the students are doing and/or producing and if it is connected to what the teacher intends for them to learn/do, in other words, the activities match the objective. (A)

4.13. Observe the balance between students working independently and depending upon their peers. (C)

4.14. IF students are working in cooperative groups, THEN distinguish whether or not all students understand the materials AND whether students could serve in any role required to complete the task. (C)

4.15. Observe the teacher's actions. (A, C)

4.16. Look for evidence of your expectations (Premier Instruction, OWL, non-negotiables, over-arching focus area, or other instructional practices). (A, C)

4.17. Observe classroom management and discipline issues. (C)

4.18. Observe the rapport and positive classroom environment that is being built between the teacher and the student by looking for the following: (C)

4.18.1. Distinguish if student feel safe and supported to take risks and try new experiences by observing if they will answer questions when they are not completely certain of the answer. (C)

4.18.2. Observe which students are asked to answer question and how the teacher responds to the student s in order to see if even incorrect responses are received positively (not using terms such as "wrong answer"), questions are open-ended versus "yes/no," and students do not feel ridiculed. (C)

4.18.3. Identify the teacher's style of interacting with the students (i.e. humor, caring, etc.) and look for visual cues of how the students respond to this interaction. (C)

4.18.4. Identify any students who are "pushing a teacher's buttons" and remember these occurrences to be recorded in your notes outside the classroom for later discussion with the teacher noting the triggers for the student's behavior and the teacher's response(s). (C)

4.18.5. Identify students who are responding with "I don't know," or shrugging their shoulders and how the teacher encourages their participation. (C)

4.18.6. Observe students who do not seem to understand the instruction or the activity and how the teacher encourages or support them. (C)

4.18.7. Look for students who do not raise their hands or try to answer questions to see if the teacher involves them and encourages their participation. (C)

4.18.8. Observe students' body language and how the teacher reacts to the different types of body language in the classroom. (C)

4.18.9. Identify how and what students use in the room environment as a tool to assist them with learning during lesson and activities. (C)

4.18.10. Notice how long the teacher waits between asking a question and calling on a student to answer (wait time) and how that impacts the number of students volunteering to answer questions. (C)

4.19 IF you identify students in the classroom who are identified for intervention or specialized instruction (Special Education students, English Language Learners, GATE students, etc.), THEN identify the strategies (preview/review, collaborative groups, total physical response, sentence frames, depth and complexity icons, etc.) that the teacher is using and how they are helping the identified students. (D)

4.19.1 IF the teacher is not using any differentiated strategies to assist students identified for intervention or specialized instruction OR the strategies are not being used appropriately, THEN note the information and remember the information to record in your notes once outside the classroom. (D)

4.20. Look for the use of classroom technology. (C)

4.20.1. IF classroom technology is being used, THEN determine the level and type of usage AND remember the information to record in your notes once outside the classroom. (C)

4.20.2. Ask the students about the technology to determine if it is enhancing their learning, working appropriately, and creating minimal distractions. (C)

4.21. IF the teacher has been placed on a Plan for Improvement based on a history of performance problems, THEN observe whether the areas addressed in the Plan for Improvement are being implemented in the classroom AND note the deficiencies and improvements AND provide feedback in Steps 5.13 and 5.14. (C)

4.22. If you observe an extreme situation in the classroom in which students are at risk of harm, there is extreme misbehavior, there is a violation of school or district rules, or the teacher is presenting information inaccurately so that students will learn the information incorrectly, THEN discreetly approach the teacher and inform the teacher that there is a serious situation which needs to be addressed immediately. (B)

4.23. If there is exemplary implementation of one or your expectations (Premier Instruction, OWL, non-negotiables, over-arching focus area, or other instructional practices), THEN ask the teacher if you can take a picture or video AND use your IPad or your phone to take a picture to provide positive feedback to the teacher/grade level OR present to the entire staff during a staff meeting. (B, C)

4.24. Observe to see if there are any parents in the classroom. (C)

4.24.1. IF parent volunteers are in the classroom, THEN acknowledge their presence by smiling, making eye contact, and speaking with them in an unobtrusive manner to thank them for volunteering. (C)

4.24.2. IF parent volunteers are in the classroom and the lesson or activity is not going smoothly, THEN speak to the parent in an unobtrusive and non-judgmental manner letting the parent know that you have recognized the current classroom condition but are supporting the teacher's professionalism with a phrase such as, "It looks like (Student Name) may be having a difficult day and (Teacher Name) has his/her hands full. He/she is lucky to have such dedicated parent volunteers like you." (C)

4.25. Spend at least 5 but not more than 15 minutes in each classroom. (A, B)

4.25.1. IF you have gathered data from observing where the teacher is in the instructional process, looking at teacher behaviors, talking to a student(s), looking at what a student(s) is producing, and looking at the room environment; THEN prepare to exit the classroom. (A)

4.26. Prior to leaving the classroom, double-check the data that you have from your informal walk-through and decide whether or not to provide feedback to the teacher based on specific observations from the classroom that have the highest possibility of affecting student learning and remember specific information to note once outside of the classroom. (A, B, C)

4.26.1. IF you will not be providing the teacher with feedback from your informal walk-through because the teacher is meeting your expectations, THEN unobtrusively get the teacher's attention and give him/her a "thumbs-up" or a nod on your way out of the door AND remember to send an email to yourself or take written notes when you are outside the classroom for your own notes or journaling. (A, B)

4.26.2. IF you will be positive feedback to the teacher, THEN decide what positive information you will share with the teacher from what you have observed AND what the next suggested steps are for the teacher to work on AND remember to send yourself an email or take written notes when you are outside the classroom for your own notes or journaling. (B)

4.26.3. IF you will be providing suggestions or asking reflective questions of the teacher based on a practice that needs improvement, THEN unobtrusively get the teacher's attention and give him/her a "thumbs up" or a nod on your way out of the door AND remember to send an email to yourself or take written notes with a suggestion or reflective question when you are outside the classroom. (A, B)

4.26.4. IF you will be providing feedback that is critical or urgent, THEN make eye contact with the teacher when you exit the classroom if you are able BUT do not give a "thumbs-up" AND remember to send the teacher an

email or hand the teacher a written note to see you in your office after school. (A)

4.27 Exit the classroom if one or more of the following conditions occur: (A, B, C)

4.27.1. IF you have collected enough data to make a decision about providing follow-up information to the teacher, THEN exit the classroom. (A, B, C)

4.27.2. IF you have been called on the radio and are need elsewhere, THEN exit the classroom. (C)

4.27.3. IF the classroom environment is uncomfortable for the teacher or the students are having an awkward moment due to what is happening in the classroom, THEN exit the classroom. (C)

4.27.4. IF it is not a dangerous or harmful situation, THEN exit the classroom. (C)

Procedure 5. Provide feedback to individual teachers.

5.1. Once outside the classroom, use paper to take notes or use your IPad or cell phone to send a short email (2-3 sentences) that will be for your reference, which will include: what was observed, what needs to be reinforced with the teacher, how it will be reinforced, what support will be provided through professional development and coaching, what positive feedback will be provided to the individual or entire staff, and what connections should be made among staff for collaborative support. (A, B, C)

5.1.1. IF there is more than one administrator assigned to the school AND you saw, heard, or felt something that you want to remember BUT are not sure what you will do with the information, THEN share the note or email during the weekly administrator's meeting AND decide what to do with the information during the next administrator's meeting (Steps 3.1.2 through 3.1.5). (A)

5.1.2. If you are the only administrator assigned to the school AND you saw, heard, or felt something that you want to remember BUT are not sure what you will do with the information, THEN review the notes or email AND decide what to do with the information after reflecting on it. (A, B)

5.2. IF you will provide feedback to the teacher, THEN make every effort to start verbal or written (email) feedback with something you observed during your walk-through of the classroom that was positive. (A, B)

5.3. IF you will provide feedback to the teacher that involves areas of improvement, THEN offer ways that you will help the teacher AND show your willingness to be a resource or provide resources to work with the teacher to find solutions so the feedback is not viewed as a "gotcha." (B)

5.3.1. Ensure that the teaching staff hears you say and sees your actions which demonstrate you do not have all of the answers but that you are also a learner and are willing to work with them to find answers. (B)

5.3.2. Based on the time of the school year, provide feedback to the teacher from your informal walk-throughs based on what you would expect to see at

that time of the year and the amount of stress that teachers are experiencing. (A)

5.3.2.1 IF a teacher is under pressure due to the time of the year OR a personal situation (illness, family illness, divorce, death, etc.) AND the teacher's performance is not significantly impacting student learning, THEN write a note or send an email to yourself AND save the note or email for a less stressful time to discuss with the teacher and for your own journaling. (A)

5.3.2.2 IF a teacher is under pressure due to the time of the year OR a personal issue (illness, family illness, divorce, death, etc.) AND the teacher's performance is significantly impacting student learning over more than one day, THEN give the teacher a note or send an email to the teacher to come see you after school and discuss what can be done to lessen the impact upon student learning. (A)

5.4. IF the teacher approaches you in an informal (hallway) setting for feedback on what was occurring in his/her classroom when you walked-through, THEN try to find a more private location in which to talk AND let the teacher do the majority of the talking AND attempt to build the teacher's confidence by asking reflective questions (no more than 2) that will help strengthen and refine the teacher's strategies to address your expectations (Premier Instruction, OWL, non-negotiables, over-arching focus area, or other instructional practices). (A, B, C)

5.4.1. IF the conversation with the teacher will take more than a few minutes or is sensitive in nature, THEN politely ask the teacher to see you at the end of the school day in your office in order to give you the "gift of time" to meet the teacher in an unrushed manner and develop your response in advance. (B)

5.5. IF the informal walk-through observation results in information that needs immediate attention, is dangerous or harmful, a safety hazard, breaks school or district rules, or is critical or urgent in nature because it impacts student learning, THEN give the teacher a written note and send an email to the teacher to meet with you after school that day in your office with a union representative AND schedule the meeting on your calendar. (A, B, C)

5.5.1. IF a negative situation needs to be discussed with a teacher, THEN have that discussion behind closed doors with the individual teacher directly involved. (B)

5.5.2. IF the teacher shows an area of strength, THEN begin by discussing that area of strength in order to build the teacher's confidence and open a door to address the areas where the teacher needs to improve. (C)

5.5.3. Attempt to discover what may have led to this teacher's actions or lack of action, and provide support and coaching to enable the teacher to improve in order to not repeat the same behavior. (C)

5.5.4. Be honest and use observation data collected during the informal walk-throughs when addressing areas that need improvement. (B)

5.6. IF a student is "pushing a teacher's buttons," THEN discuss the situation with the teacher AND brainstorm strategies for dealing with students with challenging behaviors, reacting appropriately, and recognizing triggers. (C)

5.7. IF you are in a classroom for longer than five to seven minutes, THEN inform the teacher what captured your interest and why you stayed longer than normal. (B)

5.8. IF you observed exemplary implementation of your expectations, THEN send an email, give the teacher positive feedback when passing him/her in the hallway, or give a short personalized note (the more preferred method) to the teacher specifically noting the teacher's effective use of strategies AND how they relate back to your expectations. (A, B, C)

5.8.1. IF you are sending an email AND you took a picture in the classroom, THEN attach that picture to the email as evidence of excellent implementation of your expectations. (B).

5.9. IF you observed above average implementation of your expectations AND you have provided positive feedback to the teacher recently, THEN provide feedback to the teacher if/when you pass him/her in the hallway. (A)

5.10. IF you observed average implementation of your expectations AND the teacher showed areas that need small modifications related to your expectations THEN have an informal conversation with the teacher in the hallway, his/her classroom, or through email AND provide encouragement to try something new or different in order to improve his/her skills related to your expectations. (C)

5.10.1 IF you decide to provide the teacher with feedback in the hallway or in his/her classroom, THEN without students present ask the teacher one or two reflective questions designed to help the teacher reflect on his/her practices related to your expectations AND do not expect an answer. (A, C)

5.10.2. IF you decide to provide the teacher with feedback through email, THEN provide specific suggestions in your email that you think would help the teacher more effectively meet your expectations OR reflective questions (no more than two) for the teacher to consider AND do not expect a response from the teacher. (A, C)

5.11. IF you observed a poor implementation of your expectations, THEN give the teacher a written note and send an email to the teacher to meet with you after school within the next 24 hours in your office AND schedule the meeting on your calendar. (C)

5.11.1. Hold a meeting with the teacher that is positive and supportive in nature using a conversational style of communicating to explain what you observed in the classroom; discuss your expectations with the teacher; and establish a timeline for support, coaching, and implementing your expectations. (A, C)

5.11.2. Provide the teacher with coaching and individual professional development in the areas where it is needed. (C)

5.11.3. IF operational issues (library time, special education mainstreaming, etc.) are impacting instruction, THEN find a solution to make changes that will maximize the best use of students' time in the classroom. (C)

5.11.4. IF multiple students indicated that they were having difficulty understanding the material that was being presented in the lesson (Step 4.10.2.3) OR they indicated that they did not understand the objective of the activity (Step 4.11.1.2), THEN ask the teacher how he/she will provide support or reteach the students who do not understand. (C)

5.11.5. Tell the teacher, you are going to come back to walk-through the classroom again and suggest that the teacher invite you into the classroom the next time he/she will be providing a lesson that he/she would like you to see, demonstrating that the teacher is attempting to improve his/her practice. (A)

5.11.6. IF the teacher is showing a repeated pattern of poor performance AND attempts to coach and assist the teacher are not changing behavior, THEN save the emails with this observational information to note reoccurring patterns (positive or negative) or behaviors that are not changing for documentation to begin the progressive discipline process. (A)

5.12. IF a teacher was identified to receive feedback in Step 3.1.5 or 3.2.7, THEN ensure that teacher receives the feedback AND reflect on how the feedback was received in order to plan next steps. (A)

5.13. IF a teacher has been placed on a Plan for Improvement based on a history of poor performance AND is implementing your expectations in an average to above average manner, THEN hold a conference with the teacher to reinforce the positive behavior observed during the informal walk-through observations and encourage more of this behavior. (C)

5.14. If a teacher has been placed on a Plan for Improvement based on a history of poor performance AND is not implementing your expectations, THEN give the teacher a written note and send an email to the teacher to meet with you after school that day in your office with a union representative AND provide a written disciplinary document to the teacher. (C)

5.15. IF the informal walk-through observation data does not match what has been observed during formal observations, THEN discuss this disparity between the two pieces of observation data with the teacher. (A, C)

5.15.1. IF the teacher's performance during the formal observation was not up to the same level as the informal walk-through data AND the teacher communicates that there were extenuating circumstances (i.e. personal tragedy, medical issues, higher than normal stressors, etc.), THEN permit the teacher to redo his/her formal observation. (C)

Procedure 6. Provide feedback to the entire teaching staff.

6.1. Avoid providing negative feedback to the entire staff when feedback should be directed toward specific staff members. (B)

6.2. Provide positive feedback publically to the entire staff through the weekly bulletin (Monday Morning Message) or at the staff meeting without using the specific

teacher's name to reinforce your expectations and to enable multiple staff members to potentially recognize that you are complimenting them. (A)

6.3. IF you have taken picture(s) or video(s) in individual teacher's classrooms AND he/she has given you permission to show the picture(s) or video(s) to the entire staff, THEN use the picture(s) or video(s) to reinforce the positive example of the implementation of your expectations. (B, C)

Procedure 7. Communicate with the Leadership Team and plan next steps.

7.1. Meet regularly (at least monthly) with your Leadership Team (Staff members at the school who are respected by their peers and recognized as understanding and delivering quality instruction) to discuss the schools' current progress toward meeting your expectations and new ideas, techniques, or methods that may be introduced to the staff through professional development. (A, B, C)

- 7.1.1. IF informal walk-through data OR school assessment data OR feedback from the Leadership Team indicates that more than 50% of the teachers are not effectively implementing your expectations, THEN provide ongoing professional development for this specific expectation. (B, C)
- 7.1.2. IF informal walk-through data OR school assessment data OR feedback from the Leadership Team indicates that less than 50% of the teachers are not effectively implementing your expectations, THEN meet with the teachers not effectively implementing your expectations AND establish an individualized professional development plan which may include one of the following strategies: (C)
  - 7.1.2.1. Release the teacher from his/her daily teaching duties with a substitute during the instructional day to observe another teacher who implements your expectations well based on what you have observed during your informal walk-through observations. (C)
  - 7.1.2.2. Release the teacher from his/her daily teaching duties with a substitute during the instructional day to walk-through classrooms with you or an instructional coach to see examples of your expectations in application. (B, C)
  - 7.1.2.3. Schedule a one-on-one meeting with the teacher and you or an instructional coach to review your expectations and develop an implementation plan. (B, C)
  - 7.1.2.4. Send the teacher to a professional development workshop outside the school specific to your expectations. (C)
  - 7.1.2.5. Use teacher preapproved pictures and videos collected during your informal walk-through observations to give the teacher examples from your own staff of how to implement your expectations. (B, C)
    - 7.1.2.5.1. Refrain from showing a picture or video from a teacher's classroom to anyone else unless permission is obtained from the teacher. (B)
- 7.1.3. Discuss and plan the next steps for new professional development related to demonstrating greater mastery of your expectations. (B, C)

7.1.3.1. Identify patterns of teacher performance related to the elements of your expectations by teacher, grade level, or school that will be used in Step 7.1.3. (B, C)

7.1.4. Provide professional development in Step 2.5. (A, B, C)

7.1.4.1. STANDARD: Remember not to move too quickly and assume that since you are moving to new professional development that teachers have completely mastered your expectations. (B)

Procedure 8. Facilitate personal reflection.

8.1. Use recurring trends, informal walk-through observation data, the content of the notes and emails you have written, and the input of the Leadership Team for personal reflection on where the school has come from, where the school is headed, and how you as a leader will help the school continue to move forward by providing greater support to the teachers. (B)

8.1.1. Discuss recurring trends with the assistant superintendent of instruction to see if your observations and reflections are a larger district-wide issue which requires district-wide professional development. (B)

Appendix F
Incremental Coding Spreadsheets

Spreadsheet Analysis: Gold Standard Protocol Procedures, Action and Decision Steps

			Subject Matter Expert			Section Steps	
Step	Type	Final Gold Standard Protocol Analysis	A	B	C	A	D
		Procedure 1. Build rapport, relationships, and trust.				12	1
1	D	1.1. IF you are a new principal to a school OR there are new staff members at the school, THEN contact each staff member individually by telephone OR in person before the school year starts to welcome him/ her to a new school year and introduce yourself as the principal. (B)	0	1	0		
2	A	1.2. Starting with Step 1.1 and prior to the start of the school year and throughout the school year, build rapport, relationships, credibility, and trust with the teaching staff through: (B, C)	0	1	1		
3	A	1.2.1. Conducting staff meetings in which at least one teacher shares how he/she has implemented a component of your expectations (Premier Instruction, OWL, non-negotiables, over-arching focus area, or other instructional practices). (B, C)	0	1	1		
4	A	1.2.2. Attending social events.	0	1	0		
5	A	1.2.3. Making one-on-one connections with teachers. (B)	0	1	0		
6	A	1.2.4. Recognizing teachers' individual events (birthdays, anniversaries, achievements, etc.). (B)	0	1	0		
7	A	1.2.5. Celebrating and honoring holidays. (B)	0	1	0		
8	A	1.2.6. Maintaining a positive tone with the staff focusing on what is going well by providing support and	0	1	1		

		feedback at least twice as frequently as constructive feedback. (B, C)					
9	A	1.2.7. Writing individualized notes providing positive feedback. (B)	0	1	0		
10	A	1.2.8. Maintaining open and frequent communication with the teachers about what you are seeing during your walk-throughs. (C)	0	0	1		
11	A	1.2.9. Being honest about what you observe and sharing your observations with the teachers frequently. (C)	0	0	1		
12	A	1.2.10. Validating the teachers as professionals by asking questions, listening, and mirroring back their words. (C)	0	0	1		
13	A	1.2.11. Using directive or telling language only in cases where all other strategies are not changing a teacher's practice. (C)	0	0	1		
		Procedure 2. Set clear expectations.				26	5
14	A	2.1. Communicate orally and in writing what your expectations are for the informal classroom walk-throughs (Premier Instruction, OWL, non-negotiables, over-arching focus area, or other instructional practices). (A, B)	1	1	0		
		2.1.1. STANDARD: These strategies will likely change every year as the school improves and the proficiency level of the staff increases, and remember to establish realistic expectations based on the staff's current proficiency level. (B)					
15	A	2.2. Meet with the Leadership Team (staff members at the school who are respected by their peers and recognized as understanding and delivering quality instruction) between the beginning of the school year and the first staff meeting of the school year to discuss the informal walk-through observation process. (B)	0	1	0		

16	A	2.2.1. Reinforce that as the instructional leader you will be walking through the classrooms at different times during the school day to provide support and help to the teachers. (B, C)	0	1	1		
17	A	2.2.2. Develop the agenda for the first staff meeting of the school year with the Leadership Team which includes informal walk-through observations as one of the agenda items. (B)	0	1	0		
18	A	2.3. Meet with the office staff and explain the informal walk-through process so they understand that you should not be interrupted during walk-throughs unless it is an emergency. (B)	0	1	0		
19	A	2.4. At the first staff meeting at the beginning of the school year, tell the entire teaching staff what your expectations (Premier Instruction, OWL, non-negotiables, over-arching focus area, or other instructional practices) are when you walk-through the classrooms and provide them with these expectations in writing from Step 1.2. (A, B, C)	1	1	1		
20	D	2.4.1. IF most of your teachers are returning teachers AND they know your expectations (Premier Instruction, OWL, non-negotiables, over-arching focus area, or other instructional practices) AND have heard you explain them before, THEN keep the explanation of your expectations more general. (A)	1	0	0		
21	D	2.4.2. IF you have a large number of new teachers or transferring teachers, THEN discuss your expectations (Premier Instruction, OWL, non-negotiables, over-arching focus area, or other instructional practices) in detail. (A, B)	1	1	0		
22	A	2.4.3. Emphasize with the teaching staff your role as instructional leader	0	1	0		

		is to provide support and help to the teachers. (B)					
23	A	2.4.3.1. Open and close the agenda item with this emphasis because due to "primacy/recency" teachers will best remember the first and the last items you discuss of an agenda item. (B)	0	1	0		
24	A	2.4.4. Ensure the teachers understand that you will be walking through the classrooms frequently to identify and support your expectations (Premier Instruction, OWL, non-negotiables, over-arching focus area, or other instructional practices). (B)	0	1	0		
25	A	2.4.5. Set the norms with your teachers for the walk-throughs: (C)	0	0	1		
26	A	2.4.5.1. Tell the teachers when you walk in the classroom to continue teaching and do not stop instruction to recognize your presence. (C)	0	0	1		
27	A	2.4.5.2. Tell the teachers that you will be looking for specific evidence that your expectations (Premier Instruction, OWL, non-negotiables, over-arching focus area, or other instructional practices) are being addressed. (C)	0	0	1		
28	A	2.4.5.3. Reinforce with the teachers that the informal walk-through is just a snapshot and not intended to be an observation of an entire lesson. (C)	0	0	1		
29	A	2.4.5.4. Stress with the teachers that this informal walk-through is not evaluative and is solely for the purpose of looking at the progress towards implementing your expectations (Premier Instruction, OWL, non-negotiables, over-arching focus area, or other instructional practices). (C)	0	0	1		
30	A	2.4.5.5. Differentiate informal walk-throughs from formal observations by not conducting informal walk-through during the time of the year when formal observations occur. (C)	0	0	1		

31	A	2.5. Use Leadership Team meetings and staff meetings throughout the school year to reinforce and provide professional development on techniques, methods, or ideas related to your expectations (Premier Instruction, OWL, non-negotiables, over-arching focus area, or other instructional practices). (A, B, C)	1	1	1		
32	A	2.5.1. Instruct staff so they understand and identify the difference between lessons and activities. (B)	0	1	0		
33	A	2.5.2. Develop a common language related to your expectations (Premier Instruction, OWL, non-negotiables, over-arching focus area, or other instructional practices). (C)	0	0	1		
34	A	2.5.3. Build a common understanding or what each element of your expectations (Premier Instruction, OWL, non-negotiables, over-arching focus area, or other instructional practices) should look like when used in the classroom. (C)	0	0	1		
35	A	2.5.4. Tell the staff that this is an ongoing process of continuous learning that will continue to develop and change based on the students assigned to the teachers' classrooms, the teachers' professional growth, and the school's achievement data. (B)	0	1	0		
		2.5.5. STANDARD: All professional development is aligned with the Board's goals and research-based. (B)					
36	D	2.6. IF you have new teachers on your staff, THEN meet with the new teachers every month at a separate meeting to develop a clear understanding and common vocabulary regarding your expectations (Premier Instruction, OWL, non-negotiables, over-arching focus area, or other instructional	1	0	0		

		practices) during your informal walk-throughs so the new teachers will clearly understand what you are talking about when you provide feedback after your informal walk-throughs. (A)					
37	A	2.6.1. Provide new teachers with clear examples of the types of positive feedback or suggestions that you will provide and what they will sound like so they are not surprised when they receive them or left wondering what the feedback sounds like. (A)	1	0	0		
38	A	2.6.2. Set a clear expectation that teachers will know where they stand and receive clear feedback from you on their performance. (A)	1	0	0		
39	D	2.7. IF there are multiple administrators at the site who will be conducting informal classroom walk-through observations, THEN ensure all administrators hold the same expectations when they conduct their informal walk-throughs. (A)	1	0	0		
40	A	2.8. Communicate with the staff at the regularly scheduled staff meeting what component of your expectations (Premier Instruction, OWL, non-negotiables, over-arching focus area, or other instructional practices) you will look for during the informal walk-throughs for each subsequent period between staff meetings. (C)	0	0	1		
41	D	2.8.1. IF notes will be taken while you are inside the classroom during the period of time between staff meetings, THEN inform teachers in advance at the staff meeting that this will be taking place AND exactly what type of information will be recorded in the notes (i.e. tallying, scripting, asking questions, etc.) AND provide a copy of any form that will be used to record these	0	0	1		

		notes so staff may provide feedback and offer ideas for editing the form. (C)					
42	A	2.9. Create and email a brief weekly newsletter (Monday Morning Message) to all school staff, key district office staff, select community members, and some retirees that is two or three paragraphs long and reinforces and reviews a component of your expectations (Premier Instruction, OWL, non-negotiables, over-arching focus area, or other instructional practices) among other school related topics. (A)	1	0	0		
43	A	2.10. Convey the same message regarding instructional leadership and informal classroom walk-throughs shared with the staff in Step 1.5.5 through 1.5.5.5 with various parent and community groups throughout the school year so they will understand your expectations (Premier Instruction, OWL, non-negotiables, over-arching focus area, or other instructional practices) and the informal walk-through process. (B)	0	1	0		
44	A	2.11. Anticipate push-back from the teacher's union due to increased expectations, claims that the informal walk-through process is evaluative, and addition of extra duties to the teachers' workloads. (B)	0	1	0		
		Procedure 3. Plan for the walk-throughs.				9	24
45	D	3.1(a). IF you are the only administrator assigned to the school, THEN proceed to Step 3.2. (A) 3.1(b). IF there is more than one administrator assigned to the school, THEN schedule and hold a weekly administrator's meeting. (A)	1	0	0		
46	A	3.1.1. Divide the campus evenly among the administrative team so every week at least one administrator	1	0	0		

		is in every classroom. (A)					
47	A	3.1.1.1. Rotate the way the classrooms are divided so that each administrator has the opportunity to see all of the classrooms on the campus. (A)	1	0	0		
48	D	3.1.1.2. IF during the previous week you did not have the opportunity to conduct informal walk-throughs in all or your assigned classrooms, THEN discuss with the rest of the administrative team not rotating the assigned classrooms that week AND visiting the same set of classrooms for two weeks in a row. (A, B)	1	1	0		
49	D	3.1.1.3. IF a specific teacher, grade level, or department has requested you to walk-through their classrooms, THEN ensure that your scheduled informal walk-throughs will enable you to visit those classrooms, AND even if that classroom(s) is not in your weekly rotation of classrooms to visit. (A, B)	1	1	0		
50	D	3.1.1.4. IF you had a follow-up meeting with a teacher as described in Step 5.11.5, THEN make sure to visit that classroom during the week, especially if/when invited by the teacher, AND even if that classroom is not in your weekly rotation of classrooms to visit. (A, B)	1	1	0		
51	D	3.1.2. For a high performing teacher, IF the administrative team has seen this teacher providing a high quality lesson or activity that is in the area where another teacher needs assistance, THEN ask the high performing teacher to teach a model lesson OR support another teacher on learning how to better deliver the lesson or activity. (A)	1	0	0		
52	D	3.1.3. For an average performing teacher, IF you or another administrator observed something during your informal walk-through	1	0	0		

		that was not consistent with the teacher's normal performance, THEN share the concern with the other administrators to get their input from their informal observations AND ensure the administrator who walks-through that classroom during the week looks for the same behavior to determine if there is a pattern of behavior. (A)					
53	A	3.1.4. For a low performing teacher, discuss what has been observed in his/her classroom every week and whether that teacher is improving toward meeting the expectations (Premier Instruction, OWL, non-negotiables, over-arching focus area, or other instructional practices). (A)	1	0	0		
54	D	3.1.5. IF the administrative team thinks a specific teacher who is being discussed needs feedback to meet the expectations (Premier Instruction, OWL, non-negotiables, over-arching focus area, or other instructional practices), THEN determine among the administrative team what type of feedback to provide and who will provide the feedback to the teacher. (A)	1	0	0		
55	D	3.1.6. IF an administrator has received a parent or student complaint regarding a teacher, THEN discuss what the administrative team has seen during the informal walk-throughs to confirm or refute the complaint AND focus on the teacher's performance during the next week's informal walk-throughs. (A)	1	0	0		
56	D	3.1.7. IF a teacher has sent a greater than normal number of students to the office for discipline referrals OR a greater than normal number students for detention, THEN discuss what the administrative team has seen during the informal walk-	1	0	0		

		throughs to explain the referrals and detentions AND focus on that teacher's performance during the next week's informal walk-throughs. (A)					
57	D	3.2. IF you are the only administrator assigned to the school, THEN consider the following prior to conducting your walk-throughs: (A, B)	1	1	0		
58	D	3.2.1. If certain classrooms were not visited during the last time you conducted informal walk-throughs, THEN start with the classrooms that were not visited last time. (A, B)	1	1	0		
59	D	3.2.2. IF a specific teacher or grade level has requested you to walk-through their classrooms, THEN ensure that your scheduled informal walk-throughs will enable you to visit that classroom(s). (A, B)	1	1	0		
60	D	3.2.3. IF you had a follow-up meeting with a teacher as described in Step 5.1.4.2, THEN make sure to visit that classroom during the week, especially if /when invited by the teacher, AND even if that classroom is not in your scheduled classrooms to visit that day. (A, B)	1	1	0		
61	D	3.2.4. For an average performing teacher, IF you observe something during your informal walk-through that was not consistent with the teacher's normal performance, THEN ensure you look for the same behavior to determine if there is a pattern of behavior. (A)	1	0	0		
62	A	3.2.5. For a low performing teacher, think about what has been observed in his/her classroom every week and whether that teacher is improving toward meeting the expectations (Premier Instruction, OWL, non-negotiables, over-arching focus area, or other instructional practices). (A)	1	0	0		
63	D	3.2.6. For a high performing teacher,	1	0	0		

		IF you have seen this teacher providing a high quality lesson or activity that is in the area where another teacher needs assistance, THEN ask the high performing teacher to teach a model lesson OR support another teacher on learning how to better provide the lesson or activity. (A)					
64	D	3.2.7. If you think a specific teacher who you are reflecting on needs feedback to meet the expectations (Premier Instruction, OWL, non-negotiables, over-arching focus area, or other instructional practices), THEN determine what type of feedback to provide and when to provide the feedback to the teacher. (A)	1	0	0		
65	D	3.2.8. IF you have received a parent or student complaint regarding a teacher, THEN think about what you have seen during informal walk-throughs to confirm or refute the complaint AND focus on that teacher's performance during the next week's informal walk-throughs. (A)	1	0	0		
66	D	3.2.9. IF a teacher has sent a greater than normal number of students to the office for discipline referrals OR a greater than normal number of students for detention, THEN think about what you have seen during informal walk-throughs to explain the referrals and detentions AND focus on that teacher's performance during the next week's informal walk-throughs. (A)	1	0	0		
67	A	3.3. Schedule daily classroom walk-throughs into your calendar, but do not tell the staff when you will be conducting informal walk-throughs as they are unannounced. (A)	1	0	0		
68	D	3.3.1. IF the informal walk-through observations were conducted at a	0	1	0		

		certain time of day during the prior observations, THEN try to conduct them at a different time of day. (B)					
69	A	3.4. Determine the focus from your expectations (Premier Instruction, OWL, non-negotiables, over-arching focus area, or other instructional practices) for the day's informal classroom walk-throughs based on what was communicated with the teachers in Step 2.8 and what you have determined to be the highest priority based on student achievement in Steps 3.1 or 3.2.(B, C)	0	1	1		
70	A	3.4.1. Based on the time of the school year, select a part of your expectations (Premier Instruction, OWL, non-negotiables, over-arching focus area, or other instructional practices) that are appropriate for the time of year (i.e. beginning of the year, establishing routines and patterns; middle of the year, maximizing learning and building on previous learning; etc.). (B)	0	1	0		
71	A	3.5. Select the number of classrooms to walk-through and how long to stay in each classroom based on time available to conduct walk-throughs and focus from your expectations (Premier Instruction, OWL, non-negotiables, over-arching focus area, or other instructional practices). (C)	0	0	1		
72	D	3.6. If the informal walk-through observation requires specific data that has to be recorded in the classroom in the moment in a specific way, THEN prepare to record the data according to the manner that was indicated to the staff in Step 2.8.1. (C)	0	0	1		
73	D	3.6.1. If a specific form or note-taking aide will be used, THEN make sufficient copies of the form or note-taking aide. (C)	0	0	1		

74	D	3.7. IF notes will not be taken while in the classroom, THEN prepare to take notes outside the classroom after conducting the informal walk-through observation by carrying a clipboard with paper for taking notes OR using your cell phone or IPad and sending yourself an email with your notes. (A, B, C)	1	1	1		
75	A	3.8. Inform the office staff that you will be conducting informal walk-throughs and for what length of time. (B)	0	1	0		
76	D	3.8.1. IF you have been interrupted over the past one or two informal walk-throughs for non-emergency situations, THEN remind the office staff that this time is dedicated to informal walk-throughs and you should only be interrupted in an emergency. (B)	0	1	0		
		Procedure 4. Observe the teacher in the classroom.				36	30
77	A	4.1. Open the door and walk into the classroom. (A, B, C)	1	1	1		
78	D	4.1.1. IF there are multiple entrances into a classroom, THEN use a different entrance and exit for each informal classroom walk-through. (B)	0	1	0		
79	A	4.2. Make eye contact with the teacher and smile so that the teacher will not think you are trying to be sneaky and to acknowledge that this is an informal walk-through. (A, C)	1	0	1		
80	D	4.3. IF you will be taking notes in the classroom during the informal walk-through, THEN begin to note observable data and write it down once observed. (C)	0	0	1		
81	A	4.4. Do not talk to the teacher or interrupt what the teacher is doing. (A, C)	1	0	1		
82	D	4.4.1. IF you need to talk to the teacher, THEN move to the front of the classroom AND keep eye contact	1	0	0		

		AND wait for the teacher to ask if you need something AND depending on the content of the conversation talk to the teacher either inside or outside of the classroom. (A)					
83	A	4.4.2. Keep a “poker face” and neutral demeanor while in the classroom. (B)	0	1	0		
84	A	4.5. Walk to the back of the classroom or where you can observe the most from one location but be as least disruptive as possible. (A, B)	1	1	0		
85	A	4.5.1. Move throughout the classroom and observe from multiple vantage points. (B)	0	1	0		
86	A	4.6. Look around the entire classroom taking in all four walls, the students, how the room is organized, what is being presented and displayed, and the teacher. (A, B)	1	1	0		
87	A	4.6.1. Evaluate if the items displayed are accessible and available for student use, preferably student work product. (A)	1	0	0		
88	A	4.7. Scan the front of the classroom for a posted daily agenda and identify that the lesson or activity matches what the teacher has posted on the daily agenda. (A, B)	1	1	0		
89	A	4.8. Look at what is projected, written on the board, or being given to the students for evidence of the objective. (A, B)	1	1	0		
90	A	4.9. Observe the students, where the action is taking place in the classroom, and look at what the students are doing. (A, C)	1	0	1		
91	A	4.10. Observe whether the students are participating in a lesson or an activity and identify if what the students are doing matches the objective. (A, C)	1	0	1		
92	A	4.10.1. Identify whether it is an instructional day or activity day by trying to determine where the teacher	1	0	1		

		is in the instructional process. (A, C)					
93	D	4.10.2. IF it is an instructional day, THEN the teacher is teaching a lesson. (C)	0	0	1		
94	D	4.10.2.1. IF the teacher is teaching a lesson, THEN look for the objective of the lesson to be posted at the front of the classroom in student friendly language AND identify if the instruction is enabling the students to reach the objective. (C)	0	0	1		
95	D	4.10.2.2. IF you determine that students are meeting the posted objective, THEN do not proceed to STEP 4.11 indicating to the teacher that you recognize the lesson is going well and you are observing instruction that meets the posted objective. (C)	0	0	1		
96	D	4.10.2.3. IF the teacher is teaching a lesson AND no objective is posted, THEN remember this information to record in your notes AND to provide feedback to the teacher. (C)	0	0	1		
97	D	4.10.3. IF you cannot determine where the teacher is in the instructional process within approximately five minutes, THEN it is an activity day. (A)	1	0	0		
98	D	4.10.3.1. IF it is an activity day OR you cannot determine the objective of the lesson, THEN move to Step 4.11. (C)	0	0	1		
99	D	4.11. IF it will not interrupt a student's learning or a group activity, unobtrusively speak with a student and ask them what they are learning today and why. (A, B, C)	1	1	1		
100	D	4.11.1. IF the student cannot tell you what he/she is learning OR the task does not match the objective, THEN unobtrusively ask another student what they are learning today AND keep asking additional students until you get an answer. (A, B, C)	1	1	1		
101	A	4.11.1.1. Remember the names of the	0	1	0		

		students or where they are sitting to discuss with the teacher during feedback. (B)					
102	D	4.11.1.2. IF multiple students do not know the objective OR the task does not match the objective AND the students are not learning the intended materials, THEN remember to record this information in your notes AND remember to send the teacher an email outside of the classroom or give the teacher a hand written note to see you after school in order to discuss the observation. (B, C)	0	1	1		
103	D	4.11.2. IF the student understands the objective and the task matches the objective, THEN continue the informal observation AND speaking to additional student(s) is optional. (B, C)	0	1	1		
104	A	4.11.2.1. While speaking with the student, observe what work the student is producing and determine if it matches your expectations for that portion of the lesson. (A)	1	0	0		
105	A	4.12. Look for student engagement by determining what the students are doing and/or producing and if it is connected to what the teacher intends for them to learn/do, in other words, the activities match the objective. (A)	1	0	0		
106	A	4.13. Observe the balance between students working independently and depending upon their peers. (C)	0	0	1		
107	D	4.14. IF students are working in cooperative groups, THEN distinguish whether or not all students understand the materials AND whether students could serve in any role required to complete the task. (C)	0	0	1		
108	A	4.15. Observe the teacher's actions. (A, C)	1	0	1		
109	A	4.16. Look for evidence of your expectations (Premier Instruction,	1	0	1		

		OWL, non-negotiables, over-arching focus area, or other instructional practices). (A, C)					
110	A	4.17. Observe classroom management and discipline issues. (C)	0	0	1		
111	A	4.18. Observe the rapport and positive classroom environment that is being built between the teacher and the students by looking for the following: (C)	0	0	1		
112	A	4.18.1. Distinguish if students feel safe and supported to take risks and try new experiences by observing if they will answer questions when they are not completely certain of the answer. (C)	0	0	1		
113	A	4.18.2. Observe which students are asked to answer questions and how the teacher responds to the students in order to see if even incorrect responses are received positively (not using terms such as "wrong answer"), questions are open-ended versus "yes/no," and students do not feel ridiculed. (C)	0	0	1		
114	A	4.18.3. Identify the teacher's style for interacting with the students (i.e. humor, caring, etc.) and look for visual cues of how the students respond to this interaction. (C)	0	0	1		
115	A	4.18.4. Identify any students who are "pushing a teacher's buttons" and remember these occurrences to be recorded in your notes outside the classroom for later discussion with the teacher noting the triggers for the students' behavior and the teacher's response(s). (C)	0	0	1		
116	A	4.18.5. Identify students who are responding with "I don't know," or shrugging their shoulders and how the teacher encourages their participation. (C)	0	0	1		
117	A	4.18.6. Observe students who do not seem to understand the instruction or	0	0	1		

		the activity and how the teacher encourages or supports them. (C)					
118	A	4.18.7. Look for students who do not raise their hands or try to answer question to see if the teacher involves them and encourages their participation. (C)	0	0	1		
119	A	4.18.8. Observe students' body language and how the teacher reacts to the different types of body language in the classroom. (C)	0	0	1		
120	A	4.18.9. Identify how and what students use in the room environment as a tool to assist them with learning during lessons and activities. (C)	0	0	1		
121	A	4.18.10. Notice how long the teacher waits between asking a question and calling on a student to answer (wait time) and how that impacts the number of students volunteering to answer questions. (C)	0	0	1		
122	D	4.19. IF you identify students in the classroom who are identified for intervention or specialized instruction (Special Education students, GATE students, etc.), THEN identify the strategies (preview/review, collaborative groups, total physical response, sentence frames, depth and complexity icons, etc.) that the teacher is using and how they are helping the identified students. (D)	0	0	0		
123	D	4.19.1. IF the teacher is not using any differentiated strategies to assist students identified for intervention or specialized instruction OR the strategies are not being used appropriately, THEN note the information and remember the information to record in your notes once outside the classroom. (D)	0	0	0		
124	A	4.20. Look for the use of classroom technology. (C)	0	0	1		
125	D	4.20.1. IF classroom technology is	0	0	1		

		being used, THEN determine the level and type of usage AND remember the information to record in your notes once outside the classroom. (C)					
126	A	4.20.2. Ask the student about the technology to determine if it is enhancing their learning, working appropriately, and creating minimal distractions. (C)	0	0	1		
127	D	4.21. IF the teacher has been placed on a Plan for Improvement based on a history of performance problems, THEN observe whether the areas addressed in the Plan for Improvement are being implemented in the classroom AND note the deficiencies and improvements AND provide feedback in Steps 5.13 and 5.14. (C)	0	0	1		
128	D	4.22. IF you observe an extreme situation in the classroom in which student are at risk of harm, there is extreme misbehavior, there is a violation of school or district rules, or the teacher is presenting information inaccurately so the students will learn the information incorrectly, THEN discreetly approach the teacher and inform the teacher that there is a serious situation which needs to be addressed immediately. (B)	0	1	0		
129	D	4.23. IF there is exemplary implementation of one or more of your expectations (Premier Instruction, OWL, non-negotiables, over-arching focus area, or other instructional practices), THEN ask the teacher if you can take a picture or video AND use you r IPad or your phone to take a picture to provide positive feedback to the teacher/grade level OR present to the entire staff during a staff meeting. (B, C)	0	1	1		

130	A	4.24. Observe to see if there are any parents in the classroom. (C)	0	0	1		
131	D	4.24.1. If parent volunteers are in the classroom, THEN acknowledge their presence by smiling, making eye contact, and speaking with them in an unobtrusive manner to thank them for volunteering. (C)	0	0	1		
132	D	4.24.2. IF parent volunteers are in the classroom and the lesson or activity is not going smoothly, THEN speak to the parent in an unobtrusive and non-judgmental manner letting the parent know that you have recognized the current classroom condition but are supporting the teacher's professionalism with a phrase such as, "It looks like (Student Name) may be having a difficult day and (Teacher Name) has his/her hands full. He/she is lucky to have such dedicated parent volunteers like you." (C)	0	0	1		
133	A	4.25. Spend at least 5 minutes but not more than 15 minutes in each classroom. (A, B)	1	1	0		
134	D	4.25.1. IF you have gathered data from observing where the teacher is in the instructional process, looking at teacher behaviors, talking to a student(s), looking at what a student(s) is producing, and looking at the room environment; THEN prepare to exit the classroom. (A)	1	0	0		
135	A	4.26. Prior to leaving the classroom, double-check the data that you have from your informal walk-through and decide whether or not to provide feedback to the teacher based on specific observations from the classroom that have the highest possibility of affecting student learning and remember specific information to note once outside of the classroom. (A, B, C)	1	1	1		

136	D	4.26.1. If you will not be providing the teacher with feedback from your informal walk-through because the teacher is meeting your expectations, THEN unobtrusively get the teacher's attention and give him/her a "thumbs-up" or a nod on your way out the door AND remember to send an email to yourself or take written notes when you are outside the classroom for you own notes or journaling. (A, B)	1	1	0		
137	D	4.26.2. IF you will be providing positive feedback to the teacher, THEN decide what positive information you will share with the teacher from what you have observed AND what the next suggested steps are for the teacher to work on AND remember to send yourself an email or take written notes when you are outside the classroom for your own notes or journaling. (B)	0	1	0		
138	D	4.26.3. IF you will be providing suggestions or asking reflective questions of the teacher based on a practice that needs improvement, THEN unobtrusively get the teacher's attention and give him/her a "thumbs-up" or a nod on your way out of the door AND remember to send an email to yourself or take written notes with a suggestion or reflective question when you are outside the classroom. (A, B)	1	1	0		
139	D	4.26.4. IF you will be providing feedback that is critical or urgent, THEN make eye contact with the teacher when you exit the classroom if you are able BUT do not give a "thumbs-up" AND remember to send the teacher an email or hand the teacher a written note to see you in your office after school. (A)	1	0	0		
		4.27. Exit the classroom if one or	1	1	1		

		more of the following conditions occur: (A, B, C)					
140	D	4.27.1. IF you have collected enough data to make a decision about providing follow-up information to the teacher, THEN exit the classroom. (A, B, C)	1	1	1		
141	D	4.27.2. IF you have been called on the radio and are needed elsewhere, THEN exit the classroom. (C)	0	0	1		
142	D	4.27.3. IF the classroom environment is uncomfortable for the teacher or the students are having an awkward moment due to what is happening in the classroom, THEN exit the classroom. (C)	0	0	1		
143	D	4.27.4. IF it is not a dangerous or harmful situation, THEN exit the classroom. (C)	0	0	1		
		Procedure 5. Provide feedback to the individual teachers.					
144	A	5.1. Once outside the classroom, use paper to take notes or use your IPad or cell phone to send a short email (2-3 sentences) that will be for your reference, which will include: what was observed, what needs to be reinforced with the teacher, how it will be reinforced, what support will be provided through professional development and coaching, what positive feedback will be provided to the individual or entire staff, and what connections should be made among the staff for collaborative support. (A, B, C)	1	1	1		
145	D	5.1.1. IF there is more than one administrator assigned to the school AND you saw, heard, or felt something that you want to remember BUT are not sure what you will do with the information, THEN share the note or email during the weekly administrator's meeting AND decide what to do with the information during the next	1	0	0		

		administrator's meeting (Steps 3.1.2 through 3.1.5). (A)					
146	D	5.1.2. IF you are the only administrator assigned to the school AND you saw, heard, or felt something that you want to remember BUT are not sure what you will do with the information, THEN review the notes or email AND decide what to do with the information after reflecting on it. (A, B)	1	1	0		
147	D	5.2. IF you will provide feedback to the teacher, THEN make every effort to start verbal or written (email) feedback with something you observed during your walk-through of the classroom that was positive. (A, B)	1	1	0		
148	D	5.3. IF you will provide feedback to the teacher that involves areas of improvement, THEN offer ways that you will help the teacher AND show your willingness to be a resource or provide resources to work with the teacher to find solutions so the feedback is not viewed as a "gotcha." (B)	0	1	0		
149	A	5.3.1. Ensure that the teaching staff hears you say and sees you actions which demonstrate you do not have all the answers but that you are also a learner and are willing to work with them to find answers. (B)	0	1	0		
150	A	5.3.2. Based on the time of the school year, provide feedback to the teacher from your informal walk-throughs based on what you would expect to see at that time of the year and the amount of stress that teachers are experiencing. (A)	1	0	0		
151	D	5.3.2.1. IF a teacher is under pressure due to the time of the year OR a personal situation (illness, family illness, divorce, death, etc.) AND the teacher's performance is not	1	0	0		

		significantly impacting student learning, THEN write a note or send an email to yourself AND save the note or email for a less stressful time to discuss with the teacher and for your own journaling. (A)					
152	D	5.3.2.2. IF a teacher is under pressure due to the time of the year OR a personal issue (illness, family illness, divorce, death, etc.) AND the teacher's performance is significantly impacting student learning over more than one day, THEN give the teacher a note or send an email to the teacher to come see you after school and discuss what can be done to lessen the impact upon student learning. (A)	1	0	0		
153	D	5.4. IF the teacher approaches you in an informal (hallway) setting for feedback on what was occurring in his/her classroom when you walked-through, THEN try to find a more private location in which to talk AND let the teacher do the majority of the talking AND attempt to build the teacher's confidence by asking reflective questions (no more than 2) that will help strengthen and refine the teacher's strategies to address your expectations (Premier Instruction, OWL, non-negotiables, over-arching focus area, or other instructional practices). (A, B, C)	1	1	1		
154	D	5.4.1. IF the conversation with the teacher will take more than a few minutes or is sensitive in nature, THEN politely ask the teacher to see you at the end of the school day in your office in order to give you the "gift of time" to meet the teacher in an unrushed manner and develop your response in advance. (B)	0	1	0		
155	D	5.5. IF the informal walk-through observation results in information that needs immediate attention, is	1	1	1		

		dangerous or harmful, a safety hazard, breaks school or district rules, or is critical or urgent in nature because it impacts student learning, THEN give the teacher a written note and send an email to the teacher to meet with you after school that day in your office with a union representative AND schedule the meeting on your calendar. (A, B, C)					
156	D	5.5.1. IF a negative situation needs to be discussed with a teacher, THEN have that discussion behind closed doors with the individual teacher directly involved. (B)	0	1	1		
157	D	5.5.2. IF the teacher shows an area of strength, THEN begin by discussing that area of strength in order to build the teacher's confidence and open a door to address the areas where the teacher needs to improve. (C)	0	0	1		
158	A	5.5.3. Attempt to discover what may have led to this teacher's actions or lack of action, and provide support and coaching to enable the teacher to improve in order to not repeat the same behavior. (C)	0	0	1		
159	A	5.5.4. Be honest and use observation data collected during the informal walk-throughs when addressing areas that need improvement. (B)	0	1	0		
160	D	5.6. IF a student is "pushing a teacher's buttons," THEN discuss the situation with the teacher AND brainstorm strategies for dealing with students with challenging behaviors, reacting appropriately, and recognizing triggers. (C)	0	0	1		
161	D	5.7. IF you are in a classroom for longer than five to seven minutes, THEN inform the teacher what captured your interest and why you stayed longer than normal. (B)	0	1	0		
162	D	5.8. IF you observed exemplary implementation of your expectations, THEN send an email, give the	1	1	1		

		teacher positive feedback when passing him/her in the hallway, or give a short personalized note (the more preferred method) to the teacher specifically noting the teacher's effective use of strategies AND how they relate back to your expectations. (A, B, C)					
163	D	5.8.1. IF you are sending an email AND you took a picture in the classroom, THEN attach that picture to the email as evidence of excellent implementation of your expectations. (B)	0	1	0		
164	D	5.9. IF you observed above average implementation of your expectations AND you have provided positive feedback to the teacher recently, THEN provide feedback to the teacher if/when you pass him/her in the hallway. (A)	1	0	0		
165	D	5.10. IF you observed average implementation of your expectations AND the teacher showed areas that need small modifications related to your expectations THEN have an informal conversation with the teacher in the hallway, his/her classroom, or through email AND provide encouragement to try something new or different in order to improve his/her skills related your expectations. (C)	0	0	1		
166	D	5.10.1. IF you decide to provide the teacher with feedback in the hallway or in his/her classroom, THEN without students present ask the teacher one or two reflective questions designed to help the teacher reflect on his/her practices related to your expectations AND do not expect an answer. (A, C)	1	0	1		
167	D	5.10.2. IF you decide to provide the teacher with feedback through email, THEN provide specific suggestions in your email that you think would	1	0	1		

		help the teacher more effectively meet your expectations OR reflective questions (no more than two) for the teacher to consider AND do not expect a response from the teacher. (A, C)					
168	D	5.11. IF you observed a poor implementation of your expectations, THEN give the teacher a written note and send an email to the teacher to meet with you after school within the next 24 hours in your office AND schedule the meeting on your calendar. (C)	0	0	1		
169	A	5.11.1. Hold a meeting with the teacher that is positive and supportive in nature using a conversational style of communicating to explain what you observed in the classroom; discuss your expectations with the teacher; and establish a timeline for support, coaching, and implementing your expectations. (A, C)	1	0	1		
170	A	5.11.2. Provide the teacher with coaching and individual professional development in the areas where it is needed. (C)	0	0	1		
171	D	5.11.3. IF operational issues (library time, special education mainstreaming, etc.) are impacting instruction, THEN find a solution to make changes that will maximize the best use of students' time in the classroom. (C)	0	0	1		
172	D	5.11.4. IF multiple students indicated that they were having difficulty understanding the material that was being presented in the lesson (Step 4.10.2.3) OR they indicated that they did not understand the objective of the activity (Step 4.11.1.2), THEN ask the teacher how he/she will provide support or reteach the materials to the students who do not understand. (C)	0	0	1		

173	A	5.11.5. Tell the teacher, you are going to come back to walk-through the classroom again and suggest that the teacher invite you into the classroom the next time he/she will be providing a lesson that he/she would like you to see, demonstrating that the teacher is attempting to improve his/her practice. (A)	1	0	0		
174	D	5.11.6. IF the teacher is showing a repeated pattern of poor performance AND your attempts to coach and assist the teacher are not changing behavior, THEN save the emails with this observational information to note reoccurring patterns (positive or negative) or behaviors that are not changing for documentation to begin the progressive discipline process. (A)	1	0	0		
175	D	5.12. IF a teacher was identified to receive feedback in Step 3.1.5 or 3.2.7, THEN ensure that teacher receives the feedback AND reflect on how the feedback was received in order to plan next steps. (A)	1	0	0		
176	D	5.13. IF a teacher has been placed on a Plan for Improvement based on a history of poor performance AND is implementing your expectations in an average to above average manner, THEN hold a conference with the teacher to reinforce the positive behavior observed during the informal walk-through observations and encourage more of this behavior. (C)	0	0	1		
177	D	5.14. IF a teacher has been placed on a Plan for Improvement based on a history of poor performance AND is not implementing your expectations, THEN give the teacher a written note and send an email to the teacher to meet with a union representative AND provide a written disciplinary document to the teacher. (C)	0	0	1		

178	D	5.15. IF the informal walk-through observation data does not match what has been observed during formal observations, THEN discuss this disparity between the two pieces of observation data with the teacher. (A, C)	1	0	1		
179	D	5.15.1. IF the teacher's performance during the formal observation was not up to the same level as the informal walk-through data AND the teacher communicates that there were extenuating circumstances (i.e. personal tragedy, medical issues, higher than normal stressors, etc.), THEN permit the teacher to redo his/her formal observation. (C)	0	0	1		
		Procedure 6. Provide feedback to the entire teaching staff.				2	1
180	A	6.1. Avoid providing negative feedback to the entire staff when feedback should be directed toward specific staff members. (B)	0	1	0		
181	A	6.2. Provide positive feedback publically to the entire staff through the weekly bulletin (Monday Morning Message) or at the staff meeting without using the specific teacher's name to reinforce your expectations and to enable multiple staff members to potentially recognize that you are complimenting them. (A)	1	0	0		
182	D	6.3. IF you have taken a picture(s) or video(s) in an individual teacher's classrooms AND he/she has given you permission to show the picture(s) or video(s) to the entire staff, THEN use the picture(s) or video(s) to reinforce the positive example of the implementation of your expectations. (B, C)	0	1	1		
		Procedure 7. Communicate with the Leadership Team and plan next steps.					
183	A	7.1. Meet regularly (at least monthly)	1	1	1		

		with your Leadership Team (Staff members at the school who are respected by their peers and recognized as understanding and delivering quality instruction) to discuss the school's current progress toward meeting your expectations and new ideas, techniques, or methods that may be introduced to the staff through professional development. (A, B, C)					
184	D	7.1.1. IF informal walk-through data OR school assessment data OR feedback from the Leadership Team indicates that more than 50% of the teachers are not effectively implementing your expectations, THEN provide ongoing professional development for this specific expectation. (B, C)	0	1	1		
185	D	7.1.2. IF informal walk through data OR school assessment data OR feedback from the Leadership Team indicates that less than 50% of the teachers are not effectively implementing your expectations, THEN meet with the teachers who are not effectively implementing your expectations AND establish an individualized professional development plan which may include one of the following strategies: (C)	0	0	1		
186	A	7.1.2.1. Release the teacher from his/her daily teaching duties with a substitute during the instructional day to observe another teacher who implements your expectations well based on what you have observed during your informal walk-through observations. (B, C)	0	1	1		
187	A	7.1.2.2. Release the teacher from his/her daily teaching duties with a substitute during the instructional day to walk-through classrooms with you or an instructional coach to see examples of your expectations in	0	1	1		

		application. (B, C)					
188	A	7.1.2.3. Schedule a one-on-one meeting with the teacher and you or an instructional coach to review your expectations and develop an implementation plan. (B, C)	0	1	1		
189	A	7.1.2.4. Send the teacher to a professional development workshop outside the school specific to your expectations. (C)	0	0	1		
190	A	7.1.2.5. Use teacher preapproved pictures and videos collected during your informal walk-through observations to give the teacher examples from your own staff of how to implement your expectations. (B, C)	0	1	1		
191	A	7.1.2.5.1. Refrain from showing a picture or video from a teacher's classroom to anyone else unless permission is obtained from the teacher. (B)	0	1	0		
192	A	7.1.3. Discuss and plan the next steps for new professional development related to demonstrating greater mastery of your expectations. (B, C)	0	1	1		
193	A	7.1.3.1. Identify patterns of teacher performance related to the elements of your expectations by teacher, grade level, or school that will be used in Step 7.1.3. (B, C)	0	1	1		
194	A	7.1.4. Provide professional development in Step 2.5. (A, B, C)	1	1	1		
		Procedure 8. Facilitate personal reflection.				2	0
195	A	8.1. Use recurring trends, informal walk-through observation data, the content for the notes and emails you have written, and the input of the Leadership Team for personal reflection on the where the school has come from, where the school is headed, and how you as a leader will help the school continue to move forward by providing greater support to the teachers. (B)	0	1	0		

196	A	8.1.1. Discuss recurring trends with the assistant superintendent of instruction to see if your observations and reflections are a larger district-wide issue which requires district-wide professional development. (B)	0	1	0		
	196	Total Action and Decision Steps	**82**	**84**	**100**	105	91
	105	Action Steps	35	49	58		
	91	Decision Steps	47	35	42		

Total Action and Decisions Steps	**41.84%**	**42.86%**	**51.02%**
Action Steps	33.33%	46.67%	55.24%
Decision Steps	51.65%	38.46%	46.15%

Action and Decision Steps Omitted	**114**	**112**	**96**
Action Steps Omitted	70	56	47
Decision Steps Omitted	44	56	49

Action and Decision Steps Omitted	**58.16%**	**57.14%**	**48.98%**
Action Steps Omitted	66.67%	53.33%	44.76%
Decision Steps Omitted	48.35%	61.54%	53.85%

Average	Captured	Omitted
Total Action and Decision Steps	45.24%	54.79%
Action Steps	45.08%	54.92%
Decision Steps	45.42%	54.58%