

Exploring Instructional Coaches' Attitudes and Use of the DataCapture
Mobile Application to Collect Video-Based Evidence in Teacher Evaluation

by

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A Dissertation Presented in Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy

Approved July 2013 by the
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ARIZONA STATE UNIVERSITY

August 2013

ABSTRACT

An integral part of teacher development are teacher observations. Many teachers are observed once or twice a year to evaluate their performance and hold them accountable for meeting standards. Instructional coaches, however, observe and work with teachers to help them reflect on their performance, with the goal of improving their practice.

Video-based evidence has long been used in connection with teacher reflection and as the technology necessary to record video has become more readily available, video recordings have found an increasing presence in teacher observations. In addition, more and more schools are turning to mobile technology to help record evidence during teacher observations. Several mobile applications have been developed, which are designed to help instructional coaches, administrators, and teachers make the most of teacher observations.

This study looked at the use of the DataCapture mobile application to record video-based evidence in teacher observations as part of an instructional coaching program in a large public school district in the Southwestern United States. Six instructional coaches and two teachers participated in interviews at the end of the study period. Additional data was collected from the DataCapture mobile application and from a survey of instructional coaches conducted by the school district in connection with its Title I programs.

Results show that instructional coaches feel that using video-based evidence for teacher reflection is effective in a number of ways. Teachers who have experienced seeing themselves on video also felt that video-based evidence is effective at improving

teacher reflection, while teachers who have not yet experienced seeing themselves on video displayed extreme apprehensiveness about being video recorded in the classroom. Instructional coaches felt the DataCapture mobile application was beneficial in teacher evaluation, but there were several issues that impacted the use of the mobile application and video-based evidence, including logistics, time requirements, and administrative support.

The discussion focuses on recommendations for successfully using video-based evidence in an instructional coaching context, as well as some suggestions for other researchers attempting to study how video-based evidence impacts teachers' ability to reflect on their own teaching.

DEDICATION

This dissertation is dedicated to my wife, Maya, and my children, Mahealani, Adam, Ian, Alexandra, and Ethan, for staying by my side during the entire process, and for all the times I had to say, “No” because I was busy working on this dissertation.

ACKNOWLEDGMENTS

I want express my gratitude to my committee chair, Dr. Gary Bitter, for all his encouragement and suggestions as I worked to finish this dissertation, Without his help, I know it would have been impossible. I also want to thank Dr. Heidi Blair for her help and suggestions in designing the study, and for the original idea. In addition, I want to thank Dr. Edwin Dawson for his help with research methods, and literature suggestions, many of which I wouldn't have found without his help.

I also need to thank the good people at the Sunnyside Unified School District, who participated and assisted with this study. In particular, Dr. Debbie Bergman was instrumental in helping me contact the instructional coaches and recruiting them to participate in this study. I want to acknowledge the instructional coaches who took time out of their busy schedules to be interviewed and reply to several emails. I also want to thank the teachers, who gave up part of their planning period to sit in an interview with me. I appreciate your help in gathering important data regarding this topic.

I want to acknowledge Susan Heydorn, in the Graduate Advising Office of the Mary Lou Fulton Teachers College, for her encouragement and support in meeting the deadlines for submitting this dissertation, and for her assistance during the entire process. I also want to thank my colleagues at the American English and Culture Program, who heard me constantly say, "I am not available right now. I am working on my dissertation."

Finally, I need to say thank you to my family, who sacrificed for me during the procees of doing the study and writing the dissertation. I know how much you missed me and how much you gave up so that I could have the time I needed to finish.

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Chapter 1

INTRODUCTION

“One of the potentially most powerful forms of self-assessment is the opportunity to ‘see ourselves as others see us’ through video recording” (Carroll, 1981, p. 193).

An integral part of teacher development is teacher observation (Lamb & Swick, 1975). Many teachers are observed once or twice a year to evaluate their performance and hold them accountable for meeting standards (Weisberg, Sexton, Mulhern & Keeling, 2009). Some observations are done, however, with the purpose of helping teachers improve their practice. One such type of teacher observation is instructional coaching (Knight, 2006), where mentors observe and work with teachers to help them reflect on their performance.

Video has been used as part of teacher observation and to help teachers reflect on their performance since the mid-1960s (Fuller & Manning, 1973). As the technology necessary to record video has become more readily available, video recordings have found an increasing presence in teacher observations (Grossman, 2005). Tripp and Rich (2012) reviewed more than 63 studies that examined the use of video in self-reflection by teachers, but there is not a single mention of instructional coaching. Indeed, there is very little literature on the use of video recordings in an instructional coaching context. Thus, more research is needed in order to determine how video-based evidence can be used in an instructional coaching context to help teachers improve their practice.

In addition, more and more schools are turning to mobile technology to help record evidence during teacher observations. Several mobile applications have been developed, which are designed to help instructional coaches, administrators, and

teachers make the most of teacher observations. However, none of these solutions incorporate video-based evidence into their systems. This study looked at the use of a mobile application to record video-based evidence in teacher observations as part of an instructional coaching program in a large public school district in the Southwestern United States.

Definition of Important Terms

This section defines important terminology as used throughout this dissertation. These definitions will help the reader understand how certain vocabulary are used in the context of this study.

Attitudes — indicates the participant’s way of thinking about a particular topic

Coach — used to refer to an instructional coach (see below)

Evidence — refers to material that proves a teacher’s strength or weakness in a specific aspect of teaching

In-service teacher — a person who teaches in a public or private elementary, middle, or high school

Instructional coach — an experienced teacher whose job is to help other teachers improve their practice by guiding and providing support

Internet Protocol (IP) camera — a camera that can be connected to a network using an internet protocol address, allowing remote access and other features

Mobile application — refers to software designed specifically for a mobile device such as a smartphone or a tablet computer

Observation — when a person who is not the teacher watches all or some of a lesson period

Pre-conference — a meeting between a teacher and an instructional coach held prior to a classroom observation during which objectives for the observation are typically discussed

Pre-service teacher — a person enrolled in a teacher training program, typically at the Bachelors degree level

Reflection — thinking about one’s performance with the goal of improvement

Reflection conversation — a meeting between an instructional coach and a teacher where they discuss the observation performance and reflect on future actions

Title I — a section of the Elementary and Secondary Education Act of 1965, which provides federal funding to schools across the United States to improve the academic achievement of disadvantaged students

Title I programs — programs in a school or district that focus on disadvantaged students and use federal funding

Walk-Through — a short observation, typically lasting about 15 minutes or less, where the observer focuses on a specific aspect of teaching

Overview of the Problem

Many studies have shown that student achievement increases when teachers are effective (Aaronson, Barrow & Sander, 2007; Rivkin, Hanushek & Kain, 2005; Rockoff, 2004; Slater, Davies & Burgess, 2012). Thus, teachers are continually striving to find more effective methods of helping students learn. An important part of becoming more effective teachers is reflection (Schön, 1983), and helping teachers reflect is an essential part of instructional coaching (Knight, 2007; Rodgers & Rodgers, 2007; Shanklin, 2006; Toll, 2005).

Video is a powerful tool in helping teachers reflect (Carroll, 1981; Athanases, 1993; Calandra, Brantley-Dias & Dias, 2006). Yet, while several studies have examined the impact of video on the reflection of teachers (Cuper, Gong, Farina & Manning-Osborn, 2007; Dawson, Dawson & Forness, 2001; Deasy, Heitzenroder, Wienkee & Bloom, 1991; Halter, 2006; Tripp, 2009; Wedman, Espinosa & Laffey, 1999), there are almost no studies that examine the use of video for reflection in an instructional coaching context. Because of the nature of instructional coaching, there are several important differences in the way video-based evidence can be used in that context versus other contexts where teacher observations occur (Knight, 2007; Vogt & Shearer, 2011). Thus, more research is needed in this area to determine how video evidence can be effectively used for reflection in an instructional coaching context.

Purpose of the Study

The purpose of this mixed methods study was to determine how video-based evidence is used as part of the instructional coaching program in a large public school district in the Southwestern United States. A mobile application has been developed for the iPad that allows instructional coaches to collect video-based evidence while doing teacher observations. Prior to this study, the mobile application had been in use in the school district for approximately seven months; however the use of video-based evidence was sporadic. Several instructional coaches were invited to record video as part of their coaching duties for approximately two months, after which interviews were conducted to determine how video-based evidence was used, and how it impacted the instructional coaching process. In addition to the interviews, data from the mobile application and

from a school district survey of Title I Personnel were analyzed to answer this study's research questions articulated below.

Data Capture Mobile Application

The DataCapture mobile application allows users to collect video and photographic evidence during an observation directly in the application. Users can then annotate the video recordings and upload them to the database immediately. In addition, the application has the observation forms in tandem with the video recordings, so that users can tie the video recordings to specific sections on the evaluation form.

The DataCapture mobile application was designed by the Technology-Based Learning and Research (TBLR) group at Arizona State University. It was developed with funding from the ASU NEXT Teacher Quality Partnership (TQP) Grant awarded to the Mary Lou Fulton Teachers College at Arizona State University by the U.S. Department of Education. The application is unique in the way it integrates video and photographic evidence with the appropriate observation forms. It also has built-in aggregate reporting features that allow users to quickly see how many reports are being submitted, and by whom, thus making it ideal for both instructional coaches and administrators alike. This study sought to determine participants' attitudes toward using the application as part of the instructional coaching process.

Research Questions

This study sought to answer the following research questions:

1. What are instructional coaches' and teachers' attitudes toward the use of video-based evidence in teacher observations in an instructional coaching context?

2. What are instructional coaches' attitudes toward the use of the DataCapture mobile application in an instructional coaching context?
3. How is video-based evidence used in teacher observations in an instructional coaching context?
4. How do issues such as logistics, time requirements, or administrative support impact the use of video-based evidence and the DataCapture mobile application in an instructional coaching setting as perceived by coaches and teachers?

Limitations of the Study

This study was conducted with K-12 in-service teachers and instructional coaches in a large public school district. Thus the results and conclusions of the study may not be generalizable to other teacher evaluation settings, such as university professors, or pre-service teachers. Additionally, because the study involved the use of a mobile application produced specifically for the purpose of conducting teacher observations, the results may not be generalized to other settings not utilizing the application.

Organization of Chapters

This dissertation is divided into five major chapters. This chapter includes an introduction, an overview of the problem, the purpose of the study, the research questions, and limitations of the study. Chapter 2 includes a review of the relevant literature pertaining to the instructional coaching process and the use of video-based evidence in teacher observation. This includes a look at several aspects of organizational infrastructure and administrative procedures that impact the implementation of using video-based evidence in the instructional coaching process, such as the available

technology and the limited time available to coaches and teachers. Chapter 3 explains the methods used for this dissertation, including a description of the participants, the instruments used to collect the data, the procedures followed during the study, and an explanation of how the data was analyzed. Chapter 4 provides the results of the analysis of the data collected during the study. Chapter 5 discusses these results, draws conclusions based on the results, outlines implications of the study and make suggestions for future research.

Chapter 2

REVIEW OF LITERATURE

In order to understand how video-based evidence can be used effectively in an instructional coaching context, it is important to first understand the background behind teacher observations and the concepts that influence the coaching process. The literature review begins with a brief history of teacher evaluation followed by a definition of instructional coaching. Next, it outlines six different instructional coaching models and discusses several characteristics of effective coaches. Finally, the review looks at the use of technology to collect video-based evidence in teacher evaluation and discusses issues that impact the use of video-based evidence in an instructional coaching context.

A Brief History of Teacher Evaluation

Classroom observation has been a part of school culture in America since 1642 (Spears, 1953), but the focus of the observations and the responsibility for those observations has varied through the years (Lamb & Swick, 1975). Originally, observations were conducted for control and inspection purposes by lay people in the town (Barr & Burton, 1938). As towns grew and more teachers were added to individual schools, observations were done by newly instated supervisors and administrators, but the focus was still on control and inspection (Ayer & Barr, 1928; Barr & Burton, 1938; Spears, 1953).

During the first half of the twentieth century, several instruments were created to help observers measure student and teacher behavior during observations (Horn, 1915/2008; Puckett, 1928; Spears, 1953; Wagner, 1920). These instruments were aimed at describing teacher behavior in different classroom settings, and assessing if

teacher behavior reflected the values of the community (Franseth, 1961). One influential observation system, called the Flanders System of Interaction Analysis (Flanders, 1960) shaped the categories and methodology of many of the observation systems that followed (Lamb & Swick, 1975). Many of these observation systems were used more for research purposes rather than specifically for teacher training or assessment (Bellack, 1966; Borg & Gall, 1971; Engelhart, 1972; Kerlinger, 1973); however, some developed by professional organizations were specifically designed for assessing teacher performance and training teachers (Andrews, 1971; Furst, Sandefor, Bressler & Johnson, 1971; Galloway, 1968; Spanjer, 1972).

The data obtained from the checklists and instruments in the aforementioned observation systems led to even more refined instruments, which administrators used to evaluate teacher performance (Ellett & Teddlie, 2003). Teachers were typically observed teachers once or twice a year at most (Peterson, 2004), a practice that has continued to be dominant in most evaluation systems into the present day (Weisberg *et al.*, 2009). Recent legislation, such as the No Child Left Behind Act of 2001, has contributed to an increased focus on teacher observation and its impact on both measuring and improving teacher performance (Daley & Kim, 2010). This has led to the development of several different teacher evaluation models that seek to effectively assess teacher performance and help teachers improve. One model currently used in several states is the Teacher Advancement Program (TAP) developed by Lowell Milken (2002), which seeks to provide continual opportunities for teachers to improve professionally. Another model, currently used in the district in which this study takes place is the Building Educator Support Teams (BEST) model developed by Sharon Kortman and Connie Honaker (2001). Included in the BEST

model is a coaching process that utilizes instructional coaches within the same school or district as the teachers being observed, facilitating a close relationship between the coaches and teachers, and providing the opportunity to interact multiple times as needed for improvement.

Instructional Coaching

The majority of teacher observations still take place for administrative and regulatory purposes (Daley & Kim, 2010), with many states requiring teachers to be observed a certain number of times per year (Hazi & Arrendondo Rucinski, 2009) and many observations being done by administrators for evaluative purposes (Weisberg *et al.*, 2009). Teachers have come to dread observations and view them as a test they have to pass in order to retain their position or receive a promotion (Weisberg *et al.*, 2009). In recent years, however, there has been an increase in the use of instructional coaches to promote the professional development of teachers, especially with newer teachers, where the instructional coach serves as a mentor (Sundli, 2007). Several authors define the mentor relationship as one in which an experienced person provides guidance and support to someone with less experience (Foster-Turner, 2006; Haney, 1997; McDonnell & Zutshi, 2006; van Kessel, 2006). Instructional coaches are experienced teachers; thus, they can effectively mentor new teachers just starting their professional career (Lord, Atkinson & Mitchell, 2008). Coaching, meanwhile, has a narrower focus than mentoring, which relates to a specific task or aspect of teaching (Hobson & Sharp, 2005; Simkins, Coldwell, Caillau, Finlayson & Morgan, 2006). Thus, a coach is someone who helps another person realize their goals within the mentoring framework (Bennet & Martin, 2001). While some experts focus on the differences between mentoring and

coaching (Haney, 1997; Starcevich, 2009), others use the terms interchangeably to mean a relationship between an experienced teacher and a less experienced teacher, where the mentor/coach strives to help the less experienced teacher achieve their goals and improve their teaching (Kortman & Honaker, 2010). Figure 1 shows the common and unique tasks of coaching and mentoring.

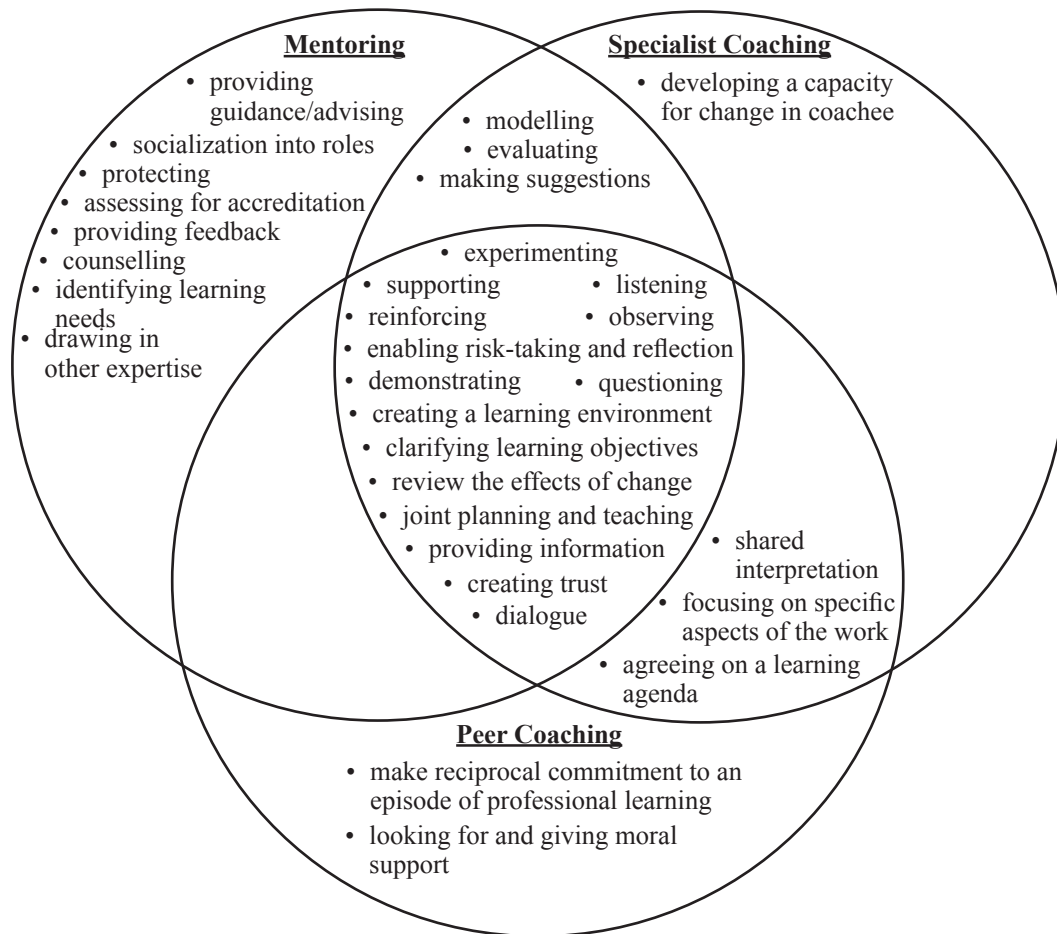


Figure 1: Common and Unique Tasks of Coaching and Mentoring
(Centre for the Use of Research & Evidence in Education, n.d.)

Instructional Coaching Models

In their book, *Reading Specialists and Literacy Coaches in the Real World*, Vogt and Shearer (2011) described six models of coaching they discovered as they looked at different groups of literacy coaches. These models can also be found in other instructional coaching settings. The six models are briefly described below.

Informal coaching. This coaching model typically does not involve the coach entering the classroom or conducting observations. Instead, the coach focuses on helping the teacher to self-identify areas they need to improve in their teaching and set goals by listening, consulting, and conversing with the teacher outside the classroom.

Formal coaching. This model involves planning and conferring outside the classroom, but also includes time spent in the classroom, with the coach doing model teaching or co-teaching in order provide support. Coaches using this model may also provide professional development workshops in addition to in-classroom support.

Mixed model coaching. This model combines aspects of both formal and informal coaching with the majority of the support being done outside the classroom and limited time spent in the classroom as needed or requested. In-classroom time is typically spent in observation in an effort to help guide the teacher in reflection in order to meet a particular goal for improvement.

Peer coaching and mentoring. Based more on a pure mentoring relationship, in this coaching model beginning teachers are partnered with more experienced mentors who assist the new teachers in adjusting to the rigors of the profession, including consultations regarding lesson planning, problem solving, and the other responsibilities

teachers may have. Coaches in this model may spend time in the classroom modeling or co-teaching, as well as doing observations in order to provide focused feedback.

Clinical supervision. This model is more of an administrative coaching model, where the coach is in a supervisory role and evaluates and provides feedback on teaching performance. Coaches in this model would typically pre-conference with the teacher, then visit the classroom for an observation, and conclude with a post-conference meeting to provide feedback.

Cognitive coaching. This model also employs a pre-conference meeting, followed by a classroom observation and a post-conference meeting. However, the goal of the coaching is more reflective in nature, with the coach striving to stimulate the teacher's thinking in such a way that the teacher self-identifies areas of improvement and creates a implementation plan to achieve those goals, with the coach as more of a guide than an evaluator.

The coaches in the school district in which this study took place have received training in a variety of coaching models and methods, and may employ different processes when interacting with the teachers they coach. However, most coaching sessions resemble either clinical supervision or cognitive coaching and typically include a pre-conference meeting where the teacher and the coach decide what area of the teaching standards they will focus on during the coaching session. This is followed by a classroom observation where the coach looks for evidence that the teacher is implementing the standard. These observations can be short "walk through" observations typically lasting about fifteen minutes, or longer observations lasting up to an entire lesson period. After the observation, the coach and the teacher usually meet in a post-conference meeting to

discuss and reflect on the teacher's performance. Despite the differences in the various coaching models, and the variety of training coaches in this particular school district have received, the coaches all are striving to achieve the same goal of improving teacher effectiveness.

Characteristics of Effective Coaches

Studies show that effective teaching leads to improved student achievement (Aaronson *et al.*, 2007; Rivkin *et al.*, 2005; Rockoff, 2004; Slater *et al.*, 2012). The goal of any professional development program, and coaching in particular, is to produce more effective teachers (Knight, 2007; Sturtevant, 2003). In order to increase teacher effectiveness, coaches need to possess several important characteristics. Hobson and Sharp (2005) and Jones *et al.* (2005) both reported that providing sufficient support in helping teachers solve problems was essential for effective coaching, as was being approachable and accessible. Allan (2007, cited in Lord *et al.*, 2008) indicated that teachers felt that a non-judgmental environment based on trust and respect was important and Hafford-Letchfield, Leonard, Begum and Chick (2008) concluded that empathy and good listening skills were both important characteristics of effective coaches. Callan (2006) stated that coaches and mentors should be enthusiastic, have good communication skills, and be "successful practitioners in their own right" (p. 9). These characteristics allow the coach to create an environment where the teacher is comfortable discussing their strengths and weaknesses and reflecting on their own teaching and performance. Schön (1983) stated that reflection on their performance is important to teachers' development, and much of the coaching literature indicates encouraging self-reflection in teachers is a key component in effective coaching programs (Knight, 2007; Rodgers

& Rodgers, 2007; Shanklin, 2006; Toll, 2005). Mezirow (1997) states that “self-reflection can lead to significant personal transformations” (p. 7). Thus, the more a coach encourages and supports self-reflection by teachers, the more effective the coach is at improving teacher effectiveness.

Characteristics of Effective Reflection

Killion and Todnem (1991) point out that the goal of practical reflection is to “guide future action,” (p. 15) such that when teachers examine their past and present experiences, they create knowledge that informs their future actions. The authors state that reflection is a cycle where a teacher plans, acts, observes, creates meaning, reflects, decides on future actions, and then plans again, thus starting the cycle over as shown in Figure 2. Thus, effective reflection is something that leads to a plan for improvement.

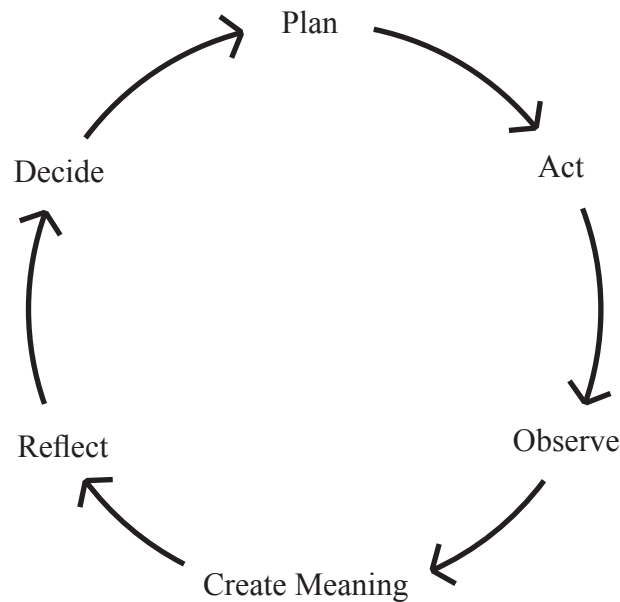


Figure 2: Process of Reflection (Killion & Todnem, 1991)

Reagan (1993) states that reflection should be more proactive than reactive, focusing on actions that solve problems rather than simply reacting to them.

Another important characteristic of effective reflection is objectiveness. Hatton and Smith (1995) concluded from their research that reflecting with another trusted person encouraged discussion and questioning, as is done in effective coaching sessions. This enables teachers to “distance themselves from their actions, ideas, and beliefs” (p. 41) and discuss them in a positive, non-judgmental environment (Collier, 1999). Adams, Nestel, and Wolf (2006) state that an important part of reflection is looking at the situation with “an analytical, non-emotional, objective eye” (p. 58). Therefore, to effectively reflect and implement change, a teacher must maintain a level of impartialness and consistency (Mezirow, 1998). Yet, no situation is devoid of emotion, and a teacher’s emotions can play a significant role in their actions in a particular setting. Thus, understanding those emotions is essential in order to make appropriate decisions based on reflection (Kurtz, Silverman, & Draper, 2005; Seibert & Daudelin, 1999; Vella, 1994). So, while being able to pull away from a situation emotionally and examine it with an objective eye is important, teachers must also remember to consider the emotions behind their actions and understand how those emotions influenced their actions in a particular setting (Adams *et al.*, 2006).

Ward and McCotter (2004) conducted a detailed analysis of reflection done by pre-service teachers and developed a rubric that describes the general dimensions and qualities of reflection. The dimensions of reflection they discussed were (1) focus, (2) inquiry, and (3) change. The levels of reflection were (1) routine, (2) technical, (3) dialogic, and (4) transformative. The entire rubric is reproduced in Table 1. This rubric

Table 1

Reflection Rubric

Levels				
	Routine	Technical	Dialogic	Transformative
	Self-disengaged from change	Instrumental response to specific situations without changing perspective	Inquiry part of a process involving cycles of situated questions and action, consideration for others' perspectives, new insights	Fundamental questions and change
Focus (What is the focus of concerns about practice?)	Focus is on self-centered concerns (how does this affect me?) or on issues that do not involve a personal stake. Primary concerns may include control of students, time and workload, gaining recognition for personal success (including grades), avoiding blame for failure.	Focus is on specific teaching tasks such as planning and management, but does not consider connections between teaching issues. Uses assessment and observations to mark success or failure without evaluating specific qualities of student learning for formative purposes.	Focus is on students. Uses assessment and interactions with students to interpret how or in what ways students are learning in order to help them. Especially concerned with struggling students.	Focus is on personal involvement with fundamental pedagogical, ethical, moral, cultural, or historical concerns and how these impact students and others.
Inquiry (What is the process of inquiry?)	Questions about needed personal change are not asked or implied; often not acknowledging problems or blaming problems on others or limited time and resources. Critical questions and analysis are limited to critique of others. Analysis tends to be definitive and generalized.	Questions are asked by oneself about specific situations or are implied by frustration, unexpected results, exciting results, or analysis that indicates the issue is complex. Stops asking questions after initial problem is addressed.	Situated questions lead to new questions. Questions are asked with others, with open consideration of new ideas. Seeks the perspectives of students, peers, and others.	Long-term ongoing inquiry including engagement with model mentors, critical friends, critical texts, students, careful examination of critical incidents, and student learning. Asks hard questions that challenge personally held assumptions.
Change (How does inquiry change practice and perspective?)	Analysis of practice without personal response—as if analysis is done for its own sake or as if there is a distance between self and the situation.	Personally responds to a situation, but does not use the situation to change perspective.	Synthesizes situated inquiry to develop new insights about teaching or learners or about personal teaching strengths and weaknesses leading to improvement of practice.	A transformative reframing of perspective leading to fundamental change of practice.

Note: from Ward and McCotter (2004)

offers some suggestions as to additional characteristics of effective reflection. The authors defined the levels as hierarchical, with the lowest level being routine reflection, which focuses on self-centered concerns such as controlling the classroom or reducing workload. At the other end of the spectrum was transformative, which focuses on pedagogical beliefs and how they impact students. In the “Change” dimension, the transformative level of the rubric indicates that reflection leads to a “fundamental change of practice” (p. 250). Thus, another important characteristic of effective reflection is the degree to which the changes the teacher plans to make based on the reflection process differ from their current practices. Brookfield (1987) also suggests that effective reflection identifies and challenges assumptions an individual may have about the situations they are reflecting on, and identifies the differences between those assumptions and their individual actions (Pavlovic & Friedland, 1997).

The purpose of instructional coaching is to encourage self-reflection in teachers.

Self-reflection, in turn, leads to more effective teaching. As stated by Branson (2009):

The aim of self-reflection, regardless of the approach, is to proactively initiate a self-inquiry into existing, but most likely unconscious, knowledge associated with beliefs, attitudes, feelings, intuitions, sensitivities, emotions, and values. This is the knowledge that affects how we perceive, analyse, interpret, and respond to our reality in each moment of experience. It is the knowledge we unconsciously use to form images of our self-concept, our impressions of others, our preferences, our biases, our likes and dislikes, and ultimately what we consider to be right or wrong. This source of knowledge determines what we think about ourselves and how we feel about relating to others. Before we are able to change how we relate to others, we need to be able to see the basis of our current beliefs and assumptions with some clarity. Once we can see how we have formed these beliefs and assumptions, then, and only then, can we suspend unhelpful beliefs and assumptions and begin to redirect our thinking in more morally beneficial ways. (p. 98)

Video-Based Evidence in Teacher Reflection

Common sense suggests that being able to see yourself teaching and examine your own performance recorded on video could be a powerful tool in helping teachers reflect on their own teaching performance. Video helps teachers “see themselves objectively” (Kerchner, 1997, p. 21) as is required for effective reflection (Adams *et al.*, 2006; Mezirow, 1998). In fact, many studies have shown that the use of video playback in helping teachers reflect on their teaching has many benefits, such as deeper reflection on teaching practices (Athanases, 1993; Calandra *et al.*, 2006), more focus on specific teaching behaviors that need improvement (Cuper *et al.*, 2007; Scida & Firidiwek, 2013), increased perceived value of the reflection process (Dawson *et al.*, 2001; Deasy *et al.*, 1991; Halter, 2006), and increased confidence of teachers in their reflection decisions (Tripp, 2009; Wedman *et al.*, 1999). In order to use video-based evidence to improve teachers’ practice, there are several issues that need to be considered, such as the video recording technology used to collect the video data and teachers’ attitudes toward using video-based evidence for reflection. In addition, there are several issues that may impact the effectiveness of video-based evidence in helping teachers reflect on their performance, such as logistical aspects, time limitations and administrative support.

Video Recording Technology

Tripp and Rich (2012) reviewed 63 studies in which participants were recorded while teaching, subsequently reviewed the video recordings, and then reflected on their performance. It is interesting to note that although video recording has been used since the middle of the 20th century (Fuller & Manning, 1973), the majority of the studies available and reviewed by Tripp and Rich (2012) were published after the year 2000. This

would seem to indicate that the interest and availability of video recordings as a tool in teacher reflection is recent and continuing to grow. One reason for the increased interest in video recording of teacher performance may be due to advances in technology that have made it easier, cheaper, and more effective to record video in the classroom.

The effectiveness of using video-based evidence in teacher reflection depends, at least to some degree, on the technology used to capture the video data. If the video recordings are of poor quality, or the sound cannot be heard clearly, then it is harder for teachers to focus on their performance. In addition, if the technology is bulky, or impacts the dynamics of the classroom in some way, it can impact the authenticity of the video evidence recorded. However, despite this seemingly obvious correlation, most studies available on using video recordings in teacher observation neglect to mention what technology was used to capture the video data, or the circumstances surrounding the collection of the video evidence. They simply mention the use of videotape or video recordings (Byra, 1996; Carroll, 1981; Deasy *et al.*, 1991; Holzman, 1969; Hougham, 1992; Kpanja, 2001; Krammer *et al.*, 2006; Martin-Reynolds, 1980; Miller, 2009; Miyata, 2002; Nicol & Crespo, 2004; Parikh, Janson & Singleton, 2012; Perlberg, 1983). However, a few studies, which are discussed below, do mention specific video technologies and issues surrounding the collection, storage, and analysis of video-based evidence. Since this study focuses on the use of a newly developed video recording technology, it is useful to examine the technologies used previously to record and analyze video-based evidence.

Beginning in the 1960s and 1970s, teacher training programs saw video as a way to help more teachers observe master teachers in the classroom, and they devised several

different ways to collect and display video recordings to pre-service teachers (Butts & Trott, 1986). These methods included Closed Circuit TV (CCTV) of master teachers conducting classes in a television studio, and the use of “mobile units” (p. 164) to record actual classroom lessons. Both of these methods involved the use of state-of-the-art technology for the time, but this technology was still bulky and difficult to transport. As technology advanced, and video recorders became increasingly smaller, it became easier for individual teachers to record themselves or colleagues without requiring trained technicians or specialized recording equipment. For example, McNeill (1998) mentions using Hi-8 camcorders placed on a window ledge or other unobtrusive place in the classroom to acquire video-based evidence.

The next big advance in video technology introduced digital video. Rather than using magnetic tape, recorders utilized disks or digital tape to store the video (Calandra *et al.*, 2006; Cunningham & Benedetto, 2002; Dymond & Bentz, 2006; Griswold, 2004). One advantage of digital video was the ease of sharing the video recordings. Cunningham and Benedetto (2002) used digital camcorders with miniDV tapes to collect the video-based evidence, and then transferred the video recordings directly to recordable DVDs, which allowed them to store more video on a single disc, and were much lighter than bulky VHS cassettes.

Video editing and annotation tools. One aspect of video recording technology that must be considered is the use of video-based evidence once it has been recorded. It is often time-consuming and impractical to simply view an entire recording of a lesson in order to reflect on performance (Krammer *et al.*, 2006). Thus, being able to edit out parts of the recording that are not useful is an important advantage. Prior to the use of digital

video technology, editing video required specialized equipment and a trained technician. However, with the advance of digital technology, editing now requires simply a computer with the appropriate software. One example of this is a study conducted by Calandra *et al.* (2006). The researchers used digital camcorders to collect video-based evidence, which was then transferred to a computer and edited using Apple's iMovie® software. The authors stated they chose this software specifically because of its ease of use and availability.

Since the introduction of digital video, several specific software applications have been developed to combine the ability to edit recorded evidence and annotate the evidence with comments to help teachers focus on certain aspects of their performance during reflection. For instance, Bryan & Recesso (2006) used the Video Analysis Tool (VAT) to capture and analyze clips of teachers performance in the classroom. The researchers used an Internet Protocol (IP) camera that was pre-installed in the classroom and remotely controlled and accessed, so it was unobtrusive. The “raters” (defined by the authors as people who analyzed the video clips) accessed the video-based evidence through VAT via the Internet. They used the video tools to create, refine, view, and share clips. VAT was also used by Rich and Hannafin (2008) and Shepherd and Hannafin (2008). Other studies used similar tools. Tripp (2009) used MediaNotes, a video analysis tool, to facilitate reflection conferences between a supervisor and a pre-service teacher.

Rich and Hannafin (2009) discussed and compared several video annotation tools, such as the Video Analysis Tool (Bryan & Recesso, 2006), the Video Analysis Support Tool (van Es & Sherin, 2002; Sherin & van Es, 2005), Video Paper (Beardsely, Cogan-Drew & Olivero, 2007), Video Interactions for Teaching and Learning (Preston,

Campbell, Ginsburg, Sommer & Moretti, 2005), Video Traces (Stevens, 2007), MediaNotes (Tripp, 2009, Wright, 2008) and StudioCode (Dye, 2007). While different in several regards, these tools all allow users to connect separate pieces of video-based evidence together, analyze the evidence according to specific frameworks, and collaboratively reflect on their performance.

One software/hardware combination, developed by IRIS Connect™ in the United Kingdom (<http://www.irisconnect.co.uk>), uses portable cameras with wireless microphones and computer software to facilitate the capture, editing, annotation, and sharing of video-based evidence. The company offers several packages, with the least expensive utilizing iPod Touch devices to record and share video clips. The more advanced packages include cameras that connect to a network, and can be accessed by a remote observer, who can rotate the camera 360° to pan the classroom and capture almost anything that might happen. Some even include two-way audio, which allow a remote observer to coach the classroom teacher from outside the classroom, thus minimizing the observer's impact on the classroom environment.

Mobile devices. One of the most recent and possibly significant advances has been the inclusion of video recording technology in mobile computing devices such as smartphones and tablet computers. The implementation of these ubiquitous devices allow teachers to easily record lessons without having to purchase separate video recording equipment. In addition, this technology allows teachers to record in situations where the observation is impromptu, or recording was not originally planned. Wishart (2009) discusses a project where teachers and trainees were given Personal Digital Assistants (PDAs) for an entire academic year. The aim was to give teachers easier access to

mobile resources and promote collaboration using mobile technology. The researchers discovered that most of the participants used the mobile devices for personal reasons, and to access Internet resources such as Google® instead of the mobile resources intended. They mentioned the most popular features were the video and audio recording features of the PDAs, which teachers used to record observations of their peers' lessons and student work.

In a more recent study, Maxfield and Romano (2012) distributed iPads to 22 pre-service teachers to record video clips of their field observations of experienced teachers. They reported that the participants indicated familiarity with the mobile devices, and that they expressed no concerns over usability prior to using the devices. The researchers specifically selected iPads because of their popularity and because they wanted to determine the usefulness of the built-in video camera and microphone for future applications. In their findings, they did not report any problems using the iPad to record video, or any problems with the quality of the video. Unfortunately, there are very few studies that have used mobile devices, and particularly iPads, for recording video in the classroom. Thus, more research is needed in this area.

iPads and teacher observations. Although there are few empirical studies examining the use of tablet computers, and specifically the iPad, in teacher evaluation, there is a current push to move teaching evaluation software into the realm of mobile technology. Several well-known teacher evaluation companies have created applications that allow evaluators to take notes during an observation and share those notes and comments with others. These applications can also be used to schedule observation appointments and conferences before and after the observation. Most include pre-loaded

evaluation rubrics, but also allow users to create rubrics to fit their needs. Some of the more well-known applications are:

- *Reflect Live*, created by Teachscape (<http://www.teachscape.com>), a well-know educational technology company
- iWalkObservation, created by Kevin Crotchett
- iPad Teacher Evaluation App, developed by Hal Shroats of Customized Relational Tek, in connection with Dr. Richard Voltz of the Illinois Association of School Administrators

Both the iWalkObservation and the iPad Teacher Evaluation App utilize a FileMaker database to store and share information, which requires purchasing a FileMaker server in addition to site licenses for the FileMaker Pro software. The actual application, called FileMaker Go, is free from the Apple iTunes App Store.

Despite this push to move evaluation tools onto mobile devices, none of these options include the ability to record and share video of the actual observations. Thus, the DataCapture mobile application is unique because it incorporates video and textual notes in the same application. A more complete description of the DataCapture mobile application is provided in Chapter 3.

Given the readily available technology, and the development of new applications that improve the use of video-based evidence in teacher observations, one would think that teachers everywhere would be scrambling to record their lessons and thus improve their practice. However, technology alone does not make video-based evidence effective at improving teacher practice. For the use of video-based evidence in encouraging self-reflection to be effective in an instructional coaching context, several issues must be taken

into consideration, including teachers' attitudes toward the use of video-based evidence during observations, logistical aspects of video recording, time requirements of using video-based evidence, and administrative support.

Teachers' Attitudes toward the Use of Video Evidence

Several studies have shown that teachers perceived the use of video-based evidence in self-reflection to be effective (Collins, Cook-Cottone, Robinson & Sullivan, 2004; Deasy *et al.*, 1991; Stadler, 2003, cited in Tripp & Rich, 2012), and most people would expect that being able to see one's self on video would be helpful in evaluating performance. Yet, many teachers are reluctant to consent to being video recorded in the classroom for a variety of reasons (Leat, 2005; McNeill, 1998). Perhaps the most significant reason is simply human nature. Fuller and Manning (1973) discussed the concept of "self-confrontation" (p. 469), which incorporates video-based evidence to allow teachers to more accurately and objectively reflect on their practice. However, there are several considerations that may impede or impact this process. One such issue is stress or anxiety. As the authors stated, "Since stress and anxiety may arise in video playback, the playback may be thought of, in some circumstances, as a threatening message" (pp. 473-474). Thus, teachers may feel threatened when asked to watch themselves on video. Perlberg (1983) suggests that this stress is essential to producing the dissonance (Festinger, 1954) needed to deautomatize (Holzman, 1969) teachers' practice, which is necessary if any real change is to be made (Stoller, 1968). This concept of self-confrontation is not confined to the use of video, and may occur at any deeper level of reflection, such as Ward and McCotter's (2004) transformative level. However, the

incorporation of video-based evidence makes the confrontation more obvious, and thus can make many teachers uncomfortable or unwilling to be recorded.

In addition to self-confrontation, Leat (2005) mentioned other reasons that teachers may be reluctant to be recorded on video during an observation. He suggested that teachers may be concerned that students will act up due to the presence of the video camera, which may disrupt the lesson and reflect poorly on the teachers' classroom management skills. He also pointed out that many teachers may be embarrassed about their appearance or mannerisms, especially in the case of less-confident teachers.

Another important consideration that can cause teachers to be unwilling to be recorded during observations is the question of who will see the video recordings. In an instructional coaching context, trust is extremely important (Lord *et al.*, 2008). If there is a lack of trust, teachers may question whether video-based evidence might be used for other evaluative or administrative purposes, which has the possibility of negatively impacting their employment.

Logistics

In the case of this study, participants were asked to use a mobile application to record video. Being in the development stages, there are bound to be some technical or logistical issues regarding the use of the application that may impede the use of video-based evidence. However, even in situations where such an application is not being used, there are several issues that could impact the use of video-based evidence during observations. One such issue is who does the recording and what equipment they use (Leat, 2005). The classroom environment is already impacted by the presence of an observer (Ward, 1981). Adding large, obtrusive cameras or having someone walking

around the room, possibly fumbling with a mobile device while attempting to take notes can increase this observer effect and cause greater disruption to the flow of the lesson.

Another logistical issue concerns how the coaches use the video-based evidence once it has been recorded. For example, do coaches watch the video with the teacher during the reflection conversation, or do they give teachers the opportunity to watch the video recordings on their own, and then reflect during the reflection conversation. Although it has the potential to greatly affect the self-reflection process, there is incredible variation on how video-based evidence is used for reflection in the literature. Some studies employed checklists or coding procedures (Brawdy & Byra, 1994; Hougham, 1992; Prusak, Dye, Graham & Graser, 2010), while others employed written reflection tasks (Halter, 2006; Miyata, 2002; Rich & Hannafin, 2008; Shepherd & Hannafin, 2008), video editing (Cunningham & Benedetto, 2002; Nicol & Crespo, 2004; Warden, 2004; Yerrick, Ross & Molebash, 2005), or interviews and conferences (Collins *et al.*, 2004; Dawson *et al.*, 2001; Deasy *et al.*, 1991; Grainger, 2004; Griswold, 2004; Miller, 2009; Miyata, 2002; Pailliotet, 1995). Instructional coaches typically use conferences to help teachers reflect on their performance, but they may vary in the way they use video-based evidence to support that reflection.

Time Requirements

With any technology there will be a time investment for users to learn how to use the technology effectively. Adding video-based evidence to an instructional coaching program adds another layer that the instructional coaches and teachers have to deal with in their already busy schedules. While recording video during a classroom observation may not take much additional time, there may be extra time needed to set up and

take down recording equipment, learn how to use the equipment properly, edit video recordings to showcase strengths and weaknesses observed, and, of course, time to watch the video recordings in order to reflect. Several studies indicated that while teachers felt using video-based evidence was effective at encouraging self-reflection, there was an added time component that can be burdensome on coaches and teachers. For example, Cunningham and Benedetto (2002) reported that teachers spent more time selecting and editing clips than they did actually reflecting on their performance. Krammer *et al.* (2006) reported that teachers felt the process of reflecting on video recordings of their teaching was “time-consuming” (p. 430). Thus, the time limitations of coaches’ and teachers’ schedules may impact the use of video-based evidence.

Administrative Support

One study by Sunal and Sunal (1992) looked at the impact of administrative support on the use of local area networks in a school district by placing pre-service teachers in schools with varying degrees of administrative support. They concluded that teachers in schools with stronger administrative support used the networks to communicate more than those in schools with weaker administrative support. Similarly, Dymond and Bentz (2006) reported that they had better success at schools where they had obtained support of the administrators before videotaping. Given that using video-based evidence may require more time, and the logistical concerns of using video-based evidence, it suggests that the level of support given by the administration may impact the use of video-based evidence in instructional coaching.

Summary and Research Questions

Teacher observation has been part of our educational system since the beginning, and will continue to be important in the future. In an effort to help teachers improve their teaching, many observations are done in an instructional coaching context, where the goal is to encourage the teacher to reflect on their own teaching and find ways they can improve. This must be done within a relationship built on trust and respect. The literature suggests that video recordings of teachers' performance help provide a level of objectiveness that support the self-reflection of teachers. However, there are very few studies that look at video-based evidence specifically in an instructional coaching context. Given this specific context, there are several issues that may impact the use of video-based evidence, such as teachers' attitudes toward the use of video-based evidence, logistics of using video-based evidence in instructional coaching, time requirements, and administrative support.

In order to fill this important gap in the literature, and to provide evidence in the instructional coaching context, this study sought to answer the following research questions:

1. What are instructional coaches' and teachers' attitudes toward the use of video-based evidence in teacher observations in an instructional coaching context?
2. What are instructional coaches' attitudes toward the use of the DataCapture mobile application in an instructional coaching context?
3. How is video-based evidence used in teacher observations in an instructional coaching context?

4. How do issues such as logistics, time requirements, or administrative support impact the use of video-based evidence and the DataCapture mobile application in an instructional coaching setting as perceived by coaches and teachers?

Chapter 3

METHODOLOGY

This chapter describes the setting, the participants and how they were selected, the procedure, the data collection instruments, and the methods for data analysis used in this study.

Setting

This study took place at a large school district in the Southwestern United States. According to the latest available statistics, the district enrolled around 18,000 students as of October 2011 (49% female and 51% male), of which almost 95% are considered minority students (88% are considered Hispanic, 4% are Native American, and 2% are African American). Approximately 85% of the students come from low socioeconomic backgrounds, and 22% are considered English Language Learners. The teachers in the district have 11 years of experience on average, with 21% of the teachers in their first three years of teaching. There are 18.6 students per teacher, and an attendance rate of 93% for the district. These vital statistics are summarized in Figure 3, Figure 4, Figure 5, and Figure 6.

The district supports ten elementary schools, five middle schools, and three high schools, as well as other magnet schools and early childhood development centers, for a total of 22 sites. One of the high schools is considered non-traditional and offers programs catered to students who learn best in non-traditional ways, need more time with teachers, or are not able to attend classes regularly because of extenuating circumstances. The district also offers an online option for grades 6 – 12. This option is intended

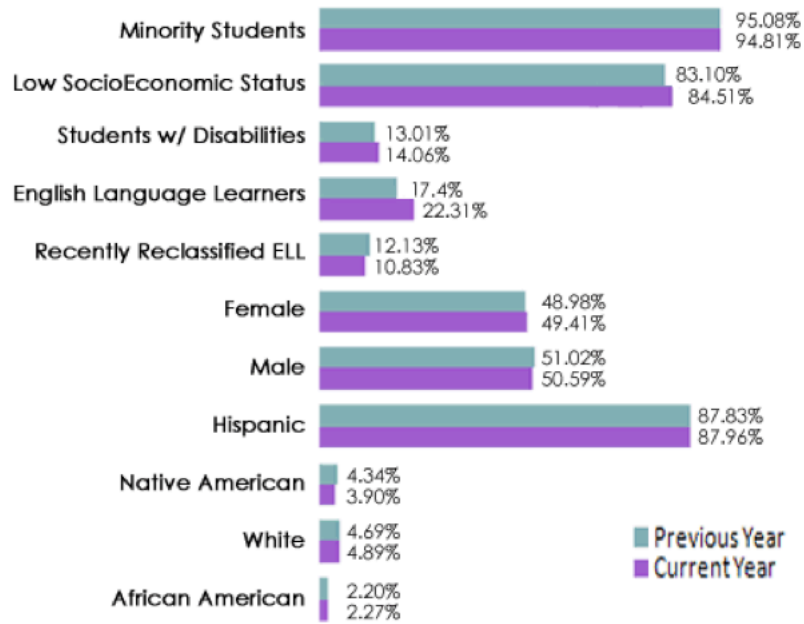


Figure 3: Student Demographics as of October 5, 2011 (Retrieved from <http://www.susd12.org/district/district-vital-statistics>)

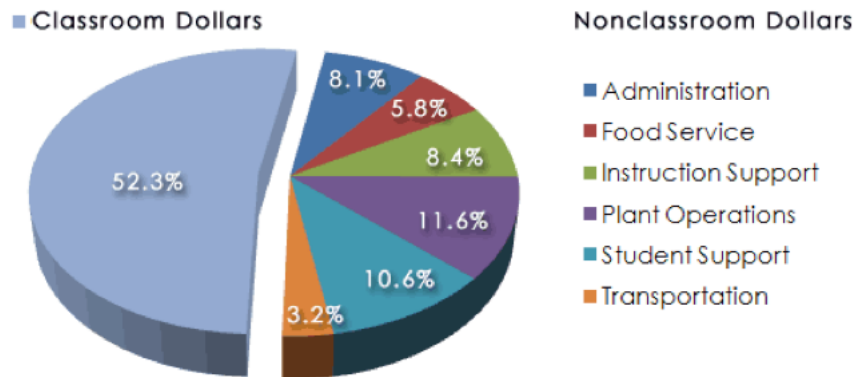


Figure 4: Budget Distribution for Fiscal Year 2010 (Retrieved from <http://www.susd12.org/district/district-vital-statistics>)

Operations Area	Measure	District	Peer Average	State Average
Administration	Cost per pupil	\$633	\$627	\$721
	Students per administrator	64	68	66
Plant Operations	Cost per square foot	\$8.14	\$6.54	\$6.25
	Square footage per student	110	142	146
Food Service	Cost per meal equivalent	\$2.55	\$2.52	\$2.41
Transportation	Cost per mile	\$3.07	\$3.31	\$3.35
	Miles per rider	142	323	282
Very low	Low	Comparable	High	Very High

Figure 5: District Cost Measures Relative to Peer Group (Retrieved from <http://www.susd12.org/district/district-vital-statistics>)

Measure	District	Peer Average	State Average
Attendance rate	93%	91%	94%
Graduation rate (2009)	67%	63%	76%
Poverty rate (2009)	37%	42%	21%
Student/teacher ratio	18.6	14.7	17.9
Average teacher salary	\$48,573	\$42,282	\$47,077
Average year's experience	11.0	12.3	10.6
Percent of teachers in first 3 years	21%	15%	20%

Figure 6: Student and Teacher Information (Retrieved from <http://www.susd12.org/district/district-vital-statistics>)

for students who need to make-up missed credits, want to get ahead in their regular coursework, or want to attend fully online.

DataCapture Mobile Application

DataCapture is a mobile application designed for the iPad that allows users to integrate a digital observation form with video, audio, and still images. DataCapture was

designed by the Technology-Based Learning and Research (TBLR) group, part of the Mary Lou Fulton Teachers College at Arizona State University, through funding provided by the U.S. Department of Education Teacher Quality Partnership (TQP). Unlike other mobile applications designed for teacher evaluation, DataCapture has video capture features built directly into the application, allowing an observer to record a video and connect it to a specific form in the database. The application comes pre-loaded with the BEST (Kortman & Honaker, 2010) teaching forms, which are described later in this chapter. A screenshot of the application can be seen in Figure 7, which shows that the application provides a split-screen format, with the video or photo view on the left side of the screen, and the teaching evaluation form on the right. Once a video has been captured, it can be tagged and annotated before being submitted to the database.

Another unique aspect of the DataCapture mobile application is the aggregation feature. The application connects to a database, allowing an authorized user to quickly see what forms have been submitted, and even to view individual entries. Thus, a principal or coaching supervisor can easily monitor coaching and teacher progress to determine the best course of action or intervention. Users can also save forms without submitting them to the database, allowing coaches to review videos and forms with teachers before they are submitted. A screenshot of the aggregate reporting feature is seen in Figure 8.

Study Period

The school district where this study took place has been using the DataCapture mobile application during the 2012-2013 school year to facilitate teacher observations. These observations include formal evaluations and observations conducted as part of the district's instructional coaching program. However, while the coaches and administrators



Figure 7: Screenshot of the Data Capture Application Individual Report

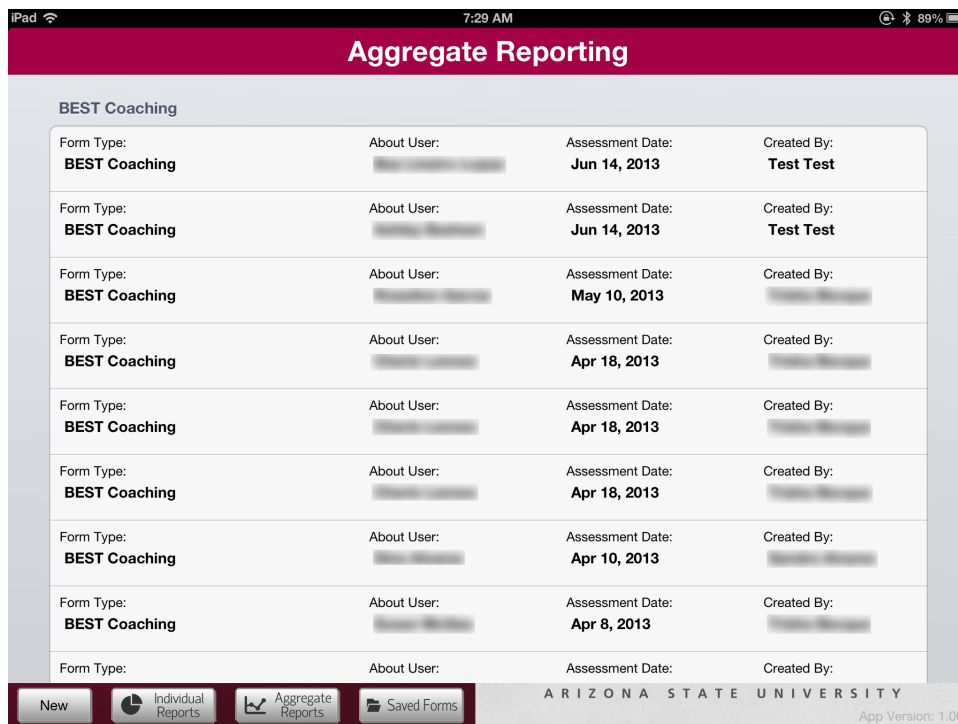


Figure 8: Screenshot of the DataCapture Application Aggregate Report

are using the application to submit evaluation forms, they have not been actively making use of the video, audio, or still image features of the application. This study was conducted over the last two months of the school year. Instructional coaches were asked to volunteer to record video using the DataCapture mobile application as part of their normal coaching duties. They were instructed only to record video for those teachers who agreed to be recorded. At the end of the two-month study period, the coaches and teachers participated in interviews regarding their experience.

Participants

The participants in this study were six instructional coaches and two teachers. The coaches were recruited to participate in the study via email (see Appendix A). Coaches are typically teachers with several years of experience, whose job it is to help the teachers they coach find areas they need to improve in their teaching, and to provide encouragement and support to facilitate that improvement. Because the instructional coaching program is part of the district's wider ongoing embedded professional development program, there are instructional coaches in every school in the district, with several coaches who "float" between the schools as needed. The coaches typically focus on a particular aspect of teaching, such as integrating technology. The demographics for the district's instructional coaching population are given in Table 2 and Table 3.

The instructional coaches work with teachers in their schools as needed or directed by their principal. These teachers range from new teachers with only one or two years of experience to teachers with many years of experience. There are instructional coaches at almost every site, so coaching happens at the elementary, middle school, and high school levels. Some instructional coaches may have a particular focus, such

Table 2

Instructional Coaching Population

Population	Total n	Mean age	Mean years experience	Elementary school	Middle school	High school	District- wide
All	93	45	10	55	29	2	7
Male	21	40	8	9	11	1	0
Female	72	46	11	46	18	1	7

Table 3

Ethnicity of Instructional Coaches

Ethnicity	Total n	Mean age	Mean years experience	Elementary school	Middle school	High school	District- wide
White	40	50	10	23	11	2	4
Black	1	43	7	0	1	0	0
Hispanic	47	45	11	29	15	0	3
Native American/ Asian/Pacific Islander	3	46	17	3	0	0	0
Other/Not Specified	2	49	3	0	2	0	0

Table 4

Teaching Population

Population	Total n	Mean age	Mean years experience	Elementary school	Middle school	High school
All	823	42	7	426	182	215
Male	208	42	6	59	52	37
Female	615	42	7	367	130	118

Table 5

Ethnicity of Teachers

Ethnicity	Total n	Mean age	Mean years experience	Elementary school	Middle school	High school
White	427	44	6	204	107	116
Black	19	44	5	5	4	10
Hispanic	342	41	8	203	61	78
Native American/ Asian/Pacific Islander	20	41	4	5	8	7
Other/Not Specified	15	33	1	9	2	4

as technology, and focus on helping teachers improve their teaching in that particular context. The demographics for the teaching population is given in Table 4 and Table 5.

Data Sources

This mixed-methods study involves both quantitative and qualitative methods of data collection, including data collected through the DataCapture mobile application, interviews with coaches and teachers, and surveys. The multiple sources add depth to the study (Creswell, 2007) and help to corroborate data collected. Each of these data sources are described in more detail below.

Interviews

One qualitative measure used in this study was interviews. Creswell (2007) suggests that interviews add depth to the data and provide insight into quantitative data obtained from other measures. This study involved interviews of six coaches and two teachers. The interview questions were designed so as to avoid leading questions (Patton, 2002; Schofield, 1995) and the interviews were conducted using established procedures, including being video and audio recorded and then transcribed for analysis (Krueger, 2006). The interview questions are included in Appendix F and Appendix G.

Because of the busy nature of the coaches, the coaches were not interviewed in a single group. As much as possible, effort was made to have more than one coach in each interview, to create a focus group (Creswell, 2007; Krueger, 2006), but this was not always the case. In the end, two of the coaches were interviewed together, and the remaining four coaches were interviewed separately. The two teachers were interviewed together.

Data from the DataCapture Mobile Application

The DataCapture mobile application provided both qualitative and quantitative data. The application collects data with each record that is submitted. This quantitative data can be used to determine the number of videos recording during teacher observations, as well as the overall number of observations completed. The application also includes four types of qualitative observation forms, of which two are related to instructional coaching. The other two forms consist of a teaching standards assessment, which is used for formal observations, and a technology assessment form used to evaluate teachers' use of technology.

Instructional coaching observation forms. There are two forms in the DataCapture application that are used for recording observations in connection with instructional coaching. One is called “BEST Coaching,” which consists of six sections, as listed below:

- General Information — this section lists the district, school, and name of the teacher being observed. It also lists the experience the teacher has in number of years, the grade level, content area, and the name of the instructional coach doing the observation.
- Outcomes for Coaching Session — this section consists of a large text-box where instructional coaches can describe in detail the outcomes for the current coaching session.
- Strength — this section has space for the instructional coach to describe one strength observed during the session, followed by a list of check-boxes indicating the areas of the BEST Rubric (described below) under which the

strength can be categorized. There is also space for the coach to describe evidence they saw of that strength in the teacher’s performance, as well as the strength’s impact on student achievement.

- Growth Goal — this section resembles the strength section above, but focuses on an area where the teacher needs improvement. There is space for the instructional coach to describe the goal, and then a list of check-boxes indicating the areas of the BEST Rubric (described below) under which the growth goal can be categorized. This is followed by space for the coach to describe evidence they saw that indicates the teachers needs improvement in this area, followed by space to indicate the impact this area has on student achievement.
- Action Plan — this section has space for the coach to describe the actions the teacher will make to achieve their growth goal.
- Notes/Follow-up — this section gives space for the teacher and the coach to make notes regarding the coaching session, or updates they observe in follow-up visits.

The BEST Coaching form is designed to encompass an entire coaching session, which may include more than one observation. In the application, this form is digital, and so makes use of form elements similar to what might be seen in an online form found on a website. However, to give a more complete overview of the BEST Coaching form, a paper-based version can be seen in Appendix J.

The second instructional coaching form in the DataCapture mobile application is called “BEST Record.” This form is shorter than the BEST Coaching form and consists of only five sections, as listed below:

- General Information — this section lists the district, the school, and the name of the teacher being observed.
- Section A — this section lists the years of experience for the teacher being observed, the grade level, and the content area or areas for which the teacher is responsible.
- Section B — this section lists the length of the interaction, which can be between 15 minutes and 1 hour 30 minutes. It also lists the type of interaction, which can be a walk-through (i.e. short observation), a full lesson observation, a conference, or other. Finally, this section lists the content area of the observed lesson.
- Section C — this section has a list of check-boxes indicating the areas of the BEST Rubric (described below) for an area of strength, and a similar list for an area of growth.
- Section D — this section gives space for additional notes and follow-up remarks.

This form is designed to be completed at each interaction between an instructional coach and a teacher. Again, in the application, the form makes use of digital form elements, but a paper-based version can be seen in Appendix K to give a better overview of the form content.

It should be noted here that although the two forms were designed for different purposes, they were not always used this way by instructional coaches in the district. The researcher asked a district official to clarify how the two forms were used in the district, to which he received the following response:

Early on the coaches were told about all the forms that were housed in the [application]. They were not really told to use one over the other, but to start using the forms in informal walk-throughs as well as in the coaching process. So it was really up to the coaches what they used to capture evidence....We really just wanted them to start using the documents so they as well as the teachers started to dialog about the criteria and indicators in their conversations about instruction. (D. Bergman, personal communication, June 10, 2013)

The BEST Rubric

Sharon Kortman and Connie Honaker (2010) outlined eight areas teachers should be proficient in before they can call themselves competent teachers. They called these areas the Building Educator Support Teams (BEST) Teaching Standards. The eight areas are content knowledge, professional knowledge, instructional design, instruction, management, assessment, collaboration, and professional development. Under each area are four or five key statements that indicate important aspects of that specific area. In using the BEST standards to evaluate teachers, there are five proficiency levels: unsatisfactory performance, developing performance, standard performance, proficient performance, and master performance. The forms in the DataCapture mobile application use these standards in connection with the BEST rubric. The entire rubric is included in Appendix I.

Data Obtained from the School District

The school district where this study was conducted routinely surveys the instructional coaches regarding their coaching duties as part of their Title I program

accountability. The survey data was provided to the researcher in connection with questions regarding the instructional coaches time limitations. The data consists of a single survey administered to all Title I personnel in the district. This survey data was collected via an online delivery method using Survey Monkey (<http://www.surveymonkey.com>). It was conducted and supervised by the office of the Director of Title I Programs for the school district in accordance with established procedures and regulations. Participants skipped over questions that did not apply to their specific position. This study looked at data from three different groups of Title I personnel, which were (1) Title I Program Facilitators, (2) Instructional Coaches (TAP Master Teachers), and (3) Instructional Technology Coaches. While each title may have different responsibilities within their school, each group has instructional coaching as part of their job description. The survey included quantitative questions that asked the coaches to indicate what they thought their primary roles were, how often they performed those functions, what other functions they performed that were not listed in their job descriptions, and what evidence they had that they had performed their roles adequately. The surveys also included qualitative questions that asked coaches to list any factors that contributed to their achievements, challenges they faced during the year accomplishing their goals, and recommendations they had for the future.

Procedure

This study utilized a systematic set of procedures to ensure the quality and accuracy of the data collected. First, the instructional coaches were recruited by sending an email through the Professional Development Coordinator of the school district to all the coaches (see Appendix A). The researcher also recruited coaches by attending a

coaches training meeting and introducing the study. Once the participating coaches were identified, they met with the researcher to sign the consent form (see Appendix B), learn the procedures for the study and discuss any questions.

During the study period, as part of their normal coaching duties, the coaches asked teachers if they were willing to be video recorded during their observations. If the teachers agreed, the teachers signed a consent form (see Appendix C) after which video was recorded and used as part of the coaching process. At the end of the study period, the coaches and teachers met with the researcher to answer a series of interview questions about their experience (see Appendix F and Appendix G). As mentioned before, every effort was made to form focus groups (Krueger, 2006), but due to schedule conflicts and availability of meeting space, four out of the six coaches were interviewed individually. The two remaining coaches were interviewed together, as were the two participating teachers. The interviews were both audio and video recorded by the researcher, except for one interview with a coach who declined to be video recorded. That interview was recorded only via audio. Before the interviews began, the participants signed a form consenting to being interviewed and to being recorded (see Appendix D). After the interviews were conducted, the recordings were transcribed by the researcher for analysis. In addition to the interviews, the researcher received report data from the DataCapture mobile application in aggregate form, as well as spreadsheets of the data from the Title I Personnel survey conducted by the school district.

Data Analysis

This mixed methods study included both quantitative and qualitative methods of data analysis and utilized a triangulation approach (Creswell, 2007). This approach

allows the quantitative and qualitative data to be collected and analyzed separately, and then compare the results of those analyses to draw specific conclusions. The description of the data analysis below is organized by the type of data and the individual research questions for this study.

Qualitative data. The qualitative data in this study are the participants’ responses to the interview questions, instructional coaches responses to the qualitative questions on the Title I Personnel survey, and the coaching records from the DataCapture mobile application. The qualitative data were deductively analyzed and given initial descriptive codes (Patton, 2002) using the analytical framework described in Table 6. These codes are based on the research questions for this study. Once the initial codes were given, the data with code 8 was inductively analyzed to look for additional patterns. As Miles &

Table 6

Analytical Framework Used in Qualitative Data Analysis

Code	Related Topic
1	Coaches attitudes toward the use of video evidence in teacher observations
2	Teachers attitudes toward the use of video evidence in teacher observations
3	Coaches attitudes toward the use of the DataCapture application
4	Coaches use of video evidence to encourage reflection in teachers
5	Issues related to logistical aspects of using video evidence
6	Issues related to time limitations or requirements in using video evidence
7	Issues related to administrative support in the use of video evidence
8	Other issues related to instructional coaching and the use of video

Huberman (1994) and Thomas (2003) suggest, codes make data analysis more efficient because data can be labeled and retrieved by the given code.

Research question #1. This question focused on the attitudes of coaches and teachers toward the use of video-based evidence in teacher observations. The first, second, and third interview questions for coaches (see Appendix F), and the first and second interview questions for teachers (see Appendix G), specifically focused on participants' attitudes toward the use of video-based evidence. Thus, responses to these interview questions provided data essential to answering this research question.

Research question #2. This question focused on coaches' attitudes toward using the DataCapture mobile application to record teacher observations. This research question was answered by analyzing participants' responses to the sixth and seventh interview questions (see Appendix F).

Research question #3. This research question focused on how instructional coaches used video-based evidence with teachers. This research question was answered by analyzing data from several qualitative sources, including participants' responses to the fifth interview question (see Appendix F), coaching records from the DataCapture mobile application, and data from the Title I Personnel survey responses.

Research question #4. The last research question dealt with issues that could possibly affect the use of video-based evidence in an instructional coaching context, such as logistics, time requirements, and administrative support. Data from two qualitative sources was analyzed to answer this question. These two sources were participants' responses to interview questions 3, 4, 8 and 9 (see Appendix F) and data from the Title I Personnel survey.

Quantitative data. The quantitative data sources include the data obtained from the DataCapture mobile application and the Title I Personnel survey data obtained from the school district. This data was analyzed using descriptive statistics (Trochim, 2006) to corroborate data found in the qualitative data sources.

Research question #1. This question focused on coaches' and teachers' attitudes toward using video-based evidence in teacher observations. No specific quantitative questions were asked to determine participants' attitudes to using video-based evidence. However, the quantitative data from the DataCapture application show the number of videos recorded during the study period. Because teachers had to volunteer in order to be recorded, focusing on how many videos were recorded might give some indication of how teachers feel about being recorded.

Research question #2. This question focused on coaches' attitudes toward using the DataCapture mobile application. There are no quantitative data sources that were analyzed to answer this question.

Research question #3. This research question focused on how coaches used video-based evidence with teachers in their coaching. As with the first research question, there were no quantitative data sources that specifically focused on this research question. However, analyzing the number of videos recorded might provide some answer to this research question.

Research question #4. This research question focused on issues that might have impacted the use of video-based evidence, such as logistics, time requirements, and administrative support. Coaches' responses to the quantitative questions from the Title I Personnel survey were analyzed to answer this question.

Chapter 4

RESULTS

This chapter presents findings from both the qualitative and quantitative data sources in an effort to answer the following research questions:

1. What are instructional coaches' and teachers' attitudes toward the use of video-based evidence in teacher observations in an instructional coaching context?
2. What are instructional coaches' attitudes toward the use of the DataCapture mobile application in an instructional coaching context?
3. How is video-based evidence used in teacher observations in an instructional coaching context?
4. How do issues such as logistics, time requirements, or administrative support impact the use of video-based evidence and the DataCapture mobile application in an instructional coaching setting as perceived by coaches and teachers?

The findings will be presented by first considering the quantitative data sources, followed by the qualitative data sources. For each type of data, the findings will be presented in connection with the above research questions.

Quantitative Data

This study involved two quantitative data sources: (1) data obtained from the DataCapture mobile application, and (2) data obtained from the school district's survey of Title I personnel.

Data from the DataCapture Mobile Application

Each time a form was completed and submitted by an instructional coach, the data was saved in a database on the application server. An aggregate report of this data shows the number of records for each form type during the academic year 2012 - 2013. Records were submitted for each month from September 2012 to May 2013, with the most records being submitted in November 2012. The BEST Record had the most submissions. This may be because the form is shorter than the other form related to instructional coaching. As is mentioned in Chapter 3, no specific instruction was provided to the coaches on which BEST form to use in their interactions with the teachers. However, the BEST Teaching Standards form was used for formal observations, and the SS Technology form was used for interactions focused specifically on a teachers ability to use technology, so those two forms were not typically used by the instructional coaches. The data regarding the number of records submitted is given in Table 7.

Table 7

Records Submitted Using the DataCapture Application

Form Type	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May
BEST Coaching	6	6	18	1	24	9	7	9	1
BEST Record	6	36	151	62	131	123	57	114	25
BEST TSA*	3	29	10	1	9	3	0	0	0
SS Technology	2	7	7	0	0	0	0	0	0
Total	17	78	186	64	164	135	64	123	26

* TSA = Teaching Standards Assessment

In addition to the number of records submitted, the DataCapture mobile application also records the number of media items (video recordings or still images) submitted with each record. The data show the number of images and video recordings submitted in each month from September 2012 to May 2013. The highest number of media items were submitted in September and November while the highest number of any media type, which in this case is video recordings, was submitted in November, corresponding to the highest number of records submitted. However, in general, there were a very low number of still images or video recordings submitted using the DataCapture mobile application, with only one video being submitted during the study period. The number of still images and video recordings submitted using the DataCapture mobile application is shown in Table 8.

Table 8

Images and Video Recordings Submitted Using the DataCapture Application

Media Type	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May
Images	2	2	0	0	0	0	0	0	0
Video	1	0	3	2	0	2	0	1	0
Total	3	2	3	2	0	2	0	0	0

Data Obtained from the Survey of Title I Personnel

As part of their compliance with Title I Program regulations set forth by the U.S. Department of Education, the school district surveys all their Title I Programs personnel, which includes at least 14 different positions. Of those 14 positions, three are related

to instructional coaching: (1) Title 1 Program Facilitators, (2) Instructional Coaches (TAP Master Teachers), and (3) Instructional Technology Coaches. Although their job descriptions may vary to some degree, each type of instructional coach supports ongoing teacher development in the schools through observations and interactions with teachers, and each type of instructional coach used the DataCapture mobile application during this process. The data was obtained from the school district via three spreadsheets that contained itemized responses to each question pertaining to that particular position.

Title I Program Facilitators. There were a total number of 18 people who selected “Title I Program Facilitator” (TIPF) as their current position on the survey. There were seven items related specifically to those TIPFs, of which four were quantitative data sources. The responses for three of those four items that relate to this study will be discussed below. Those three items relate to the (1) objectives of the TIPFs, (2) the frequency which the TIPFs perform specific tasks, and (3) other duties the TIPFs perform outside of their official job responsibilities. The quantitative item not discussed below related to evidence the TIPFs have that they fulfilled their responsibilities. The response rate for each item was 16 or 88.9%.

Objectives. The first related item on the survey asked the TIPFs to indicate what they felt their primary roles and responsibilities were by selecting from a list. They could also indicate additional responses by selecting “other”. The responses are shown in Table 9. Six of the respondents, approximately 37.5%, selected “other” and those responses are shown in Table 10. According to the data, 100% of the TIPFs felt their responsibilities included assisting teachers with implementing curriculum, which is

Table 9

Objectives of the Title I Program Facilitator*

Answer Options	Response Percentage	Response Count
Implement the Title I Program	93.8%	15
Assist teachers with curriculum implementation	100.0%	16
Provide professional development	87.5%	14
Assist with program evaluations	75.0%	12
Lead intervention initiatives	87.5%	14
Coordinate with PIA	87.5%	14
Coordinate assessments	100.0%	16
Other (please specify)	37.5%	6

* This item asked, “Please indicate which of the following you identify with as the primary roles and responsibilities of your position as Title I Program Facilitator. (Select all that apply.)”

an essential part of instructional coaching. In addition, 100% felt their responsibilities include coordinating assessments.

Frequency. The second related item on the survey asked the TIPFs to indicate how often they performed specific activities. A total of 11 activities were listed, as well as an “Other” response, which only two respondents selected. The responses are shown in Table 11 and Table 12. According to the data, a large number of TIPFs meet with teachers and participate on the School Leadership Team on a daily basis. The School Leadership Team typically involves dealing with issues in the school regarding such things as discipline, supervision of students and teachers, meeting with parents, etc. On a weekly basis, many TIPFs meet with teachers and monitor academic interventions. On a monthly

Table 10

Other Responses to Objectives of the Title I Program Facilitator

Response #	Response
1	Oversee all district and state assessments. Coordinate accommodations for students with IEPs and 504 plans. Troubleshoot every morning with any concerns directly related to the school’s operation. I also coach teachers, lend an ear to concerns and issues. If the principal is not in the building, I also assist parents with any concerns. I also have daily duty to make sure our students are safe both before and after school.
2	Progress monitor student achievement data
3	Run Success for All Reading Program
4	<ul style="list-style-type: none"> * Subbing when teachers are out * Coordinating with community volunteers that come to Mission Manor * Attending evening events such as parent/student outreach resources * Being apart of the School Leadership Team * Being apart of the SAT * ELL Liaison
5	<p>ELD liaison</p> <p>School leadership team</p>
6	SFA program

basis, many TIPFs coordinate and administer district and state assessments, as well as providing professional development for teachers in their schools.

Other duties. The third related item asked the TIPFs to indicate any tasks that they performed that were not part of their official job responsibilities. There were six tasks provided, as well as an “other” option, which was selected by only one respondent. The responses are shown in Table 13. According to the data, the TIPFs spend some time doing “duty” for either lunch, recess, before school or after school. On a weekly basis,

Table 11

Frequency of Activities for the Title I Program Facilitators*

Answer Options	Daily	Usually once a week	Usually a few times a month	Occasionally throughout the year	Never	Response Count
Manage Title I documentation	3	4	7	2	0	16
Meet with teacher teams/collaborate	9	7	0	0	0	16
Implement parent involvement policies/compacts	2	1	5	7	1	16
Provide professional development	0	4	8	4	0	16
Coordinate assessments	1	1	12	2	0	16
Develop/monitor interventions	2	7	6	1	0	16
Coordinate with PIA	3	2	6	5	0	16
Participate on School Leadership Team	7	3	4	2	0	16
Administer assessments	1	3	9	3	0	16
Model/provide teaching techniques/strategies	4	4	6	2	0	16
Participate as a member of the school's Site Council	3	3	2	4	4	16
Other (please specify)						2

*This item asked, "Indicate the frequency which you performed each of the following activities as Title I Program Facilitator."

Table 12

Other Responses to Frequency of Activities of the Title I Program Facilitator

Response #	Response
1	We are an SFA school so I administer assessments to students who are newly enrolled. That can occur on a daily basis some weeks and once a month on other times of the year.
2	Depending on the month/week I modeled and provided teaching techniques/strategies once or twice a week.

Table 13

Other Duties Performed by the Title I Program Facilitators*

Answer Options	Daily	Usually once a week	Usually a few times a month	Occasionally throughout the year	Never	Response Count
Cover for front office	0	1	2	3	10	16
Duty (lunch, recess, AM/PM)	5	2	3	6	0	16
Substitute teaching/cover classes	1	4	5	5	1	16
Assist with during school non-academic events (picture day, field day, etc.)	0	0	5	10	1	16
Assist/coordinate before/after school non-academic events	0	1	4	7	4	16
Act as Principal designee/LEA Representative	0	1	3	5	7	16
Other** (please specify)						1

*This item asked, "Indicate any tasks you had to undertake (if any) that were not in your official 'job responsibilities' (HR job description) but were necessary to assist the functioning of your school/district."

**The only respondent for the "Other" option stated, "Depending on the week, substituting can be more than once a week."

the TIPFs spend time substituting for teachers who are absent, while on a monthly basis, they substitute for teachers and assist with non-academic events such as picture day. The data also indicated that many TIPFs support the principal throughout the year by assisting with non-academic school events and sometimes acting as the principal's designee in certain meetings and responsibilities. It is interesting to note that all 16 respondents indicated that they performed duties not in their official job responsibilities in support of their school or district, thus possibly reducing the time they have to perform tasks related to instructional coaching.

Instructional Coaches (TAP Master Teachers). There were ten respondents who indicated "Instructional Coach (TAP Master Teacher)" (IC) as their current position. There were a total of seven items specifically concerned with the ICs, of which four were quantitative data sources. Of those four items, three will be discussed below: (1) objectives of the ICs, (2) frequency with which the ICs performed certain tasks, and (3) other duties the ICs performed that were not part of their official job responsibilities. The fourth item not discussed below related to evidence the ICs have that they accomplished their job responsibilities. The response rate for each item discussed below was ten, or 100%.

Objectives. The first IC-related item asked the ICs to indicate what they felt were their primary roles and responsibilities by selecting items from a list. An "other" option was also provided, which three respondents selected. Their responses are shown in Table 14 and Table 15. According to the data, between 90% and 100% of the ICs felt all the items listed fell under their primary roles and responsibilities.

Table 14

Objectives of the Instructional Coach (TAP Master Teacher)*

Answer Options	Response Percentage	Response Count
Positively impact student achievement	90.0%	9
Participate in continuous school improvement efforts	90.0%	9
Provide teachers with instructional coaching	100.0%	10
Provide teachers with instructional support	100.0%	10
Plan and facilitate change to improve the instructional program	100.0%	10
Provide professional development as needed to implement the school's strategic improvement plan	100.0%	10
Other (please specify)	30.0%	3

* This item asked, "Please indicate which of the following you identify with as the primary roles and responsibilities of your position as Instructional Coach. (Select all that apply.)"

Table 15

Other Responses to Objectives of the Instructional Coach (TAP Master Teacher)

Response #	Response
1	Liason for data between [the school district] and the Family Literacy Program.
2	Coordinate assessments (RAPS360, AZELLA, benchmarks, AIMS)
3	Implement strategies for transition to Common Core and filling the gaps prior to full implementation.

Frequency. The second IC-related item asked the ICs to indicate the frequency with which they performed certain tasks. A total of 11 activities were listed, as well as an “other” option, which was selected by only one respondent. The responses are shown in Table 16. According to the data, the ICs spend time each day observing teachers, conducting in-class coaching, organizing and implementing problem-solving actions with teachers, and serving as members of their school’s Leadership Team. On a weekly basis, the ICs meet with their principals to coordinate professional training, develop lesson plans with teachers, assist with professional development documentation, and participate in professional growth opportunities. Monthly, the ICs spend time analyzing student data, modeling instructional strategies for teachers, and collaborating with staff to plan professional training.

Other duties. The third IC-related item asked the ICs to indicate any other duties they performed that were not part of their official job responsibilities. There were seven activities listed, as well as an “other” option, which was selected by only one respondent. The responses are shown in Table 17. The data indicate that ICs are often asked to cover classes for teachers who are absent, or help coordinate and administer assessments. ICs may also occasionally be asked to perform “duty” on the playground or in the cafeteria. This potentially reduces the time the ICs have to perform duties related to instructional coaching.

Instructional Technology Coaches. There were 11 people who selected “Instructional Technology Coach” (ITC) as their current position. A total of seven items on the survey specifically concerned ITCs, of which three were quantitative data sources. Of those three items, two will be discussed below, which relate to (1) the objectives of the

Table 16

Frequency of Activities for the Instructional Coach (TAP Master Teacher)*

Answer Options	Daily	Usually once a week	Usually a few times a month	Occasionally throughout the year	Never	Response Count
Analyze student data	3	4	3	0	0	10
Organize and implement problem-solving actions with teachers	5	4	1	0	0	10
Collaborate with the principal to plan professional training	1	7	2	0	0	10
Collaborate with staff to plan professional training	0	5	3	2	0	10
Conduct in-class coaching	6	3	1	0	0	10
Observe teaching	7	3	0	0	0	10
Model instructional strategies	3	4	3	0	0	10
Develop lesson plans with teachers	1	6	2	1	0	10
Serve as a member of the school leadership team	5	4	0	1	0	10
Assist with professional development documentation	1	6	1	1	1	10
Participate in professional growth opportunities	0	6	3	1	0	10
Other** (please specify)						1

*This item asked, "Indicate the frequency which you performed each of the following activities as Title I Program Facilitator."

**The only respondent to select "Other" responded, "Work with Quality First coach on the implementation of our star rating and Quality Improvement Plan."

Table 17

Other Duties Performed by the Instructional Coaches (TAP Master Teachers)*

Answer Options	Daily	Usually once a week	Usually a few times a month	Occasionally throughout the year	Never	Response Count
Cover for front office	0	0	0	2	8	10
Duty (playground, cafeteria, etc.)	2	1	2	4	1	10
Substitute teaching/cover classes	0	5	2	3	0	10
Assist with during school non-academic events (picture day, field day, etc.)	0	0	5	3	2	10
Act as Principal designee	0	0	1	0	9	10
Administer student assessments	0	0	5	4	1	10
Coordinate student assessments	0	0	6	2	2	10
Other** (please specify)						1

*This item asked, "Indicate any tasks you had to undertake (if any) that were not in your official 'job responsibilities' (HR job description) but were necessary to assist the functioning of your school/district."

**The only respondent for the "Other" option stated, "Write lesson plans and grade for classes in which there was a long term substitute."

ITCs, and (2) the frequency with which the ITCs performed certain tasks. The response rate for these items was actually 13, or 118%. Since all Title 1 personnel completed the same survey, it is possible that some respondents inadvertently answered these two items without selecting ITC as their current position.

Objectives. The first ITC-related item asked the ITCs to indicate what they felt were their primary roles and responsibilities as an ITC. They were asked to select all

that applied from a list of seven options, along with an “other” option, which two of the respondents selected. Their responses are shown in Table 18 and Table 19. The data show that between 92% and 100% of the ITCs felt all seven responsibilities fell under their primary objectives.

Table 18

Objectives of the Instructional Technology Coaches*

Answer Options	Response Percentage	Response Count
Participate in professional development	92.3%	12
Facilitate technology activities at the site	100.0%	13
Analyze student data to identify teaching and learning needs	92.3%	12
Collaborate with teachers and other instructional staff	100.0%	13
Assist with access to technology resources	100.00%	13
Serve in school leadership team	92.3%	12
Carry out non-instructional duties as assigned and/or as needed to ensure student safety	92.3%	12
Other (please specify)	15.4%	2

* This item asked, “Please indicate which of the following you identify with as the primary roles and responsibilities of your position as Instructional Tech Coach. (Select all that apply.)”

Table 19

Other Responses to Objectives of the Instructional Technology Coach

Response #	Response
1	“U name it I do it! :)”
2	SFA Solutions Team, SFA Meetings

Frequency. The second ITC-related item asked the ITCs to indicate the frequency with which they perform certain tasks. A total of ten activities were listed, along with an “other” option, which no participants selected. Their responses are shown in Table 20. The data indicate that ITCs spend some time each day carrying out non-instructional duties as assigned, coaching and doing walk-through observations. They spend some time each week modeling lessons and holding feedback meetings with teachers, as well as participating in trainings outside their school and coordinating subject-specific activities such as science fairs or math competitions. At least a few times each month, ITCs spend time facilitating or administering district and state assessments, or analyzing the data from those assessments. They also spend time each month participating in training meetings outside their school.

Summary

The data from the DataCapture mobile application and the Title I Personnel survey indicate that the instructional coaches rarely use video with teachers, but that they regularly submit coaching records using the application. In addition to their coaching duties, however, they also perform many other tasks. Some of these tasks are related to their job responsibilities, while other tasks are assigned to them by the building principal

Table 20

Frequency of Activities for the Instructional Technology Coach*

Answer Options	Daily	Usually once a week	Usually a few times a month	Occasionally throughout the year	Never	Response Count
Participate in trainings outside of my school	0	5	7	1	0	13
Facilitate and/or administer assessments	0	0	7	6	0	13
Analyze data	2	2	8	1	0	13
Coaching and walk-throughs	7	5	0	1	0	13
Provide professional development on site	3	2	3	5	0	13
Carry out non-instructional duties as assigned and/or needed to ensure student safety	9	3	0	1	0	13
Model lessons	1	7	2	2	1	13
Coaching feedback/meetings	4	6	2	1	0	13
Coordinate subject specific activities, i.e. Macro Math, SFA, Science Fair	1	5	4	2	1	13
Participate in Child Study or Teacher Assisted Teams (TAT)	0	1	3	5	4	13
Other (please specify)						0

*This item asked, "Indicate the frequency which you performed each of the following activities as Instructional Tech Coach."

or other administrators outside of their normal job responsibilities. It is apparent from the data that these non-coaching-related activities subtract from the time the instructional coaches have to observe and meet with teachers.

Qualitative Data

The purpose of this mixed-methods study was to examine how instructional coaches use video-based evidence and to determine what issues affect the use of video-based evidence in an instructional coaching context. The participants in this study were six instructional coaches and two in-service teachers. During the two-month study period, the instructional coaches attempted to record video-based evidence as part of their normal coaching observation duties, and use that evidence to help teachers reflect on their performance. At the end of the two-month study period, the coaches and teachers participated in interviews with the researcher. A total of six interviews were conducted over a period of two days. During the first interview, two coaches attended and were interviewed together. The remaining four coaches were interviewed separately, using the same set of interview questions (see Appendix F). The two in-service teachers who participated were interviewed together during the last interview session, using interview questions specific to teachers (see Appendix G). Each interview session lasted an average of 27 minutes and 20 seconds, and was recorded on audio with the participants' consent. With the exception of the third interview session, all interviews were also video recorded. The audio recordings were then transcribed by the researcher, resulting in 38 pages of single-spaced transcribed notes. A breakdown of each interview session is given in Table 21.

Table 21

Breakdown of Interview Session with Coaches and Teachers

Interview Session	Length (minutes)	# of people*	# of transcribed pages
1	33:07	2 coaches	10
2	23:09	1 coach	5
3	24:50	1 coach	5
4	38:13	1 coach	9
5	30:07	1 coach	6
6	14:33	2 teachers	3

* The number of people in attendance does not include the researcher.

The transcriptions were deductively analyzed and given initial descriptive codes based on the analytical framework shown in Table 6 in Chapter 3. These initial codes were based on the research questions for this study. Code 8 allowed for any data to be categorized that did not fit into the initial coding framework. This data was then inductively analyzed to look for patterns and issues that may affect the use of video-based evidence in instructional coaching not originally considered. The findings will be presented here as they relate to each code.

Before presenting the findings from the interviews and other qualitative data sources, it should be pointed out that although six instructional coaches volunteered to participate in the two-month study period, only two of those six coaches were actually able to record video-based evidence and use that evidence with teachers to help them reflect. Thus, during the interviews with the coaches who were not able to record video, there was a general focus on their inability to record video and challenges they had.

Coaches' Attitudes toward the Use of Video-Based Evidence

Based on their responses to interview question #1 (*What is your opinion about using video recordings during observations of teachers and for encouraging self-reflection of teachers?*), question #2 (*What problems or concerns, if any, do you have about using video during teacher observations?*), and question #3 (*Has your attitude toward using video changed since the beginning of the study period?*), most of the instructional coaches interviewed agreed that using video-based evidence with teachers is effective at helping teachers reflect on their performance. Some their general comments included:

"I think there is a huge potential for the use of video with teachers."

"I'm really supportive of the idea of using video. I think it's the wave of the future. I think it's hugely beneficial to both the coach and the teachers."

"I think it is a good thing for anybody."

Having been teachers themselves, many of the coaches had had experience being recorded while teaching. Some of them commented on the impact video had on their teaching while discussing their attitude toward using video with other teachers:

"It was extremely difficult, but amazingly powerful to help me really analyze my instruction."

"As a teacher, I found it really helpful to my own practice because I caught things that I never would have caught on reflection alone."

"It is effective...I had to watch myself and do some reflection on it..., and I understood the things I would continually do [referring to her mannerisms and speech patterns]."

"I've been video-taped for lessons myself, and...I learned from watching myself."

Several coaches felt that using video was effective because it added a level of objectivity and teachers could see exactly what they were doing rather than having to rely on someone else's version of events. Some of their comments included:

"I think, in terms of reflection for teachers, video recording is very positive because...it's more evidence-based than feelings-based."

"Usually it is very helpful when we do use the video because it illustrates the factual, data-driven points that you want to make during the coaching, so it's not your opinion....It's irrefutable when you've got it on camera."

Coaches also felt that using video allowed them to be more effective during observations. They reported that the video allowed them to focus more on what was happening in the classroom and not worry so much about writing everything down. A few examples of their comments included:

"[Using video has] allowed me to be much more efficient in terms of what I observe in the room, and be able to collect much more data than I was able to collect before."

"It really ameliorates the whole problem with scripting....[Y]ou always had to navigate that balance between scripting and writing down your notes and observing and keeping your eye on what was happening in the room...with video it frees up a lot of that scripting piece. I still use pen and paper when I'm video taping, but now I can use that pen and paper for what I feel are a lot more substantive and useful notes on exactly what it is that I am looking for, as opposed to trying to catch every little detail or trying to script out what's happening in the room. I can always go back and review it, and make sure what I heard was correct...you know, make sure that my notes were accurate."

Only one coach felt that video was not effective because of its impact on teachers' and students' behavior. That coach commented:

"[Video is] a little bit too intrusive on the teacher....[P]eople get nervous and I'm very aware of that...immediately when you take out the...video camera...attitudes change a little bit."

Teachers' Attitudes toward the Use of Video-Based Evidence

Although it was not a specific question during the coaches' interviews, several instructional coaches commented on teachers' perceptions and attitudes toward the use of video during observations. Most agreed that a majority of teachers felt apprehensive toward being recorded during observations. Some of their comments included:

"[N]obody volunteered. They were scared to death to even volunteer for it."

"[T]eachers are very uncomfortable with video....I'm working with several teachers and they have absolutely no interest in being video taped."

"[T]he [teachers] that wanted to do it thought that it was positive in the sense that they could see themselves and we could have the dialogue about what we saw, and they could see what they were doing. [T]here were others that just weren't comfortable being video recorded."

"One of the things about using video is recognizing much more acutely or persistently the fear and apprehension that teachers have....They're still very nervous about creating "permanent documents" of their instruction, and how that will be used, either for them or against them. There's a lot of apprehension; there's a lot of nervous people."

Some coaches gave a variety of reasons why they thought teachers were reluctant to be recorded, mentioning issues such as nervousness, embarrassment, novelty and uncertainty. Some of their comments included:

"It's hard to watch your mannerisms. We don't notice how we gesture and talk with our hands, or we don't hear ourselves with all of our conversation pauses, and it's hard to see those. Whatever we do, we do subconsciously...and when it's on video, it's not unconscious anymore."

"The biggest problem I see...is that we have this gap between teachers' perceptions of what videotaping is and the functionality of it. I think there is an issue of trust and they don't necessarily believe that the taping process is mutually beneficial. They see it as more of a punitive kind of measure, and there are teachers who aren't comfortable with it. We run into that all the time."

“I think the majority of teachers are still kind of on the fence in that it’s such a new thing, it’s so novel, and it’s something that so few people are doing that when you ask them, they are a little bit taken aback because they don’t really know how to frame it or contextualize it.... We have a certain percentage of teachers who are dead-set against it, and we have some teachers who are supportive of it, but I would say the majority of teachers are still somewhere in the middle.”

“It’s bizarre to have video in the classroom, and until you establish a routine using the video, if you’re doing it as a walk-through, it becomes very disruptive. It’s disruptive enough for me to walk into a classroom...it disrupts the flow of conversation whenever you have anybody walk in...it can pull students off-task, even if for only a few seconds...then if I start filming....”

“It’s getting other teachers to have the courage to watch themselves on video that’s a big stumbling block. Until it just becomes pervasive, and the norm, and we all get used to it, it’s going to be the big thing because you are nervous and your instruction will be a little more stilted...it’s not going to be the real you up there, at first, and it won’t be your real students at first, when that camera is there.”

“[Y]ou see the change between when it’s informal...like when there’s no video camera to where you take out the camera and then it becomes something different.”

In the interview sessions with the teachers, they were asked the following questions about their attitude toward using video:

- 1. What is your opinion of being video recorded during observations and using the video clips for reflection?*
- 2. Has your attitude about using video for reflection changed since using it with your coach?*

Both teachers agreed that video was effective at helping teachers reflect and improve their practice. One teacher commented:

“At first, I was a little nervous because I don’t like watching myself or listening to my voice, but afterwards it was fine.”

The other teacher who was interviewed commented that he chose not to be video recorded this time because he had a choice. He commented:

“I didn’t really want to because I’ve seen my lessons being filmed and looked at. It didn’t really matter, but [during my student teaching] I didn’t have a choice, and this time I had a choice, so I was like, ‘Not this time.’”

The teachers also mentioned that they had heard other teachers discussing using video for reflection, and that the idea was not well-received. They commented:

“To [us] it wasn’t a shock, but you could tell...other teachers were like, ‘Not me’ or ‘I don’t want to do this.’”

Coaches’ Attitudes toward Using the DataCapture Mobile Application

Given that the DataCapture mobile application was still in its beta development phase, there were some technical glitches that overshadowed the comments from the instructional coaches during the interviews. Most of these technical problems occurred at the beginning of the school year and were corrected in later updates to the application. However, as explained below, due to additional responsibilities and constraints on the instructional coaches time, many of the coaches interviewed were not able to use the DataCapture mobile application for teacher observation during the study period. Thus, many of their comments about technical issues regarded these earlier versions of the application. For example:

“You know, I tried...because I had had trouble with my login for the application. It seemed to not work, but it’s fixed now.”

“There were three or four occasions where I tried using the app and it was just really frustrating because my data would disappear and I wouldn’t be able to find it again. I know that those are issues they’re working through. In having conversations with other coaches, I know that my experience wasn’t unique.”

“I tried to use the app a couple times, but it wouldn’t save the information and it was gone...because I thought if you save it instead of submitting it, you could go back and make comments...but maybe it was submitted instead of saved...that was earlier on in the semester.”

“I just downloaded the most recent update about a week or two ago, but I haven’t pattered with it since. I mean I haven’t gone through and done an observation with it since then.”

“There was, I believe, at least two or three times where I did use some video, and it got deleted. So I had some technical issues with the app. Like the window closed, and I opened the window back up to see what I had, and the material was no longer there.”

“I didn’t even go in and do a lot of the observations with the app because I’m also the AIMS coordinator and benchmark...and just from the first of the year all the way until AIMS, there was some type of testing coordination going on.”

“It has been a while since I used it. I think I did update it once during the time of the study.”

Other comments were about improvements to the applicatoin that coaches felt would benefit them in their coaching. For example, several coaches commented that it would be nice to have a way to retrieve the coaching records once they had been saved, but that the application didn’t support this:

“When I finished recording a video and I click “Submit”, I don’t have any access to the video anymore. It just kind of disappears, and I can’t use them again. Now on the app, I save the videos and don’t submit them. So, I have my whole list of videos, and I can’t rename them either. They’re just this random combination of letters and numbers and I don’t know who’s who anymore. When I only had 3, it wasn’t a problem, but now I have 10 and that’s not so good.”

“[The DataCapture application] wouldn’t let you see the report after you submitted it, so you had no way of knowing exactly what you said, so it was kind of odd and hard to go back into the classroom and talk to the teacher about it.”

“The other thing about the app, when I was able to use it a little bit...when it would save, it would save with a really long number as the name, and I couldn’t save it as a specific teacher’s name to be recalled.”

One commented that adding a way to send video clips to the teachers would be beneficial:

“So, I do think that with the ASU app, I couldn’t send it to her ahead of time. We could only view it together. Otherwise, I would have to give her my iPad, give her my login, tell her how to access it, and it was cumbersome.”

In examining the aggregate data from the DataCapture mobile application, the researcher noticed that several instructional coaches who used the application regularly did not participate in the study, so it may be that the comments above do not represent the majority of coaches in the participating school district. Indeed, several of the coaches who participated in the interviews commented that their interest in participating in the study came from an interest to get into the classroom and use the application more than they had previously. It is possible that coaches who used the application more regularly did not have similar motivation.

Coaches’ Use of Video-Based Evidence in Instructional Coaching

Due to some issues discussed later in this chapter, only two of the participating coaches were able to record video and use that video with teachers during the study period. In their responses to interview question #6 (*How did you use video-based evidence with teachers during your coaching?*), these coaches indicated several different ways they used video in their coaching. One coach commented that he used the video to help with his note-taking, allowing him to focus more on what was happening in the classroom and not on recording minor details. He said:

“It really ameliorates the whole problem with scripting, which to me was always a huge headache. When I attempted to do observations, you always had to navigate that balance between scripting and writing down your notes and observing and keeping your eye on what was happening in the room...with video it frees up a lot of that scripting piece. I still use pen and paper when I’m video taping, but now I can use that pen and paper for what I feel are a lot more substantive and useful notes on exactly what it is that I am looking for, as opposed to trying to catch every little detail or trying to script out what’s happening in the room. I can always go back and review it, and...make sure that my notes were accurate.”

One coach commented that, originally, she viewed video clips with the teachers as part of the reflection conversation, but that this proved ineffective:

“The first couple of times that I used video with [the teacher], we had to watch the video together, and it took my time and it took her time...it took away from the time that we set aside to have a conversation because we were watching video. Instead of being able to use the video as a reference point to when things were happening, she needed to watch and reflect and have a conversation all in that single space of time.”

She suggested having a way for teachers to view the video prior to the reflection conversation would be more effective:

“I think one of the most powerful things to do with video is to be able to send it to teachers prior to the post-conference so they have that time to reflect and to think without me sitting over their shoulder...I need a way to get teachers to watch it without me watching them watch it. So we have more time for reflection and, quite honestly, it’s really hard to watch yourself on video, and to have someone watch you watch yourself on video [is] hard.”

Another coach experimented with uploading the video clips to YouTube, utilizing YouTube’s built-in privacy features. This gave him access to additional features, such as annotation, and easy access for the teachers to view the clips on their own time. He said:

“Uploading the video onto YouTube allowed me to use the annotation feature on YouTube, so I could put notes right into the video for a teacher that wanted to watch it later. So, for example, at 5 minutes and 43 seconds, if there was a student that was doing something noteworthy, or if the teacher said something that was impacting student behavior, I could put a little note in the video that would pop-up and say, ‘Great use of positive reinforcement’ or ‘I noticed misdirection’, or

‘Confusion over directions here’. So you can put in specific notes right in the video, embedded right in, which really makes it helpful in breaking it down for the teacher. Then, typing the notes up, I’ve been using Google Docs for that because then I can just share out those notes laterally with the teacher and embed hyperlinks to that video. The video is still not publicly available, it is still private, but now the teacher can get to all those uploaded links right from the notes sheet.”

When asked about the content and length of the video clips the coaches used with teachers, they both gave different responses. One coach used short video clips that focused on specific aspects of teaching:

Usually [the video clips are] never more than maybe a minute or a minute and a half because usually we’re zeroing in on specific things.

The other coach, however, used longer clips that showed the beginning, middle, and end of the observed lesson:

The clips that I have cut and ready to show her are about five to six minutes [each]. So, I have a beginning, a middle, and an end of that whole 35 minutes I was in her classroom.

These coaches both indicated that having teachers view the video on their own prior to meeting with the coach is the most effective use of time.

Issues Impacting the Use of Video-Based Evidence

The remaining interview questions focused on issues that impact the use of video-based evidence in an instructional coaching context. The qualitative data were analyzed at first using the framework in Table 6 in Chapter 3, which had specific codes for logistics, time requirements, and administrative support. There was also an additional code used for comments relating to other issues that impacted the use of video-based evidence during the study period. The data in this category was then inductively analyzed to look for additional patterns that emerged. Each of these issues are discussed below.

Logistics. For the sake of this study, logistics referred to issues surrounding the actual recording of video during an observation, such as placement of the recording device, or evidence of the observer effect (Ward, 1981). The coaches did not all use the same process for recording and storing video. In addition, some of the coaches mentioned using different devices to record video in the classroom.

The two coaches who recorded video during the study period used the iPad as their recording device. However, they had slightly different processes. One coach gave a very thorough description of how he recorded video:

“I have the Otterbox stand for the iPad and [I can] set it up on a desktop or a table top at the back of the room. Whenever I did my observations, I would always come in before the bell and set up at the back of the room and try to be as inconspicuous as possible so I could capture the kids coming into the class. I would set the iPad up so it had a good view of where the teacher was going to be delivering initial instruction and capturing as many students as possible. Once the recording started, I would take pen and paper notes on just a legal pad while the camera rolled. I did find that, due to problems with memory limitations on the iPad, I generally couldn't go longer than 8 or 9 minutes on one clip. So, what I would do is I would tape an 8 minute segment, and then I would stop, and then tape another one. Then I would upload the clip to YouTube on a privacy setting so no one else could see it, and that way I would have more space on the iPad to do more observations....Depending on the activity or what was going on in the classroom, I would turn it and focus it on certain students that I observed that maybe weren't in frame, or if there was a student doing something on a laptop or device that perhaps was off-task, I could move it and pick it up sort of over their shoulder and take clips of what it was that they were doing. I didn't tend to walk around the room with it because I felt that was really disruptive, and the last thing I wanted to do is disrupt the normal classroom environment....I wanted to make sure that I remained as unobtrusive as possible at the back of the room.... Occasionally, when the students were working independently or in small groups, then I would get up and walk around because they were focused on something else. Then I could take video of specific groups or specific individuals working.”

The other coach described her process as follows:

“I recorded the whole time I was in the room, and I moved the iPad around to record different aspects of class. Then, during the uploading and the reflection,

I cut out the, you know, seven minutes when they're just reading....I used the iPad to film, and my laptop to script because doing both with the iPad was cumbersome....I scripted from the class, and not using the video after-the-fact."

Other coaches who were not able to record video during the study period, but had attempted to record video previously, commented that it was awkward for them to use the iPad as a recording device. Some of their comments included:

"I had to use the iPad all those 5 or 6 times that I [recorded video], and you're walking around with the iPad, and it gets in the way."

"If I remember, there was a certain way I had to hold it, but it was a while back. If I noticed it, it probably wasn't a natural way to hold the iPad."

One coach was not able to use the iPad, but commented that he had used his phone to record video. He said:

I did not have a chance to use the iPad for the actual filming of it....I had actually used a phone on a few occasions with just a few teachers who I really thought would not get it unless they saw it. And so, it would just be a phone sitting on the table like this [holds his phone on the chair with his hand down at his side with the camera facing out], as unobtrusive as possible.

Several of the coaches mentioned the observer effect (Ward, 1981) and that they attempted to avoid disrupting the flow of the classroom when they recorded video. They mentioned that this was always more of a problem when the presence of a camera was new to the students, but that it lessened once the students got used to the camera. Below are some of their comments:

"You know, the kids see an iPad or they see a camera and suddenly it's all about the camera....I wanted to make sure that I remained as unobtrusive as possible at the back of the room. Generally they didn't notice me in the back of the room. Usually it was the novelty factor, sort of in the first minute after they walked into the classroom, but that wears off pretty quickly and once they get started, they kind of forget you are there, which is good."

“At first the kids were waving at the camera, and it was distracting, but then it just became normal, and they just ignored me. Even when I was holding the iPad over them when they were working in groups, they would just look up for a moment, and then look down and continue working. Once the kids were used to what I was doing, and they knew that I wasn’t going to get them in trouble or anything, it was fine.”

Time requirements. This code dealt with issues resulting from the time required to record, edit, and view video-based evidence for teacher reflection. Because most of the coaches interviewed were not able to use video-based evidence with teachers during the study period, there were only a few comments related to this issue. Many of the coaches commented that time was an issue, but these comments related more to their coaching duties overall, and not specifically to the use of video. Thus, these comments are discussed in a later section.

Generally, the coaches felt that time was an issue when using video-based evidence, especially finding time to view the video clips in order to reflect with the teacher. One coach commented:

“The single biggest problem with doing coaching is the windows of availability that you have with the teachers, in that you might be able to schedule a time to reflect with the teacher during their planning period, but then they get a phone call, or they get a call from their principal that asks them to go somewhere else. So, you might walk in the room with the expectation that you are going to have 40 minutes, but now suddenly you have 20 minutes, or sometimes even less. Sometimes you have to schedule these post-conferences weeks in advance because their calendars are so full. So, on some occasions where there is time, we’ll have the opportunity to break down the video. But I’ve come into post-conferences with the intent of saying, ‘OK. We’re going to watch the video’ and realizing ‘OK. We’ve only got 12 minutes’ and at that point we really can’t break the video down if we’ve only got 12 minutes for the whole post-conference.”

Another time-related issue involved editing the video footage to create clips that the teacher could view to reflect on their performance. One coach suggested that the

added time needed to create the clips impacted her ability to provide immediate feedback to teachers about their performance:

It takes me some time to go back and pull out the clips from the video and do my commenting. It might be a couple of days before I can do that. I was in the teacher's classroom on Tuesday, and now it's Thursday, and I haven't sent it to her yet because of technology issues.

So, while recording the video may not require additional time on the part of the coach, finding time to edit the video, and time for the teacher to view the video prior to the reflection conversation appears to be a problem.

Administrative support. This code dealt with administrative issues that impacted the use of video-based evidence in instructional coaching. On a district-level, the administration encouraged the use of video, and provided the technology to the coaches needed to access the DataCapture mobile application. However, it was apparent from the coaches comments that the most important level of administrative support in this particular school district was the building principal. Every coach who commented on this issue made mention of the building principal. In general, they commented that their ability to use video with teachers depended on the attitude of the building principal.

Below are some of their comments:

"I think a lot depends on the building principal. Ours used the app on her own, but she would use it hit and miss, and not necessarily all the time, but it wasn't emphasized....I know there were schools where the principals made it mandatory for the leadership team. That's what they did. Every single teacher in that school was going to be video-taped....Personally, I think it depends on if the principal chooses to do it or not."

"Ultimately it depends on the site leadership...some principals are very supportive of the idea of the technology facilitators on site being in the classroom and being an instructional presence. And other principals want them doing different things...you know, they want them doing intervention classes or helping

with administrative duties around the school or site. The people on site directly report to the principals, so they take their daily orders from the principals. If they show up to work that day and the principal says their subbing and not doing observations, that's what's going to happen.

“Coaching is a huge priority in my job. However, my principal and the assistant principals here are incredibly hardworking individuals, so when they ask me to do something, of course I step up to the plate and do it. But they also know how important it is for me to be in classrooms, so we balance.”

“I’m afraid building principals will not take [the use of video] seriously and they will treat it like some other stupid compliance measure, and we will not see the instructional change, or the attitudinal behavioral changes by teachers that need to take place.”

Other issues. Besides logistics, time requirements, and administrative support, the coaches commented on other issues that impacted their use of video-based evidence in instructional coaching. These comments generally fell into two categories: (1) obstacles to instructional coaching, and (2) suggestions for successfully using video-based evidence in instructional coaching.

Obstacles to instructional coaching. The most common thread in the coaches comments revolved around obstacles they encountered that kept them from their coaching duties. For most of the participants, instructional coaching is only a part of their responsibilities. Many have responsibility for managing standardized assessments or student technology, which hinders their ability to actually get into the classroom to observe teachers. In addition, several coaches mentioned having to complete tasks that were not part of their job descriptions, such as playground duty or covering classes for teachers who were absent. Some of the coaches general comments regarding these additional responsibilities included:

“[E]ven though the jobs have titles, they don’t necessarily correspond with a specified list of duties. It’s just whatever is needed, and at the site level because of issues related to logistics and infrastructure and management of the devices and everything else, it’s been very difficult for our technology facilitators on site to do any actual instructional work.”

“[S]o a lot of what the facilitators on-site have been doing are things related to managing the devices and making sure the network is working and troubleshooting and fixing issues with connectivity and tracking down missing laptops...you know, doing all the management pieces. Every single one of our tech-facilitators has basically complained about the fact that they can’t get into classrooms because of the lack of time and the other priorities that are put out there.”

“I do cover classes, on average, 3 – 4 times a week because teachers’ time is tighter than my own...otherwise a teacher is giving up their planning period, and it’s tough...and the amount of testing that I have to coordinate and be in charge of and the amount of paperwork [is] insane....[E]very time there is a district benchmark, we have a week to prepare for the benchmark, then the week of benchmarks, and then we have make-ups and data analysis the following week. So, for every 4 days of testing time, it’s 3 weeks of my time, where I maybe have an hour or two each day to go work with teachers....Coaching is a piece—probably a third of my job—assessment is another third, and I would say paperwork and compliance issues are another third.”

“[My job is] more admin. I would say like 70% admin, 30% coaching, maybe.”

“[M]y job description had all these things about technology, and then ‘and anything else’. Well, that ‘anything else’ is 80% of what I do.”

“The only thing is that when the principal says, ‘Today you’re going to go do Kinder duty, lunch duty, this, and sub for this other person,’ OK. I can’t say I’m not going to sub for that person that’s not here—that’s not realistic.”

“[I]f a teacher is out for medical leave, maternity leave, or some other type of long-term leave, I have to go in there and I have to do the daily lessons for 6 – 8 weeks until they return. So, that is 1 – 2 hours a day, 3 days per week, which could have been used for walk-throughs and observations.”

“[W]e’ll have planned what we’ll get done, you know...on the calendar we’ll plan out that we have so much time to get a certain job done. But often something will happen during the day...duties, whether it be lunch or bus duty, or something

happened with a kid and someone needs assistance or you need to go investigate what took place...or a parent arrives at school. So there's other little things that might happen that were unexpected that will push the agenda back."

In particular, the study period fell during the last two months of the school year, when many of the standardized tests are being administered in the schools. Some of the coaches comments regarding the amount of standardized testing included:

"I'm the one who prints all the documents, and distributes all the documents, prints everything up and loads everything up and scans everything. So, by the time you do all that, there's no time."

"On testing days, you end up having teachers having to juggle their schedules around, or they're not active in the classroom. What became more of a challenge for me was the prep work, the execution of, and then the clean-up...it's not affecting the teachers anymore, but it's affecting those of us who work in the office, who're now saddled with literally a truck-load of boxes of test books that must be packaged and counted and collated and sent back to the state, or received from the state and counted through."

"I didn't even go in and do a lot of the observations with the app because I'm also the AIMS coordinator and benchmark...and just from the first of the year all the way until AIMS, there was some type of testing coordination going on."

"[T]here are so many assessments that I have to coordinate, and run reports...that's pretty much what I do, unfortunately."

"[T]he testing usually took the kids up until lunch, and then it was my responsibility to pull kids for make-ups during the afternoon or to count AIMS and secure all the testing materials...so my whole day was completely full."

"[W]e not only maybe have to organize [the assessment], but we are also people who are administering or proctoring...so that takes away from actually getting into coaching."

In addition to the comments from coaches during the interviews, the instructional coaches responded to a qualitative question in the Title I Personnel survey that addressed challenges they faced in accomplishing their goals during the school year. Some of the

comments from those responses reflect similar concerns as the coaches responses to the interview questions, including standardized assessments and additional responsibilities outside of instructional coaching. Some of their comments include:

“Time to accomplish multiple tasks was the main challenge. Testing greatly impacted my time throughout the year. Benchmarks, RAPS (progress monitoring every 2 weeks and 4 Full Diagnostics), AZELLA and AIMS preparation, support and implementation, took up a large portion of my time.”

“Obstacles that I faced this year that limited me from reaching my objectives to the highest degree was subbing in classrooms thus not allowing me to do my job. Secondly, I wasn’t able to get into classrooms every week to conduct informal walk throughs, a coaching cycle due to preparing for district or state assessments. I felt that each month there was some sort of assessment that students need to complete. I had to be on hand for trouble shooting due to technology in the 1:1 classroom or computer lab for RAPS 360.”

“Time-there are several times during the year where assessments take up the majority of my day and I do not get to work with teachers as often as I would like to.”

“We often had no subs which required the leadership team to take over. This was difficult at times when you already had coaching planned and had to reschedule for another time. Teachers were frustrated.”

“The amount of prep that was required for district and state testing.”

“The amount of time spent coordinating assessments.”

“Due to the lack of substitutes, we are asked to be ‘substitutes’ being asked to cancel appointments, such as observations, modeling, team teaching, collaboration.”

“When there were teacher vacancies or a shortage of substitutes.”

“The biggest obstacle this year has been the lack of substitutes in the district. It especially [sic] is bad when there is a district training and we are expected to cover teachers within. I know its necessary to provide training within the day to teachers, but I feel as coaches/counselors/acadmeic [sic] interventionists/title I facilitators [sic] our roles need to be respected and subs need to be provided

rather than expected us to pick up that slack. I totally understand having to fill this void periodically but this year I really feel we have been “abused” and expected to do this far too much!”

“[T]oo much testing.”

“Because of the many required testing that was given throughout the year I was unable to go into classrooms on a regular basis. Also because there were so many new challenges in the one to one classrooms I didn’t get the opportunity to work with K-3 as much as I would have liked to.”

“Lack of time allowing me to get into classrooms more than I wanted to. Number of jobs that would be added on daily or weekly that I had difficulty saying no to when I had the option.”

“TESTING. We have many tests that are piled up upon each other. During October and May the district piles too many tests in a very short time period. It becomes unreasonable for teachers and teaching comes to a complete stop which is sad for our students.”

Suggestions for implementing video. One of the main motivations for conducting this study was that the school district has plans to require all teachers be video recorded during observations. As such, several coaches and both teachers made comments regarding future use of video-based evidence in the school district. In general, they commented that using video-based evidence needs to be a normal part of the routine at each school in order to overcome teachers’ apprehensiveness, and to reduce the novelty effect using video has on teachers and students. Some of their comments included:

“I do see there are lots of ways we can use video once it becomes more of the normal part of instruction, and teachers see that it’s used effectively. I don’t think it’s going to happen overnight. I think it’s going to take some time.”

“I was in [one particular teacher’s] classroom recording so often that I didn’t have any problems...at first the kids were waving at the camera, and it was distracting, but then it just became normal, and they just ignored me.”

“In spring, we took a tour of a school back east where video recording is very ubiquitous within the school; it’s part of their normal routine. It was really interesting to see the teachers’ reactions to it. We talked to some of the teachers about how they felt, and because it was an engrained routine element of daily practice, there was no apprehension about it.”

“I guess I would just stick to my teaching style, and there was not a whole lot of difference with or without a camera there, and I think because I got used to being observed so many times, and consistently, it didn’t make a difference.”

Coaches also commented that to be effective, teachers need to understand what happens with the video recordings once they have been recorded. More specifically, if teachers do not know who will control the recordings, or who will see the recordings, it can have a negative impact on the effectiveness of using the recordings for reflection.

They commented:

“[T]eachers [need] to know that [the video] stays where it stays and it’s used purely for coaching, and we’re not going to play it for other people, and that it’s really just between me and you to look at instruction, and the video camera is just a normal part of the classroom.”

“I think the single biggest issue is the level of stress and the time constraints that are put on teachers. We’re asking so much of them right now...we’re asking them to do so many different things and to make so many radical changes in such a short period of time that there’s no stable ground to stand on. Everything is moving and changing and there’s no place for teachers to feel comfortable. There’s a lot of unknowns and question marks out there, which causes a lot of stress for people. They want to know what the data will be used for and the purpose of it. They want definitive answers when, unfortunately, for a lot of things, we don’t have definitive answers.”

“In spring, we took a tour of a school back east where video recording is very ubiquitous within the school.... None of the teachers we talked to expressed any kind of concerns about it.... I think it was mainly driven by the fact that about 90% of the usage of the video and those cameras was by peers observing each other. There were no administrative people involved in it. It wasn’t being used as a way of evaluating teachers. It wasn’t really being used to document things for a teacher’s employment record, or human resources issues, or issues with parents. It was really being used collegially between peers; with teachers saying,

“How do you introduce this concept?” or “How do you manage your small group instruction?” “OK. Let me show you a tape that I have of me doing this lesson.” And it becomes something that everybody views as being helpful to their practice and making their lives easier and not more stressful or hard.”

Coaches also commented on several other aspects of implementing video within the district. For example, one coach commented that the routine needs to be established early:

“[I]f it’s something that’s established early...I think it’s more realistic to expect that people will not be able to hide from it being incorporated into their routine.”

Another coach commented that additional training would help the coaches be more effective at recording and using video-based evidence with teachers, especially using the DataCapture mobile application:

“I think [training] would have helped us be more comfortable with [the application], figuring it out beforehand instead of certain glitches happening during our coaching sessions when we’re in there with the kids and the teacher.”

One coach also commented that the district needs to make both using video and instructional coaching a priority on par with other priorities in the district, such as standardized testing:

“The message we get regarding deadlines for [other] duties is not the same message we get regarding our coaching duties...[With other duties,] there’s deadlines and there’s a sense of urgency and needing to make sure there’s no questions or monitoring our progress, [but with coaching] it’s not the same messaging of urgency and follow-up, and that urgency helps us determine what needs to get done.”

Summary

Based on their comments, the majority of instructional coaches feel that responsibilities such as coordinating and administering assessments, substitute teaching, and managing technology resources take away from their ability to observe and provide

feedback to teachers. When they are able to observe and meet with teachers, the reflection conversations are often postponed or cut short due to time conflicts in the teachers schedules. In the few opportunities that coaches had to record video during observations, they typically used the iPad as a camera, but did not use it to take notes or fill out the observation forms during the observations. They typically had the iPad in one location during the observation, but occasionally walked around when the situation warranted it, and disruption of the lesson was minimal. After recording, they felt that it took additional time to edit, annotate, and comment on the video recordings so that the teachers could watch them on their own, but that this was more effective than watching the video with the teachers during the reflection conversations.

In addition, the coaches felt that much of their ability to use video with teachers was correlated to the decisions of the building principal. This is mainly due to the fact that the building principal determines their priorities for each day, which determines how much time they will have available for observing and recording, editing and commenting, and then meeting with teachers to reflect on the video-based evidence.

Chapter 5

DISCUSSION

Most teacher observations performed nowadays are done for evaluative purposes, often times to determine if teachers are performing adequately on the job (Weisberg *et al.*, 2009). Instructional coaches, however, observe teachers with the intent of helping them improve their practice (Knight, 2007). Thus, observations done as part of instructional coaching have a different nature than observations done for evaluative purposes (Knight, 2007; Simkins *et al.*, 2006).

Video recordings have been used as part of teacher observations since the mid-1960s (Fuller & Manning, 1973). Video playback provides several benefits to teacher reflection (Athanases, 1993; Calandra *et al.*, 2006; Cuper *et al.*, 2007; Dawson *et al.*, 2001; Deasy *et al.*, 1991; Halter, 2006; Scida & Firdyiwiek, 2013; Tripp, 2009; Wedman *et al.*, 1999). Because the main purpose of instructional coaching is to promote reflection on teacher practice (Knight, 2007; Rodgers & Rodgers, 2007; Shanklin, 2006; Toll, 2005), determining how video can be used effectively in instructional coaching is important.

Many educational settings are investing in mobile technology for their staff and students. As such, several applications have been developed for mobile devices to facilitate teacher evaluation and observation. However, while most mobile devices include video recording technology, no applications designed for teacher observation incorporate video recording ability. Thus, the DataCapture mobile application is unique in the way it combines standardized teaching observation forms and video recording capability in the same application.

Study Overview

This study examined the use of the DataCapture mobile application and the use of video-based evidence in an instructional coaching context in a large school district in the Southwestern United States. Instructional coaches were recruited to record video using the DataCapture mobile application as part of their normal coaching duties during a two-month study period. At the end of the study period, participants were interviewed about their experience and their attitudes toward video-based evidence and the DataCapture mobile application.

Six instructional coaches and two teachers participated in the interviews. Their comments, as well as data from the DataCapture mobile application and data from a survey of Title I personnel conducted by the school district were analyzed to answer the following research questions:

1. What are instructional coaches' and teachers' attitudes toward the use of video-based evidence in teacher observations in an instructional coaching context?
2. What are instructional coaches' attitudes toward the use of the DataCapture mobile application in an instructional coaching context?
3. How is video-based evidence used in teacher observations in an instructional coaching context?
4. How do issues such as logistics, time requirements, or administrative support impact the use of video-based evidence and the DataCapture mobile application in an instructional coaching setting as perceived by coaches and teachers?

The use of both qualitative and quantitative sources allowed for complimentary analysis (Creswell, 2007).

Findings

This section provides a summary of the key findings from the data sources described in Chapter 4, and discusses these results in the context of previous studies. The key findings are presented as they relate to the research questions from this study.

Research Question #1

This first research question attempted to determine how instructional coaches and teachers felt about using video-based evidence during teacher observations. Past studies have shown that most teachers felt that video-based evidence was effective at helping them reflect, yet many teachers are still reluctant to be video taped. Data from the interviews was analyzed to answer this question. The results show that most instructional coaches and teachers interviewed felt that video was effective at helping teachers see aspects of their teaching they may not notice by simply reflecting about their teaching without video. They felt that using video provided objectivity to the observation process, helping teachers accept their mistakes more readily and being more open to change, thus improving their reflection (Adams *et al.*, 2006; Collier, 1999; Hatton & Smith, 1995). The teachers who were interviewed also felt that video was effective at helping them improve their teaching, although one teacher declined to being video recorded during the study period.

Comments from both the coaches and teachers, however, indicated that this general belief in the effectiveness of video for reflection was not held by many teachers in the district. Coaches had trouble getting teachers to volunteer to be recorded, and

the teachers indicated that many of their colleagues were apprehensive, to say the least, when mentions of using video for reflection were made during a staff meeting. As many of the coaches, and both of the teachers, who were interviewed had all experienced viewing video for the purpose of reflecting on their teaching, this suggests that those who have used video for reflection realize its effectiveness, but those who have not typically feel apprehensive. This is in accordance with other studies, where participants felt apprehensive about being recorded prior to the experience, but felt being recorded was valuable once they got over their initial fears (Leat, 2005; McNeill, 1998; Shallcross, Lancaster & Robinson, 2006). These fears can stem from a number of issues, such as stress or anxiety at seeing oneself, which may make some teachers feel threatened (Fuller & Manning, 1973). In addition, many teachers are concerned about who will see the recordings, and may feel that they cannot control access to the recordings (Shallcross *et al.*, 2006).

Research Question #2

The second research question sought to determine coaches' attitudes about using the DataCapture mobile application to facilitate instructional coaching. Two factors influenced coaches' comments about the DataCapture mobile application. First, the coaches had many additional responsibilities besides instructional coaching, which prevented them from getting into classrooms to use the application during observations. This is evidenced in the smaller number of coaching records submitted using the application in March and May. Second, the application was in its beta development stage. This meant there were bugs and other issues to be worked out, which resulted in technical glitches toward the beginning of the school year. Although the bugs were corrected in

updates pushed out later in the school year, the coaches did not have time to use the application after the updates because of their many other responsibilities that prevented them from getting into the classrooms as much as in previous months.

Given the two factors mentioned above, most of the coaches' comments focused on technical problems they had while using the DataCapture mobile application. These included problems saving data, and then retrieving that data later during reflection conversations with teachers. However, several coaches did comment on aspects of the application they wished were added. For example, one coach commented that she wanted a way to send video clips to teachers to watch via the DataCapture mobile application. Other coaches commented that they wanted to be able to save data under a teacher's name for easy retrieval later on. Despite the technical problems, the coaches felt that the application was beneficial as long as the data could be shared with teachers.

Research Question #3

The third research question examined how instructional coaches use video with teachers to encourage reflection. Past studies have used a variety of methodologies and reflective tasks to help teachers use video to reflect on their own teaching, including conferences. In this instructional coaching context, the most common method for reflecting with teachers is a reflection conversation. However, due to time constraints for both coaches and teachers, these conferences are often cut short or postponed. Other studies have shown that viewing video with mentors can be an effective method of reflection (Brawdy & Byra, 1994; Cuper *et al.*, 2007; Kpanja, 2001; Rich & Hannafin, 2008; Tripp, 2009). Thus, the data show that when time is an issue, it may be more effective to have the teacher watch the video clips on their own, and then come prepared

to reflect with the coach in the reflection conversation (Baecher, 2011). The data also show that coaches have edited video clips and used annotations and comments, along with scripted notes of the observation, to help teachers focus in on specific aspects of their teaching that can be seen in the video evidence. This is similar to other studies on the use of video for reflection (Brawdy & Byra, 1994; Cuper *et al.*, 2007; Shepherd & Hannafin, 2009).

Research Question #4

The fourth research question focused on issues that can impact the use of video with teachers, especially in an instructional coaching context. Originally, the researcher felt that based on the literature review, logistics, time requirements, and administrative support might be issues that would come up during the study. Data from the interviews and the school district survey were analyzed to answer this question.

Logistics. A relatively small number of coaches were able to record video during the study period. They discovered that using the iPad to record video had advantages and disadvantages. One advantage was that once the video was recorded, it could automatically be uploaded or shared because the iPad had network capabilities. Another advantage was that the iPad was less conspicuous than setting up a tripod and video camera might have been. However, there were some issues with memory limitations on the iPad that limited the length of the video clips that were recorded. In addition, without additional accessories, such as a stand that allowed the iPad to stay vertical without being held, using the iPad to record was awkward because of how the coaches had to hold it.

In addition to the technology, coaches commented on the importance of minimizing the camera's impact on students' behavior and avoiding disruption of the flow

of the classroom. Although they reported that most students ignored the camera once they got used to it, recording video in an unobtrusive way seems to be the most effective way to capture the reality of what happens in the classroom.

Time requirements. All the coaches commented that time was a major issue in instructional coaching, and that including video only increased the time-related stress they felt. With specific regard to video, the coaches felt that although extra time was required to edit, annotate, and comment on the video recorded during observations (Cunningham & Benedetto, 2002; Krammer *et al.*, 2006), it was more effective than watching the video during conferences with teachers given the time limitations of both teachers and coaches busy schedules.

Administrative support. It was expected that schools with more administrative support for using video evidence would see better use of video evidence in instructional coaching. This is mainly due to the fact that additional time and technology are required to record, edit, and view videos with teachers. Data from the interviews indicate that much of the administrative support they received depended on the attitudes of the building principals. This is in-line with other studies that show building principals play an integral role in teacher development (Honig & Rainey, 2012; Marzano & Waters, 2009).

Other issues. In addition to logistics, time requirements, and administrative support, data from the interviews and the school district survey indicate that instructional coaches' non-coaching responsibilities significantly reduced the time they had available to spend on instructional coaching. These duties included such things as coordinating and administering standardized tests, substituting for teachers who were absent, being on duty at lunch, recess, and before or after school, and serving on the school leadership team.

Coaches also made several comments about how the use of video could be successfully implemented in their district. The bulk of the comments suggested that video needed to be a part of the culture of the school, which would help alleviate some of the fears teachers had regarding being recorded. Additionally, coaches suggested that clear policies regarding access to the recorded video clips and additional training would help make the process more successful. This is similar to suggestions made by Leat (2005), who suggested that ownership of recorded video clips is an important issue. Shallcross *et al.* (2006) suggested that legal, ethical, and technological issues should be worked out before attempting to implement a successful video recording program.

Limitations of the Study

There were some limitations to the design and results of this study. First, this study was conducted in the school district during the last two months of the school year, when most of the state-required and district-required standardized assessments take place. This proved to be a particularly busy time for instructional coaches, who also have many other responsibilities for coordinating and administering assessments. Thus, while several coaches expressed an interest in recording video during the study period, only two coaches were actually able to do so. Thus, the comments coaches made during the interviews and in the school district survey data reflect this limitation.

Another limitation was the fact that both the coaches and teachers voluntarily participated in this study. As is evidenced in the coaches' comments regarding teachers' attitude toward video, many teachers simply would not volunteer to be recorded. Thus, those that participated in the interviews and the ones who volunteered to be recorded may have a pre-disposition that video is effective, and may not represent the attitudes of the

majority of teachers in the district. Similarly, the coaches who volunteered may not be a representative sample of the coaches in the district regarding their attitudes toward the use of video, and how they used video with teachers.

Recommendations

It is apparent that effective use of video evidence can greatly improve an instructional coaching program (Athaneses, 1993; Cuper *et al.*, 2007; Dawson *et al.*, 2001; Tripp, 2009; Scida & Firdyiwiek, 2013), which in turn leads to more effective teachers and greater student achievement (Aaronson *et al.*, 2007; Slater *et al.*, 2012). This section will discuss some recommendations for successfully implementing the use of video for teacher reflection in an instructional coaching context based on the evidence from this study. These recommendations are summarized in Table 22 and explained in detail below.

Table 22

Suggestions for Implementing the Use of Video Data in Teacher Reflection

#	Description
1	Make the use of video a part of the organizational culture by convincing teachers of the value and benefit of using video data
2	Establish clear policies regarding the ethical use of video data
3	Ensure proper on-going training in both the technology and techniques required to use video data effectively
4	Provide technology solutions that are unobtrusive and allow easy viewing, sharing, editing and annotating of video data for both coaches and teachers

Video as Part of Organizational Culture

As several of the instructional coaches suggested, in order for video to be effective in encouraging teacher reflection, it needs to be part of the organizational culture of the school or district. Teachers have to willingly participate in the process. If the idea of being recorded causes stress or anxiety, teachers will not be able to effectively view themselves and concentrate on their teaching practice. When the use of video becomes common and a part of the established routine, teachers will be more willing to be recorded and use the recordings to reflect on their teaching.

Establishing this video culture is not an easy task. As Hollingsworth (2005) stated, “Perhaps the most pertinent challenge associated with the use of video data...relates to developing a culture among teachers and teacher educators that values and embraces the collection and use of video data” (p. 151). In his paper titled “Leading Change: Why Transformation Efforts Fail,” John Kotter (1995) points out several common errors leaders make when trying to initiate organizational change. One of those common errors is “not anchoring changes in the [organization’s] culture” (p. 67). He suggests that one factor essential to integrating new techniques into an organization is to demonstrate how these changes lead to improved performance. There are many ways that school leaders can show teachers the power of video reflection. One coach suggested encouraging teachers to record and view video on their own, where they have complete control over the use of the recorded footage, as a way to get teachers used to the idea of being recorded and overcoming some of the fear of self-confrontation (Fuller & Manning, 1973). Another suggestion found in the literature is to establish video clubs (Sherin & Han, 2004; van Es, 2010) or professional learning communities (Mourlam, 2013), where

teachers record their own classes, and then meet on a regular basis to view selected clips and discuss their practice. Activities like these can help teachers embrace the use of video in their own reflection, and open them up to being recorded in connection with instructional coaching. Once teachers see the power of video in changing their own practice, their attitudes will change (Hatfield & Bitter, 1996) and recording video in the classroom will become “the way we do things around here” (Kotter, 1995 p. 67).

Establish a sense of urgency. In connection with establishing an organizational culture that “values and embraces the collection and use of video data” (Hollingsworth, 2005, p. 151), it is important to communicate with all participants the importance of using video and its relation to the goals of the organization and of the individuals involved. John Kotter (1995) calls this “establishing a sense of urgency” (p. 61), and states that not establishing this urgency, or not establishing it to the level required for change, is the first mistake many organizational leaders make. One of the coaches commented on this during the interviews, when she said:

“The message we get regarding deadlines for [other] duties is not the same message we get regarding our coaching duties... [With other duties,] there’s deadlines and there’s a sense of urgency and needing to make sure there’s no questions or monitoring our progress, [but with coaching] it’s not the same messaging of urgency and follow-up, and that urgency helps us determine what needs to get done.”

If the school or district administration values the use of video data in improving teacher performance, they need to communicate the urgency of collecting and using video data with the instructional coaches and teachers, and give it priority. Kotter (1995) suggests that for change to take place, about 75% of the participants involved have to be “honestly convinced that business as usual is totally unacceptable” (p. 62).

Clear Policies Regarding Video Data

Another important recommendation is to establish clear policies regarding the use of video data. As indicated by the coaches and teachers during the interviews, many teachers are reluctant to be recorded because they are unsure of who will view the recordings and what decisions will be made based on the evidence in those video clips. One coach commented:

“They want to know what the data will be used for and the purpose of it.”

To effectively reflect on their teaching and thus improve their practice, teachers need the freedom to view their own teaching without worrying about reprimand or reaction from the administration regarding their performance as seen in the videos (Lord *et al.*, 2008). Thus, establishing clear policies about video recorded as part of instructional coaching is necessary to put teachers at ease and allow them to make the changes needed to improve their practice. One coach commented during the interviews that she had a relationship built on trust with the teachers she worked with, and that:

“[the videos don’t] go to admin. I’m not [their] evaluator....”

Ethics. In addition to policies regarding access to video footage by administrators or evaluators, there are ethical considerations when recording video in the classroom. Because students may appear on the video, having clear policies about informing the students, and the parents if the students are minors, is essential. Some schools or districts have a blanket “media policy” that parents and students sign, which informs them of the use of video evidence and how that data will be stored, accessed, and used within the school or district context (Mourlam, 2013).

Another ethical consideration is security. Unauthorized access to the video data can damage its effectiveness because participants will be less willing to be recorded when they are unsure of who is accessing the data. Establishing a secure storage method, or utilizing established secure methods is essential to controlling access. One coach mentioned during the interview that he used YouTube's privacy settings to restrict access to video recorded in the classroom. These privacy settings prevented unwanted viewers from accessing the video, while still allowing the instructional coach to share the recorded video with other authorized users via a web link. Another secure method is establishing a media server as with the DataCapture mobile application. This application utilizes a secure server, thus preventing unwanted viewers from seeing the video data, while allowing authorized users to access the data as needed. Establishing levels of security on such a server may allow the creation of video "categories" where instructional coaches could upload video to be used for coaching purposes only. Such data would then be blocked from administrators and others not involved with the coaching process.

Training

In addition to establishing a culture that values the use of video and setting clear policies regarding the use of video data, it is important to make sure that instructional coaches and teachers are trained how to record, edit, annotate, and view video data for the purpose of reflection. This involves both training in technology and training in coaching techniques regarding reflection.

Technology. The instructional coaches in this study utilized the DataCapture mobile application to record video evidence. The mobile application was in use for approximately seven months prior to the study period. Given that the mobile application

was still in beta testing, there were bound to be some technical glitches regarding the use of the application. However, aside from those technical glitches, several coaches mentioned a lack of training as being one barrier to using the application effectively.

They weren't prepared for the glitches that did occur. As one coach stated:

“I think [training] would have helped us be more comfortable with [the application], figuring it out beforehand instead of certain glitches happening during our coaching sessions when we're in there with the kids and the teacher.”

No matter what technology is used to record, edit, annotate, and share the video data, training is an important factor in its effectiveness. Training will not only ensure that more quality data is collected, but also that time is not wasted in trying to figure out how to edit, annotate, and share video clips. This training should not be limited to a one-time workshop, but should include ongoing technical training and support (Carlson, 2002).

Technique. In addition to training on the technology required to record, edit, annotate, and share video data, coaches and teachers should be trained how to effectively incorporate video data into the instructional coaching process. Simply having a teacher view video clips of their classes may not be enough to help that teacher reflect at a level required for significant change in their teaching practice. Coaches need to learn how to select appropriate evidence from the video footage and focus the teachers' self-reflection on a specific aspect of their teaching practice (Killion & Todnem, 1991; Reagan, 1993). In addition, video data in combination with effective reflective questioning can encourage teachers to make decisions that impact their teaching practice at the transformative level (Ward & McCotter, 2004). As with technology training, this training cannot be limited to an occasional workshop or training session. Ideally, coaches should be provided ongoing

training, including the pairing of less experienced coaches with mentor coaches who can guide them in reflecting with teachers. As one coach stated:

“A lot of the other projects didn’t require a mentor, but I think coaching does.... [P]eople who could go into the classroom together and demonstrate using the app, and monitor the coaches progress in completing observations. With coaching there are a lot of people in the district who’ve had years of experience and there are a lot of us who have not.”

Technology

As was mentioned in Chapter 2, the technology used to record, edit, annotate, and share video data greatly impacts the effectiveness of the video data in encouraging teacher reflection. While there are many different options available, each with unique advantages and disadvantages, whatever technology is chosen should include these important characteristics:

- the video recording process should be unobtrusive and impact the classroom as little as possible
- the video data should be easily accessible to both teachers and coaches after the observation
- it should be easy to edit and annotate clips
- it should be easy to share clips and other attached data with multiple users

In many situations, as with the school district involved in this study, the instructional coaches utilize multiple technologies to accomplish these four purposes. For example, one coach used the iPad to record the video evidence, and then uploaded the video clips to YouTube, which allowed him to edit, annotate, and share the clips with the teachers he observed. He was also able to attach his observation notes by using Google Docs in combination with a web link to the YouTube videos. Ideally, having all four of

these important features in one technology solution allows coaches and teachers to use a common platform and reduces the amount of technology training required. In addition, having all these features on a single application, managed at the school or district site, minimizes problems with using outside solutions. For example, one coach attempted to upload video to YouTube to share with teachers, but had problems accessing the YouTube site due to network permissions problems. Having the sharing capabilities on an internal network, tied into a mobile application like DataCapture, reduces or eliminates these problems.

Future Research

The findings described above suggest that although both the coaches and teachers interviewed felt video evidence was effective at promoting self-reflection among teachers, video evidence is rarely used in instructional coaching in this particular school district. This study provided initial evidence of how instructional coaches use video evidence with teachers and discussed several issues that impact the use of video evidence in an instructional coaching context. Based on this experience, and the limitations of this study, there are several recommendations for future research.

The results of this study were overshadowed by several factors within the school district where the study took place. These factors greatly inhibited the ability of the researcher to collect more meaningful data to answer the research questions. Thus, others attempting to do similar research should consider several important aspects when deciding where and when to conduct their studies. These suggestions are summarized in Table 23 and described below.

Table 23

Suggestions for Conducting Research on the Use of Video Data in Teacher Reflection

#	Description
1	Ensure that video data is a part of the culture in the intended research setting to control for teachers' apprehensiveness about being recorded
2	Discuss the research questions and study procedures with a representative sample of all stake holders in the intended research setting
3	Ensure that the intended research setting has all required technology to record, edit, annotate, and share video data for the purpose of teacher reflection
4	Determine the usage rate of the required technology in the intended research setting
5	Pilot any data collection instruments prior to using them in the intended research design

Tripp and Rich (2012) commented that in much of the literature looking at the use of video in teacher self-reflection, there was great variety in the following dimensions: (1) the reflection tasks, (2) the frameworks that guided reflection, (3) whether the reflection was done alone or in collaboration with others, (4) the length of the video recordings used, (5) the number of times teachers reflected on their videos, and (6) how the effectiveness of the reflection was measured. The recommendations in Table 23 are meant more for researchers attempting to examine these aspects of using video-based evidence in teacher reflection. Researchers doing more investigative studies looking at new implementations of the use of video data in a particular educational setting may not need to consider all these suggestions when designing their research studies.

The first recommendation is to ensure that the collection and use of video data is a normal part of the organizational culture in the intended research setting. The results of this study were heavily influenced by the fact that most teachers were apprehensive about being recorded and would not volunteer for the study. In order to control or account for teachers' fear of being recorded, conducting the research in a setting where teachers are accustomed to being recorded and viewing those recordings of themselves is advisable.

Secondly, it is important to discuss the research questions and study procedures with all stake holders involved. The results of this study indicated that the use of video-based evidence at a particular site depended heavily on the attitude of the building principal. Thus, including the principals as participants in this study would have yielded more complete answers to that particular research question. Additionally, it was discovered after looking at the data from the DataCapture mobile application that while instructional coaches submitted dozens of coaching reports via the application each month, they submitted very few videos or still images attached to those reports. Holding discussions with the instructional coaches and principals would have helped eliminate or reduce these complications in the present study. Future researchers should determine who the stakeholders involved in their research are, and discuss the research questions and study procedures with them to determine if such issues exist and how they may impact the results of future studies.

Thirdly, future researchers should determine if the necessary technology is available in the intended research setting. The school district where this study took place provided iPads and access to the DataCapture mobile application to the instructional coaches prior to this study. However, it was discovered that some coaches could not

participate because the district-provided iPad was being used by another administrator at the school site. Thus, future researchers should ensure that the technology needed to collect and use video data effectively is available before attempting to do research in a particular educational setting.

Fourth, future researchers should determine the usage rate of any required technology already existing in the intended research setting. In this study, determining the number of videos submitted via the DataCapture mobile application prior to the study period may have suggested that video was not frequently used, thus leading to additional research questions and possibly influencing the design of the study. Determining the usage rate of any necessary technology will help future researchers avoid similar problems when attempting to answer questions about how video-based evidence can be used effectively in teacher self-reflection.

Finally, as in most other research settings, it is important to pilot any data collection instruments prior to collecting data. For example, prior to interviewing the coaches and teachers in this study, the researcher asked others to review the interview questions to help avoid leading questions (Patton, 2002; Schofield, 1995). Piloting data collection instruments helps ensure the instruments are not biased and will not skew the results of any data collected. In addition, piloting the study procedures may help alleviate any misunderstandings or complications that arise due to unexpected circumstances.

Aside from these five recommendations, there are several other recommendations for researchers attempting to conduct studies similar to this one. First, future studies should involve larger numbers of participants that includes instructional coaches, teachers, and administrators. If possible, by including a majority of instructional coaches

and teachers within a district, researchers can get a clearer picture of the methods instructional coaches use when recording, editing, annotating and sharing video data within a particular educational setting, and how they use the video data for encouraging teacher reflection. This would allow researchers conducting similar studies to confirm, negate, or elaborate on the findings of this study. Similarly, the results of this study suggest that building principals heavily influence the use of video-based evidence at their schools. Including building principals as participants in future studies will help determine the impact principals have on how video-based evidence is used in a particular educational setting.

In addition, further studies should be conducted utilizing the DataCapture mobile application. Most of the feedback from this study involved technical difficulties and other issues with using the application. However, because so few participants were able to use the application during the study period, additional research is needed to determine the impact using a mobile application to record, edit, and share video data has on the process and effectiveness of instructional coaching. Updating and modifying the application to include one or more of the features discussed above, such as the ability to access video clips after submitting an observation form, or being able to share video clips within the application or via a web-based interface, would allow researchers to determine how these features affect the use of video data with teachers.

Another area where further research is needed is examining the impact administrative policies and procedures have on the use of video data for reflection. The school district where this study took place plans to require all teachers be video recorded during observations. Examining the impact such a policy has on teachers' and

instructional coaches' attitudes toward the use of video data, as well as how the policy is implemented and the impact it has on teacher effectiveness and student achievement would provide valuable data to others who might attempt to establish similar policies in their educational settings.

Measuring the Effectiveness of Reflection with Video Data

Another direction for future research is to explore the impact using video data has on the effectiveness of reflection in an instructional coaching context. Several different frameworks have been developed to attempt to measure the effectiveness of reflection, but there is little research on how the use of video data impacts teacher reflection within instructional coaching.

One study attempted to develop a framework for measuring reflection in pre-service teachers (Sparks-Langer, Simmons, Pasch, Colton, & Starko, 1990). In the study, the authors outlined seven levels of evidence of reflective thinking that focused on the language used in reflection and the way the pre-service teachers described or labeled the events during reflection. This framework is called the Framework for Reflective Thinking, and is given in Table 24. This framework is useful in situations where the reflection task is written, or the interaction between a mentor and the teacher is recorded in some way for later analysis. For example, if the reflection conversations were recorded or transcribed, this framework could be used to determine the effectiveness of the reflection during those sessions.

Another study attempted to create a quantitative instrument that could be used to measure teachers' reflective ability (Larrivee, 2008). In this study, the author defines four levels of reflection, given in Table 25. These levels of reflection are similar in some

Table 24

Framework for Reflective Thinking

Level	Description
1	No descriptive language
2	Simple, layperson description
3	Events labeled with appropriate terms
4	Explanation with tradition or personal preference given as the rationale
5	Explanation with principle or theory given as the rationale
6	Explanation with principle/theory and consideration of context factors
7	Explanation with consideration of ethical, moral, political issues

Note: from Sparks-Langer *et al.* (1990)

ways to those described by Ward and McCotter (2004) and given in Table 1. Based on these four levels of reflection, the author developed an instrument that contains several descriptors of reflective practice at each level. By rating teachers at varying times throughout the school year, and correlating this development with the use of video data, researchers may be able to explore how the use of video data impacts teachers' development as reflective practitioners.

Conclusion

As teachers continue to develop their own practice, and research continues to identify ways in which teachers can help students learn and achieve more, professional development will continue to be an essential part of any educational setting. Instructional

Table 25

Levels of Reflective Practice

Level	Description
Pre-reflection	<ul style="list-style-type: none"> • The teacher interprets classroom situations without thoughtful connection to other events or circumstances. • The teacher's orientation is reactive, believing that situational contingencies are beyond the teacher's control. • Beliefs and positions about teaching practices are generalized and not supported with evidence from experience, theory, or research. • The teacher's perspective is undifferentiated and general regarding the needs of learners.
Surface reflection	<ul style="list-style-type: none"> • The teacher's examination of teaching methods is confined to tactical issues concerning how best to achieve predefined objectives and standards. • Beliefs and positions about teaching practices are supported with evidence from experience, not theory or research. • The teacher's view of learners is somewhat differentiated, acknowledging the need to accommodate learner differences.
Pedagogical reflection	<ul style="list-style-type: none"> • The teacher is constantly thinking about how teaching practices are affecting students' learning and how to enhance learning experiences. • The teacher's goal is continuously improving practice and reaching all students. • Reflection is guided by a pedagogical conceptual framework. • Beliefs and positions about teaching are specific and supported by evidence from experience, as well as being grounded in theory or research. • The teacher's view of teaching and learning is multidimensional
Critical reflection	<ul style="list-style-type: none"> • The teacher is engaged in ongoing reflection and critical inquiry concerning teaching actions as well as thinking processes. • The teacher holds up both philosophical ideologies and teaching practices for continuous examination and verification. • The teacher consciously considers how personal beliefs and values, assumptions, family imprinting, and cultural conditioning may impact on students. • The teacher is concerned with promoting democratic ideals and weighs the ethical and social implications of classroom practices.

Note: from Larrivee (2008), page 348

coaching brings professional development to the site-level, and provides ongoing opportunities for teachers to reflect and develop their teaching. Research has shown that video can play a beneficial role in helping teachers reflect and improve their performance (Cuper *et al.*, 2007; Dawson *et al.*, 2001; Deasy *et al.*, 1991; Halter, 2006; Tripp, 2009; Wedman *et al.*, 1999). Results from this study can inform school and district leaders as they endeavor to establish a culture that values the use of video data for reflection, specifically in an instructional coaching context.

The results from this study have shown that instructional coaches generally believe that video is an effective part of the reflection process, but that many teachers are apprehensive about being recorded. In line with other studies, the evidence from this study shows that once teachers overcome their anxiety over seeing themselves on video, they also feel that video is effective at helping them reflect on their teaching (Collins *et al.*, 2004; Dawson *et al.*, 2001; Deasy *et al.*, 1991; Griswold, 2004; Miyata, 2002; Rosaen, Lundeberg, Cooper, Fritzen & Terpstra, 2008). Thus, helping teachers overcome this fear by establishing professional learning communities (Mourlam, 2013) that record and use video data to discuss teaching practice can be an important step in the process of establishing a culture that values the use of video data.

Results from this study also show that for video to be effective, instructional coaches need to focus their use of video data by editing and sharing clip with teachers. Thus, the technology used must support these important features. Combining these features into a mobile application is perhaps the most logical and economical choice because it keeps coaches and teachers from having to carry around and learn how to use multiple devices. School and district leaders can impact teacher effectiveness and student

achievement by encouraging and supporting the collection and use of video data, and by ensuring teachers have access to the technology and time they need to do so.

REFERENCES

- Aaronson, D., Barrow, L., & Sander, W. (2007). Teachers and student achievement in the Chicago public high schools. *Journal of Labor Economics, 25*(1), 95-135.
- Adams, C. L., Nestel, D., & Wolf, P. (2006). Reflection: A critical proficiency essential to the effective development of a high competence in communication. *Journal of Veterinary Medical Education, 33*(1), 58-64.
- Andrews, T. (1971). *New directions in certification*. Washington, D.C.: Association of Teacher Educators.
- Athanases, S. Z. (1993). Adapting and tailoring lessons: Fostering teacher reflection to meet varied student needs. *Teacher Education Quarterly, 20*, 71-81.
- Ayer, F. C. & Barr, A. S. (1928). *The organization of supervision*. New York: Appleton and Company, Inc.
- Baecher, L. (2011). Video-based self-observation in clinical supervision. In M. Koehler & P. Mishra (Eds.), *Proceedings of Society for Information Technology & Teacher Education International Conference 2011* (pp. 1761-1770). Chesapeake, VA: AACE.
- Barr, A. S. & Burton, W. H. (1938). *Supervision*. New York: Appleton-Century Company, Inc.
- Beardsley, L., Cogan-Drew, D., & Olivero, F. (2007). Videopaper: Bridging research and practice for pre-service and experienced teachers. In R. Goldman, R. Pea, B. Barron, & S. Derry (Eds.), *Video research in the learning sciences* (pp. 479-493). Mahwah, NJ: Lawrence Erlbaum.
- Bellack, A. A. (1966). *The language of the classroom*. New York: Teachers College Press.
- Bennett, J.L. & Martin, D.J. (2001) The next professional wave: Consultant/coach. *Consulting to Management, 2*(3), 6–8.
- Borg, W. R. & Gall, M. D. (1971). *Educational research: An introduction*. New York: David McKay Company, Inc.
- Branson, C. M. (2009). *Leadership for an age of wisdom*. Netherlands: Springer.
- Brawdy, P. & Byra, M. (1994). *A comparison of two supervisory models in a preservice teaching practicum*. Paper presented at the annual meeting of the American Educational Research Association, New Orleans, LA.

- Brookfield, S. D. (1987). *Developing critical thinkers: Challenging adults to explore alternative ways of thinking and acting*. San Francisco: Jossey-Bass.
- Bryan, L. A. & Recesso, A. (2006). Promoting reflection with a web-based video analysis tool. *Journal of Computing in Teacher Education*, 23(1), 31-39.
- Butts, D. & Trott, A. (1986). Evolution of methods of teacher training through video: The British experience. *Educational Media International*, 23(4), 163-166.
- Byra, M. (1996). Postlesson conferencing strategies and preservice teachers' reflective practices. *Journal of Teaching in Physical Education*, 16, 48-65.
- Calandra, B., Brantley-Dias, L. & Dias, M. (2006). Using digital video for professional development in urban schools: A preservice teacher's experience with reflection. *Journal of Computing in Teacher Education*, 22(4), 137-145.
- Callan, S. (2006). What is mentoring? In Robins, A. (Ed.), *Mentoring in the early years* (pp. 5-16). London: Paul Chapman.
- Carlson, S. (2002). The missing link in educational technology: Trained teachers. *TechKnowLogia*, October/December 2002, 7-11. Retrieved from http://www.techknowlogia.com/TKL_Articles/PDF/435.pdf.
- Carroll, J. G. (1981). Faculty self-evaluation. In J. Millman (Ed.), *Handbook of teacher evaluation* (pp.180-200). Beverly Hills, CA: Sage.
- Centre for the Use of Research and Evidence in Education. (n.d.). Mentoring & coaching: Consulting for capacity building. Coventry: C.U.R.E.E. Retrieved from http://www.curee-paccts.com/files/publication/1219309949/mentoring_and_coaching_capacity_building.pdf.
- Collier, S. T. (1999). Characteristics of reflective thought during the student teaching experience. *Journal of Teacher Education*, 50(3), 173-181.
- Collins, J. L., Cook-Cottone, C. P., Robinson, J. S. & Sullivan, R. R. (2004). Technology and new directions in professional development: Applications of digital video, peer review, and self-reflection. *Journal of Educational Technology Systems*, 33(2), 131-146.
- Creswell, J. W. (2007). *Qualitative inquiry and research design: Choosing among five traditions* (2nd Ed.) Thousand Oaks, CA: Sage.

- Cunningham, A. & Benedetto, S. (2002). Using digital video tools to promote reflective practice. In C. Crawford *et al.* (Eds.) *Proceedings of Society for Information Technology and Teacher Education International Conference 2002* (pp. 551-553). Chesapeake, VA: AACE.
- Cuper, P., Gong, Y., Farina, L. & Manning-Osborn, M. (2007). Video analysis as a reflective tool: Providing pre-service teachers a gradual-replay lens on their developing practice. In R. Carlsen *et al.* (Eds.), *Proceedings of Society for Information Technology & Teacher Education International Conference 2007* (pp. 45-48). Chesapeake, VA: AACE. Retrieved from <http://www.editlib.org/p/24498>.
- Daley, G., & Kim, L. (2010). *A teacher evaluation system that works*. Retrieved from http://www.tapsystem.org/publications/wp_eval.pdf
- Dawson, P. J., Dawson, K. E. & Forness, S. R. (2001). Effect of video feedback on teacher behavior. *Journal of Educational Research*, 68(5), 197-201.
- Deasy, G., Heitzenroder, W., Wienkee, W., & Bloom, L. (1991). *A comparison of methods for providing evaluative feedback to practicum students on segments of teaching during special education practicum in rural areas*. Paper presented at the Rural Education Symposium, Nashville, TN.
- Dye, B. R. (2007). Reliability of pre-service teachers' coding of teaching videos using a video-analysis tool. (Unpublished master's thesis). Brigham Young University, Provo, UT.
- Dymond, S. K. & Bentz, J. L. (2006). Using digital videos to enhance teacher preparation. *Teacher Education and Special Education*, 29(2), 98-112.
- Ellet, C. D. & Teddlie, C. (2003). Teacher evaluation, teacher effectiveness, and school effectiveness: Perspectives from the USA. *Journal of Personnel Evaluation in Education*, 17(1), 101-128.
- Engelhart, M. D. (1972). *Methods of educational research*. Chicago: Rand McNally and Company.
- Festinger, L. (1954). A theory of social comparison processes. *Human Relations*, 7, 117-140.
- Flanders, N. A. (1960). *Teacher influence, pupil attitudes, and achievement*. Washington, D. C.: ERIC Clearinghouse.

- Foster-Turner, J. (2006). *Coaching and Mentoring in Health and Social Care: the Essentials of Practice for Professionals and Organisations*. Oxford: Radcliffe Publishing.
- Franseth, J. (1961). *Supervision as leadership*. Evanston, IL: Row, Peterson and Company.
- Fuller, F. F. & Manning, B. A. (1973). Self-confrontation reviewed: A conceptualization for video playback in teacher education. *Review of Educational Research*, 43(4), 469-528.
- Furst, N., Sandefor, J. T., Bressler, A. & Johnson, D. P. (1971). *Interaction analysis: Selected papers*. Washington, D.C.: Association of Teacher Educators.
- Galloway, C. (1968). Nonverbal communication. *Theory into Practice*, 7(5) 172-175.
- Grainger, S. (2004). *Practitioners as professionals: Revealing the artistry of expert educators*. Paper presented at the 7th Australian VET Research Association Conference, Canberra, Australia. Retrieved from http://www.avetra.org.au/Conference_Archives/2004/documents/PA067Grainger.PDF
- Griswold, S. L. (2004). *Videotaped performances: Guiding teacher professional development within a competency-based framework*. ProQuest Dissertations and Theses. (UMI: 3150452)
- Grossman, P. L. (2005). Research on pedagogical approaches in teacher education. In M. Cochran-Smith & K. Zeichner (Eds.), *Review of research in teacher education*. Washington, D. C.: American Educational Research Association.
- Hafford-Letchfield, T., Leonard, K., Begum, N., & Chick, N.F. (2008). *Leadership and management in social care*. London: Sage.
- Halter, C. P. (2006). *The reflective lens: The effects of video analysis on preservice teacher development*. (Doctoral Dissertation, University of California, San Diego). Retrieved from ProQuest Dissertations and Theses. (305349460).
- Haney, A. (1997). The role of mentorship in the workplace. In M. C. Taylor (Ed.), *Workplace education* (pp 211-228). Toronto: Culture.
- Hatfield, M. M. & Bitter, G. G. (1996). A multimedia alternative for professional development. *Teaching Education*, 8(2), 67-71.
- Hatton, N., & Smith, D. (1995). Reflection in teacher education: Towards definition and implementation. *Teaching & Teacher Education*, 11(1), 33-49.

- Hazi, H. M. & Arrendondo Rucinski, D. (2009). Teacher evaluation as a policy target for improved learning: A fifty-state review of statute and regulatory action since NCLB. *Education Policy Archives*, 17(5), 1-22. Retrieved from <http://epaa.asu.edu/ojs/article/download/7/7>.
- Hobson, A., & Sharp, C. (2005). Head to head: A systematic review of the research evidence on mentoring new head teachers. *School Leadership and Management*, 25(1), 25-42.
- Hollingsworth, H. (2005). Learning about teaching and teaching about learning: Using video data for research and professional development. Paper presented at Australian Council for Educational Research conference. Retrieved from http://research.acer.edu.au/cgi/viewcontent.cgi?article=1015&context=research_conference_2005.
- Holzman, P. S. (1969). On hearing and seeing oneself. *Journal of Nervous and Mental Disease*, 148(3), 198-209.
- Honig, M. I. & Rainey, L. R. (2012). Autonomy and school improvement: What do we know and where do we go from here? *Educational Policy*, 26(3), 465-495.
- Horn, E. (2008). *Distribution of opportunity for participation among the various pupils in classroom recitations*. Whitefish, MT: Kessinger Publishing. (Facsimile reprint of original work published in 1915).
- Hougham, P. (1992). *Improving student teachers' strategies for asking a range of both high and low level questions through video evaluations*. Retrieved from ERIC database. (ED349309)
- Jones, M., Nettleton, P., Smith, L., Brown, J., Chapman, T. & Morgan, J. (2005, September 14-17). The mentoring chameleon—A critical analysis of mentors' and mentees' perceptions of the mentoring role in professional education and training programmes for teachers, nurses, midwives and doctors. Paper presented at the British Educational Research Association Annual Conference, University of Glamorgan.
- Kpanja, E. (2001). A study of the effects of video tape recording in microteaching training. *British Journal of Educational Technology*, 32(4), 483-486.
- Kerlinger, F. N. (1973). *Foundations of behavioral research*. New York: Holt, Rinehart and Winston, Inc.
- Kerchner, J. L. (1997). Portfolio assessment: Tracking development. *Journal of Music Teacher Education*, 6(2), 19-22.

- Killion, J. P., & Todnem, G. R. (1991). A process for personal theory building. *Educational Leadership*, 48(6), 14-16.
- Knight, J. (2006). Instructional Coaching. *School Administrator*, 63(4), 36-40.
- Knight, J. (2007). *Instructional coaching: A partnership approach to improving instruction*. New York: Corwin Press.
- Kortman, S. A. & Honaker, C. J. (2001). *The BEST mentoring experience: A framework for professional development*. Dubuque, IA: Kendall/Hunt.
- Kortman, S. A. & Honaker, C. J. (2010). *Mentoring and coaching professional development: Support to quality practice (participant guide)*. Dubuque, IA: Kendall Hunt.
- Kortman, S. A. & Honaker, C. J. (2010). *Standards in teaching professional development: Reflection to quality practice*. Dubuque, IA: Kendall Hunt.
- Kotter, J. P. (1995). Leading change: Why transformation efforts fail. *Harvard Business Review*, 73(2), 59-67.
- Krammer, K., Ratzka, N., Klieme, E., Lipowsky, F., Pauli, C. & Reusser, K. (2006) Learning with classroom videos: Conception and first results of an online teacher-training program. *ZDM*, 38(5), 422-432.
- Krueger, R.A. (2006). Analyzing focus group interviews. *Journal of Wound, Ostomy, and Continence Nursing*, 33(5), 478-481.
- Kurtz, S., Silverman, J., & Draper, J. (2005). *Teaching and learning communication skills in medicine* (2nd ed). Abingdon, UK: Radcliffe Medical Press.
- Lamb, M. L. & Swick, K. J. (1975). Historical overview of teacher observation. *Educational Forum*, 39(2), 239-47.
- Larrivee, B. (2008). Development of a tool to assess teachers' level of reflective practice. *Reflective Practice*, 9(3), 341-360.
- Leat, D. (2005). *Partnerships and Participation in Teacher Research*. Cranfield: National College for School Leadership, Cranfield University. Retrieved from <http://networkedlearning.ncsl.org.uk/collections/network-research-series/reports/teacher-researcher-reports/nlg-partnership-and-participation-in-teacher-research.pdf>.

- Lord, P., Atkinson, M., & Mitchell, H. (2008). *Mentoring and coaching for professionals: A study of the research evidence*. National Foundation for Educational Research. Retrieved from <http://www.nfer.ac.uk/nfer/publications/MCM01/MCM01.pdf>.
- Martin-Reynolds, J. (1980). The effects of a self-evaluation model on the focus reaction of student teachers during split-screen videotape feedback. *The Journal of Educational Research*, 73(6), 360-364.
- Marzano, R. J. & Waters, T. (2009). *District leadership that works: Striking the right balance*. Bloomington, IN: Solution Tree Press.
- Maxfield, M. & Romano, D. (2012). The role of video in pre-service teacher first day of school observations: Peer review on learning of teaching concepts and future application. In P. Resta (Ed.), *Proceedings of society for information technology & teacher education international conference 2012* (pp. 636-641). Chesapeake, VA: AACE.
- McDonnell, F. & Zutshi, H. (2006). *Continuing Professional Development Strategy for the Social Care Workforce*. Leeds, UK: Skills for Care/CWDC. Retrieved from http://dera.ioe.ac.uk/8333/1/CPD_strategy_webedn_links.pdf.M
- McNeill, B. R. (1998). Video self-observation in teacher development. In B. Visgatis (Ed.), *On JALT '97: Trends & transitions (Proceedings of the JALT 1997 international conference on language teaching and learning)* (pp. 77-82). Tokyo: The Japan Association for Language Teaching.
- Mezirow, J. (1997). Transformative learning: Theory to practice. *New Directions for Adult & Continuing Education*, 1997(74), 5-12.
- Mezirow, J. (1998). On critical reflection. *Adult Education Quarterly*, 48(3), 185-198.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook*. Thousand Oaks, CA: Sage.
- Milken, L. (2002). *Growth of the teacher advanced program: Teaching as the opportunity*. Retrieved from http://www.tapsystem.org/pubs/lm_tap_book.pdf.
- Miller, M. J. (2009). Talking about our troubles: Using video-based dialogue to build preservice teachers' professional knowledge. *The Teacher Educator*, 44(3), 143-163.
- Miyata, H. (2002). A study developing reflective practices for preservice teachers through a web-based electronic teaching portfolio and video-on demand assessment program. *Proceedings of the International Conference on Computers in Education (ICCE '02)*, 2, 1039-1043.

- Mourlam, D. (2013, February). Lights, camera, reflection! *Learning & Leading with Technology*, 40(5), 22-24.
- Nicol, C. & Crespo, S. (2004). Learning to see in mathematics classrooms. *Proceedings of the 28th Conference of the International Group for the Psychology of Mathematics Education*, 3, 417-424.
- Pailliotet, A. W. (1995). I never saw that before: A deeper view of video analysis in teacher education. *Teacher Educator*, 31(2), 138-156.
- Parikh, S. B., Janson, C. & Singleton, T. (2012). Video journaling as a method of reflective practice. *Counselor Education & Supervision*, 51, 33-49.
- Patton, M. Q. (2002). *Qualitative research & evaluation methods* (3rd ed.). Thousand Oaks, CA: Sage.
- Pavlovic, S., & Friedland, B. (1997). *Reflectivity in supervision and teaching*. Washington, DC: Department of Education. Retrieved from the ERIC database (ED406115).
- Perlberg, A. (1983). When professors confront themselves: Towards a theoretical conceptualization of video self-confrontation in higher education. *Higher Education*, 12(6), 633-663. Retrieved from <http://www.jstor.org/stable/3446121>.
- Peterson, K. D. (2004). Research on school teacher evaluation. *NASSP Bulletin*, 88(639), 60-79.
- Preston, M., Campbell, G., Ginsburg, H., Sommer, P. & Moretti, F. (2005). Developing new tools for video analysis and communication to promote critical thinking. In P. Kommers & G. Richards (Eds.), *Proceedings of world conference on educational multimedia, hypermedia and telecommunications 2005* (pp. 4357-4364). Chesapeake, VA: AACE.
- Prusak, K., Dye, B. R., Graham, C. & Graser, S. (2010). Reliability of pre-service physical education teachers' coding of teaching videos using studiocode analysis software. *Journal of Technology and Teacher Education*, 18(1), 131-159.
- Puckett, R. C. (1928) Making supervision objective. *School Review*, 36(3), 209-212.
- Reagan, T. (1993). Educating the "reflective practitioner": The contribution of philosophy of education. *Journal of Research and Development in Education*, 26(4), 189-196.
- Rich, P. & Hannafin, M. (2008). Capturing and assessing evidence of student teacher inquiry: A case study. *Teaching and Teacher Education*, 24(6), 1426-1440.

- Rich, P. & Hannafin, M. (2009). Video annotation tools: Technologies to scaffold, structure, and transform teacher reflection. *Journal of Teacher Education*, 60(1), 52-67.
- Rivkin, S. G., Hanushek, E. A., & Kain, J. F. (2005). Teachers, schools, and academic achievement. *Econometrica*, 73(2), 417-458.
- Rockoff, J. E. (2004). The impact of individual teachers on student achievement: Evidence from panel data. *American Economic Review Papers and Proceedings*, 94(2), 247-252.
- Rodgers, A., & Rodgers, E. (2007). *The effective literacy coach: Using inquiry to support teaching and learning*. New York: Teachers College Press.
- Rosaen, C. L., Lundeberg, M., Cooper, M., Fritzen, A. & Terpstra, M. (2008). Noticing noticing: How does investigation of video records change how teachers reflect on their experiences? *Journal of Teacher Education*, 4, 347-360.
- Schofield, J. W. (1995). *Computers and classroom culture*. New York: Cambridge University Press.
- Schön, D. A. (1983). *The reflective practitioner: How professionals think in action*. London: Temple Smith.
- Scida, E. E. & Firdyiwiek, Y. (2013). Video reflection in foreign language teacher development. In H. W. Allen & H. H. Maxim (Eds.), *AAUSC issues in language program direction 2011: Educating the future foreign language professoriate for the 21st century* (pp. 212-230). Boston, MA: Cengage.
- Seibert, K. W., & Daudelin, M. W. (1999). *The role of reflection in managerial learning*. Westport, CT: Quorum.
- Shallcross, A., Lancaster, J. & Robinson, J. (2006). How can new technologies be used to promote the development of evidence-based practice by trainees during school experience? London: TDA R&D Award Report. Retrieved from <http://www.ttrb3.org.uk/wp-content/uploads/2012/10/RandD2-05ShallcrossMMU-9-Aug-2006.doc>
- Shanklin, N. L. (2006). *What are the characteristics of effective literacy coaching?* Literacy Coaching Clearinghouse. Retrieved from <http://www.literacycoachingonline.org/briefs/CharofLiteracyCoachingNLS09-27-07.pdf>.
- Shepherd, C. E., & Hannafin, M. J. (2008). Examining preservice teacher inquiry through video-based, formative assessment e-portfolios. *Journal of Computing in Teacher Education*, 25(1), 31-36.

- Shepherd, C. & Hannafin, M. (2009). Beyond recollection: Re-examining preservice teacher practices using structured evidence, analysis, and reflection. *Journal of Technology and Teacher Education*, 17(2), 229-251.
- Sherin, M. G. & Han, S. Y. (2004). Teacher learning in the context of a video club. *Teaching and Teacher Education*, 20, 163-183.
- Sherin, M. G., & van Es, E. A. (2005). Using video to support teachers' ability to notice classroom interactions. *Journal of Technology and Teacher Education*, 13(3), 475-491.
- Simkins, T., Coldwell, M., Caillau, I., Finlayson, H., & Morgan, A. (2006). Coaching as an in-school leadership development strategy: Experiences from Leading from the Middle. *Journal of In-Service Education*, 32(3), 321-340.
- Slater, H., Davies, N. M., & Burgess, S. (2012). Do teachers matter? Measuring the variation in teacher effectiveness in England. *Oxford Bulletin of Economics and Statistics*, 74(5), 629-645.
- Spanjer, R. A. (1972). *Teacher preparation: Supervision and performance*. Washington, D.C.: Association of Teacher Educators.
- Sparks-Langer, G. M., Simmons, J. M., Pasch, M., Colton, A., & Starko, A. (1990). Reflective pedagogical thinking: How can we promote it and measure it? *Journal of Teacher Education*, 41(5), 23-32.
- Spears, H. (1953). *Improving the supervision of instruction*. New York: Prentice-Hall, Inc
- Starcevich, M. M. (2009). *Coach, mentor: Is there a difference?* Retrieved from <http://www.coachingandmentoring.com/Articles/mentoring.html>.
- Stevens, R. (2007). Capturing ideas in digital things: A new twist on the old problem of inert knowledge. In R. Goldman, R. Pea, B. Barron, & S. J. Derry (Eds.), *Video research in the learning sciences* (pp. 547-563). Mahwah, NJ: Lawrence Erlbaum.
- Stoller, F. H. (1968). Use of videotape (focused feedback) in group counselling and group therapy. *Journal of Research and Development in Education*, 1(2), 30-44.
- Sturtevant, E. (2003). *The literacy coach: A key to improving teaching and learning in secondary schools*. Washington, DC: Alliance for Excellent Education.
- Sunal, D. W. & Sunal, C. S. (1992). The impact of network communication technology on science teacher education. *Journal of Computers in Mathematics and Science Education*, 11(2), 143-153.

- Sundli, L. (2007). Mentoring—A new mantra for education? *Teaching and Teacher Education*, 23(2), 201-214.
- Thomas, R. M. (2003) *Blending qualitative & quantitative research methods in theses and dissertations*. Thousand Oaks, CA: Corwin Press.
- Toll, K. (2005). *Literacy coach's survival guide: Essential questions and practical answers*. Newark, DE: International Reading Association.
- Tripp, T. & Rich, P. (2012). Using video to analyze one's own teaching. *British Journal of Educational Technology*, 43(4), 678-704.
- Tripp, T. (2009). *Understanding the use of video analysis tools to facilitate reflection among pre-service teachers*. (Unpublished Master's thesis). Brigham Young University, Provo, Utah.
- Trochim, W. M. K. (2006). Descriptive statistics. *Research Methods Knowledge Base*. Retrieved from <http://www.socialresearchmethods.net/kb/statdesc.php>.
- van Es, E. A., & Sherin, M. G. (2002). Learning to notice: Scaffolding new teachers' interpretations of classroom interactions. *Journal of Technology and Teacher Education*, 10(4), 571-596.
- van Es, E. A. (2010). Viewer discussion is advised: Video clubs focus teacher discussion on student learning. *Journal of Staff Development*, 31(1), 54-58.
- van Kessel, L. (2006). Coaching, a field for professional supervisors?. *Ljetopis Socijalnog Rada*, 14(2), 387-430. Retrieved from <http://hrcak.srce.hr/file/22080>.
- Vella, J. (1994). *Learning to listen, learning to teach: The power of dialogue in educating adults*. San Francisco: Jossey-Bass.
- Vogt, M. E., & Shearer, B. A. (2011). *Reading specialists and literacy coaches in the real world* (3rd ed.). Boston, MA: Pearson Education.
- Wagner, C. A. (1920). Supervision of instruction. *Educational Review*, 59, 140-141.
- Ward, J. R., & McCotter, S. S. (2004). Reflection as a visible outcome for preservice teachers. *Teaching and Teacher Education*, 20, 243-257.
- Ward, M. D. (1981). *The observer effect in classroom visitation*. Paper presented at the 65th Annual Meeting of the American Educational Research Association, Los Angeles, CA. Retrieved from ERIC database. (ED 204384)

- Warden, B. J. (2004). *Self-evaluation of reflective thinking among pre-service and in-service teachers*. ProQuest Dissertations and Theses. (305080231).
- Wedman, J. M., Espinosa, L. M. & Laffey, J. (1999). A process for understanding how a field based course influences teachers' beliefs and practices. *Teacher Educator*, 34(3), 189-214.
- Weisberg, D., Sexton, S., Mulhern, J., Keeling, D. (2009). *The widget effect: Our national failure to acknowledge and act on differences in teacher effectiveness*. Brooklyn: The New Teacher Project. Retrieved from <http://widgeteffect.org/downloads/TheWidgetEffect.pdf>.
- Wishart, J. (2009). Use of mobile technology for teacher training. In M. Ally (Ed.), *Mobile learning: Transforming the delivery of education and training* (pp. 265-278). Edmonton, AB: Athabasca University Press.
- Wright, G. A. (2008). How does video analysis impact teacher reflection-for-action. (Unpublished doctoral dissertation). Brigham Young University, Provo, UT.
- Yerrick, R., Ross, D. & Molebash, P. (2005). Too close for comfort: Real-time science teaching reflections via digital video editing. *Journal of Science Teacher Education*, 16(4), 351-375.

APPENDIX A

RECRUITMENT LETTER TO COACHES

Dear Coach:

I am a graduate student under the direction of Dr. Gary Bitter in the Mary Lou Fulton Teachers College at Arizona State University. I am conducting a research study to determine how the DataCapture mobile application and video recordings of teachers' performance are used in an instructional coaching context.

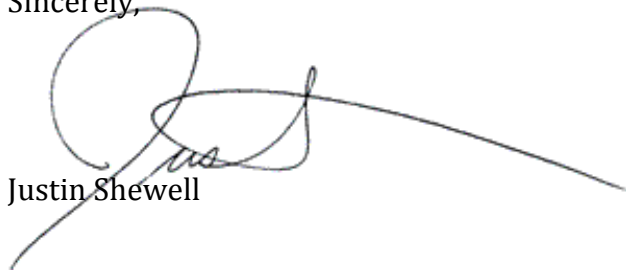
I am recruiting a number of coaches to participate in the study. Your participation would involve using the DataCapture application to record video during your normal coaching duties, and participate in an interview at the end of the two month study period.

Your participation in this study is voluntary and there is no penalty if you choose not to participate. In exchange for your participation, your email address will be entered into a random drawing for one of several \$50 gift cards to popular stores such as Walmart or Target. Withdrawing from the study does not remove your name from the drawing.

Your participation in this study will help us understand how video recordings can be used in the instructional coaching process. If you have any questions concerning the research study, please email me at jshewell@asu.edu.

If you would like to participate in the study, please complete the following questionnaire. Thank you.

Sincerely,



Justin Shewell

RECRUITMENT QUESTIONNAIRE FOR COACHES

Please complete this questionnaire so we may contact you further about participating in this research study. All responses to this questionnaire will be kept confidential and your email address and other personal information will not be exchanged, sold, or given to anyone outside of this research study.

Please select your current school level and title (choose only one):

Elementary

- Title 1 Program Facilitator (PF)
- Instructional Technology Coach (ITC)
- Other (Please specify: _____)

Middle

- Title 1 Program Facilitator (PF)
- Teacher Technology Facilitator (TTF)
- Instructional Coach (IC)
- Other (Please specify: _____)

High

- Teacher Technology Facilitator (TTF)
- Curriculum Coordinator (CC)
- Other (Please specify: _____)

District

- District Technology Coach (DTC)
- District Instructional Coach (DIC)
- District Trainer (DT)
- Other (Please specify: _____)

Years of experience as a teacher:

Years of experience as a coach:

Please briefly describe what training you have received in coaching (e.g. cognitive coaching) and what model (i.e. steps for pre-/post-observation and reflection) you use when interacting with teachers in your capacity as a coach:

Gender (select one): Male Female

Age:

Email address:

(Email address is needed so I can contact you with further instructions for participating in the study).

APPENDIX B

PARTICIPATION CONSENT LETTER FOR COACHES

Dear Coach:

I am a graduate student under the direction of Dr. Gary Bitter in the Mary Lou Fulton Teachers College at Arizona State University. I am conducting a research study as part of the requirements to complete my doctoral dissertation in Educational Technology. The focus of the study is to determine how the DataCapture mobile application and video recordings of teachers' performance are used in the instructional coaching process.

I am inviting your participation in this study. Your participation would involve using the DataCapture application to record video of teachers' performance during your normal coaching duties, and participating in an interview at the end of the study period.

Your participation in this study is voluntary. If you choose not to participate or to withdraw from the study at any time, there will be no penalty. There are no foreseeable risks or discomforts to your participation and you must be 18 years or older to participate in this study. You have the right not to answer any interview question, and to stop participation at any time.

The results of this study may be used in reports, presentations, or publications but your name will never be used.

If you have any questions concerning the research study, please contact Justin Shewell (co-investigator) at jshewell@asu.edu, or Dr. Gary Bitter (principal investigator) at bitter@asu.edu. If you have any questions about your rights as a subject/participant in this research, or if you feel you have been placed at risk, you can contact the Chair of the Human Subjects Institutional Review Board, through the ASU Office of Research Integrity and Assurance, at (480) 965-6788.

By signing below, you are agreeing to participate in the study.

Signature

Date

APPENDIX C

PARTICIPATION CONSENT LETTER FOR TEACHERS

Dear Teacher:

I am a graduate student under the direction of Dr. Gary Bitter in the Mary Lou Fulton Teachers College at Arizona State University. I am conducting a research study as part of the requirements to complete my doctoral dissertation in Educational Technology. The focus of the study is to determine how using video recordings of teachers' performance impacts the coaching process.

I am inviting your participation in this study. Your participation would involve being observed using video as part of the normal coaching process, and participating in a 30-minute focus group interview toward the end of the study. Your responses to the focus group interview questions will help others understand how using video recordings of teachers' performance impacts the coaching process and contribute to the information known about the use of video recordings in teacher observations.

Your participation in this study is voluntary. If you choose not to participate or to withdraw from the study at any time, there will be no penalty. There are no foreseeable risks or discomforts to your participation and you must be 18 years or older to participate in this study. You have the right not to answer any question, and to stop participation at any time.

The results of this study may be used in reports, presentations, or publications but your name will never be used.

If you have any questions concerning the research study, please contact Justin Shewell (co-investigator) at jshewell@asu.edu, or Dr. Gary Bitter (principal investigator) at bitter@asu.edu. If you have any questions about your rights as a subject/participant in this research, or if you feel you have been placed at risk, you can contact the Chair of the Human Subjects Institutional Review Board, through the ASU Office of Research Integrity and Assurance, at (480) 965-6788.

By signing below, you are agreeing to participate in the study.

Signature

Date

APPENDIX D

FOCUS GROUP INTERVIEW CONSENT FORM

Dear Participant:

I am a doctoral student under the direction of Dr. Gary Bitter at Arizona State University. I am conducting a research study to determine how the DataCapture mobile application and video-based evidence are used in the instructional coaching process.

I am inviting your participation in a focus group interview, which will involve answering questions about the use of video recordings of teachers' performance in your coaching interactions, and how you feel about using the DataCapture mobile application and video-based evidence in the coaching process. The focus group interview will take approximately 20-30 minutes. You have the right not to answer any question, and to stop participation at any time.

Your participation in this study is voluntary. If you choose not to participate or to withdraw from the study at any time, there will be no penalty. For example, it will not affect your standing with the school administration.

I would like to video and audio record this focus group so that I can transcribe the interviews to ensure that I have accurate statements for each interviewee. You will not be recorded unless you give permission. If you give permission to be recorded, you have the right to ask for the recording to be stopped. The video files will be kept within password-protected folders and will be destroyed at the conclusion of the research project. Complete confidentiality cannot be guaranteed due to the group nature of the interviews.

If you have any questions concerning the research study, please contact Justin Shewell at jshewell@asu.edu (co- investigator) or Dr. Gary Bitter at bitter@asu.edu (principal investigator). If you have any questions about your rights as a subject/participant in this research, or if you feel you have been placed at risk, you can contact the Chair of the Human Subjects Institutional Review Board, through the ASU Office of Research Integrity and Assurance, at (480) 965-6788.

By signing below you are agreeing to participate in the study.

Signature

Date

By signing below, you are agreeing to be video/audio recorded.

Signature

Date

APPENDIX E

FOCUS GROUP RECRUITMENT SCRIPT

I am a graduate student under the direction of Professor Gary Bitter in the Mary Lou Fulton Teachers College at Arizona State University. I am conducting a research study to determine how the DataCapture mobile application and video-based evidence are used in the instructional coaching process.

I am recruiting individuals to participate in a focus group interview to determine how video was used during your coaching interactions and your attitudes toward the DataCapture mobile application and the use of video in the coaching process. The focus group will take approximately 20-30 minutes. You must be 18 or older to participate.

Your participation in this study is voluntary. If you have any questions concerning the research study, please email me at jshewell@asu.edu.

APPENDIX F

FOCUS GROUP INTERVIEW QUESTIONS FOR COACHES

1. What is your opinion about using video recordings during observations of teachers and for encouraging self-reflection of teachers?
2. What problems or concerns, if any, do you have about using video during teacher observations?
3. Has your attitude toward using video changed since the beginning of the study period?
4. Please describe the process you used to record video during observations.
5. Did you have any problems while recording video with teachers?
6. How did you use video evidence with teachers during your coaching?
7. What is your opinion about using the DataCapture mobile application?
8. What problems or concerns, if any, did you have while using the DataCapture mobile application?
9. Did you encounter any barriers to using video with teachers? What were they?
10. Is there anything else you would like to add?

APPENDIX G

FOCUS GROUP INTERVIEW QUESTIONS FOR TEACHERS

1. What is your opinion of being video recorded during observations and using the video clips for reflection?
2. Has your attitude about using video for reflection changed since using it with your coach?
3. How did seeing video recordings of your performance impact the goals you set for your growth areas?
4. How did seeing video recordings of your performance impact your attitude toward your coach's advice or comments?
5. Is there anything you would like to add?

APPENDIX H

FOCUS GROUP INTERVIEW PROTOCOL

1. The researcher contacted the individual participating coaches and teachers via email using the Focus Group Recruitment Script (see Appendix E) and invited them to come to an interview at the specified time and date.
2. Based on the response from the coaches, the specified time and date had to be modified, creating five separate interview sessions over a period of two days.
3. At each interview session, the researcher had the participant(s) read and sign the Focus Group Interview Consent Letter (see Appendix D), which indicated the interviews would be both video and audio recorded to aid in transcription and analysis. With the exception of one coach, all participants agreed to being video and audio recorded. The dissenting coach agreed to be audio recorded only.
4. Once the recording devices were turned on, the researcher asked each participant in turn to answer the interview questions (see Appendix F and Appendix G).
5. After all the questions had been asked, the researcher gave each participant the opportunity to add any additional comments.
6. The researcher then asked for permission to contact them if further questions arose, or any clarification was needed regarding their answers.
7. The researcher thanked each participant and said the results of the study would be available upon completion of the dissertation.

APPENDIX I
BEST RUBRIC (TEACHING STANDARDS)



BEST Standards in Teaching

Knowledge Standards

Content Knowledge

1. Has comprehensive academic knowledge.
2. Has content specific knowledge.
3. Knows how to develop student knowledge in subject area.
4. Knows student academic standards.
5. Knows how subject area applies to life.

Professional Knowledge

1. Has foundational knowledge in teaching and learning
2. Knows elements essential to instruction.
3. Knows educational system perspective.
4. Knows a variety of teaching methods.

Practice Standards

Instructional Design

1. Develops lessons with elements essential to instruction.
2. Plans instruction to meet student academic standards.
3. Using knowledge of students and their abilities, creates plans for individual student achievement.
4. Addresses practices of effective teaching and learning.

Instruction

1. Implements essential elements of instruction.
2. Actively engages students in the learning process.
3. Differentiates to meet students' diverse needs.
4. Provides opportunities for students to demonstrate learning.
5. Ensures mastery of content being learned.

Management

1. Incorporates effective strategies in proactive management.
2. Implements corrective management.
3. Facilitates organization of learning.
4. Develops a cooperative learning community.

Assessment

1. Uses a variety of informal and formal assessments.
2. Aligns assessments to instruction.
3. Demonstrates student learning through assessments.
4. Analyzes assessment data to facilitate student learning.
5. Reports student performance of learning expectations.

Collaboration

1. Interacts with students to promote school, classroom and individual goals.
2. Works with parents to promote student learning.
3. Collaborates with educational colleagues to achieve school, district and individual goals.
4. Partners with community for resources and services.

*Professional Development Standard***Professional Development**

1. Practices ongoing reflective process.
2. Designs a professional development plan.
3. Engages in activities relevant to teacher impact on student learning.
4. Documents professional growth in relationship to the teaching standards.

Kortman, S. & Honaker, C., (2010). *Standards in Teaching Professional Development: Reflection to Quality Practice*.

**BEST Teaching Standards Assessment Rubric
Content Knowledge**

Criteria	Unsatisfactory Performance	Developing Performance	Standard Performance	Proficient Performance	Master Performance
1. Has comprehensive academic knowledge.	The teacher has minimal core academic knowledge.	The teacher has attained general academic knowledge.	The teacher has comprehensive academic knowledge. The teacher has attained and shown evidence of a well-rounded and broad foundation of academic knowledge in various disciplines (i.e., humanities, language arts, mathematics, science, social science, fine arts, technology).	The teacher engages in and demonstrates knowledge of ideas from various disciplines (i.e., humanities, language arts, mathematics, science, social science, fine arts, technology) to develop the basis for ongoing inquiry, problem-solving, and the creation of new perspectives.	The teacher engages in and integrates ideas from various disciplines (i.e., humanities, language arts, mathematics, science, social science, fine arts, technology) with cultural and global awareness, and current events to develop the basis for ongoing inquiry, problem-solving, and the creation of new perspectives.
2. Has content specific knowledge.	The teacher has limited knowledge in the relevant content area(s).	The teacher has attained knowledge in the relevant content area(s).	The teacher has content-specific knowledge. The teacher has attained and shown evidence of comprehensive knowledge in the relevant content area(s).	The teacher has attained and shown evidence of comprehensive knowledge in the relevant content area(s), and continues to build on this knowledge.	The teacher has attained and shown evidence of comprehensive content knowledge, continues to actively build on this knowledge, and articulates applications of this knowledge in diverse educational settings.
3. Knows student academic standards.	The teacher has little or no knowledge of student academic standards.	The teacher has knowledge of student academic standards, and specific knowledge of the student standards in relevant content area(s).	The teacher knows relevant student academic standards, and has shown evidence of understanding their alignment and application to instruction.	The teacher has a comprehensive understanding of relevant student academic standards, and their alignment and application to research-based effective instructional practices.	The teacher has a comprehensive understanding of relevant student academic standards, and their alignment and application to research-based effective instructional practices. The teacher has an integrated knowledge of student academic standards across grade levels and subject areas, and shows evidence of the articulation of this knowledge for student success.
4. Knows how to develop student knowledge in content area.	The teacher has little or no knowledge of how to develop student knowledge in content area(s).	The teacher has knowledge of content-specific teaching and learning theories and practices. The teacher has limited knowledge of applications for developing student knowledge in content area(s).	The teacher knows multiple content-specific teaching and learning theories and methods. The teacher has shown evidence of knowing how to develop student knowledge in the relevant content area(s).	The teacher knows multiple content-specific research-based teaching and learning theories and methods in the relevant content area(s). The teacher shows evidence of how to use this knowledge to develop and advance student learning.	The teacher knows multiple content-specific teaching and learning theories and methods for developing depth and breadth of student knowledge in relevant content area(s). The teacher shows evidence of making connections between content knowledge and how the knowledge applies to student learning, motivation, engagement, and achievement.
5. Knows how content area applies to life.	The teacher has little or no knowledge of how the content area(s) applies to life.	The teacher has practical knowledge of how the content area(s) applies to life.	The teacher knows and has shown evidence of how the content area(s) applies to life. The teacher has knowledge of how to apply these content applications within the context of teaching.	The teacher synthesizes and is able to justify connections between the content area(s) and life. The teacher has knowledge of how to teach these applications in ways that enhance student acquisition of knowledge and skill.	The teacher synthesizes and is able to justify connections between the content area(s) and life. The teacher has knowledge of how to teach these applications in ways that enhance student acquisition of knowledge and skill. The teacher has knowledge of how to engage students in the discovery of the content area applications to life in real-world settings.

BEST Teaching Standards Assessment Rubric
Professional Knowledge

Criteria	Unsatisfactory Performance	Developing Performance	Standard Performance	Proficient Performance	Master Performance
1. Has foundational knowledge in teaching and learning.	The teacher has minimal foundational knowledge in teaching and learning.	The teacher has attained foundational knowledge in teaching and learning.	The teacher has attained foundational knowledge in the theories and practice of teaching and learning, including knowledge of the teaching standards and student academic standards. The teacher has knowledge of developmentally-appropriate, research-based best practices in teaching and learning.	The teacher has a comprehensive understanding in the theories and practices of teaching and learning, including knowledge of the teaching standards and student academic standards. The teacher has comprehensive knowledge and evidence of ongoing inquiry of developmentally-appropriate, research-based best practices in teaching and learning. This knowledge includes but is not limited to cultural diversity, human development, curriculum, instructional design, multiple learning styles, student learning strategies, student motivation, classroom management, differentiation, active student engagement, assessment, and integration of technology. The teacher understands the impact of this knowledge on teaching and learning. The teacher makes connections between content knowledge and professional knowledge, applying understanding of many aspects of life, society, and learning that impacts how teachers teach and students learn.	The teacher understands diverse instructional strategies to meet students' needs. The teacher has comprehensive knowledge and ongoing inquiry of developmentally-appropriate, research-based best practices in teaching and learning. This knowledge includes but is not limited to cultural diversity, human development, curriculum, instructional design, instruction, multiple learning styles, student learning strategies, student motivation, classroom management, differentiation, active student engagement, assessment, and integration of technology. The teacher understands the impact of this knowledge on teaching and learning. The teacher makes connections between content knowledge and professional knowledge, applying understanding of many aspects of life, society, and learning that impacts how teachers teach and students learn.
2. Knows elements essential to instruction.	The teacher has minimal knowledge of elements essential to instruction.	The teacher has basic knowledge of elements essential to instruction.	The teacher knows elements essential to instruction such as objectives, alignment of teaching and student academic standards, research-based instructional practices, management, and assessments of learning.	The teacher has an understanding of multiple, research-based elements essential to instruction such as objectives, alignment of teaching and student academic standards, research-based instructional practices, differentiation, student engagement, management, assessments of learning, problem-based learning, scaffolding, questioning strategies, inquiry-based learning, and teaching for conceptual understanding.	The teacher has a comprehensive understanding of research-based elements essential to instruction, such as objectives, alignment of teaching and student academic standards, research-based instructional practices, differentiation, student engagement, management, assessments of learning, problem-based learning, and teaching for conceptual understanding. The teacher has knowledge of how these elements work together to develop a comprehensive instructional design with instruction matched to assessments. The teacher has knowledge of how to apply and analyze elements essential to instruction to enhance student learning.
3. Knows a variety of teaching methods.	The teacher has minimal knowledge of different teaching methods.	The teacher knows a variety of teaching methods to increase student learning and can articulate ways that these methods are used in classroom practice.	The teacher knows a variety of developmentally-appropriate, research-based teaching methods to increase student learning. The teacher has shown evidence of knowing appropriate ways to use these methods in varying classroom contexts to impact student learning.	The teacher knows a variety of developmentally-appropriate, research-based teaching methods necessary to increase the rigor of student learning. Such methods include but are not limited to differentiation, accommodations, use of technology, small group instruction, problem-based learning, cooperative learning, and inquiry-based learning. The teacher understands how to implement differentiation of both instruction and of student learning for evidenced learning gains.	The teacher has a comprehensive understanding of appropriate teaching methods with a direct correlation to student learning. Such methods include but are not limited to differentiation, accommodations, use of technology, small group instruction, problem-based learning, cooperative learning, and inquiry-based learning. The teacher articulates correlations between effective teaching methods and increased student learning in multiple contexts. The teacher shows evidence of knowing how to increase student learning through effective teaching.
4. Knows educational system perspective.	The teacher has minimal knowledge of the educational system and its relationship to the teacher's professional role and student learning.	The teacher has a historical knowledge of the educational system and a developing awareness of the teacher's professional role as both relate to student learning.	The teacher has knowledge of the educational system, and its services and resources, and an understanding of the teacher's professional role as it relates to student learning.	The teacher has historical knowledge, present knowledge, and a future perspective of the educational system. The teacher engages in communities of knowledge, building on the understanding of the teacher's professional role and the roles of other stakeholders within the system as they impact student learning.	The teacher understands the educational system perspective from a comprehensive knowledge base. The teacher seeks knowledge-building communities to further a global vision of quality education, contributing to leadership that impacts students, teachers, school systems, and the institution of education.

BEST Teaching Standards Assessment Rubric
Instructional Design

Criteria	Unsatisfactory Performance	Developing Performance	Standard Performance	Proficient Performance	Master Performance
1. Develops lessons with elements essential to instruction.	The teacher develops lessons with little or no evidence of elements essential to instruction.	The teacher develops lessons with elements essential to instruction.	The teacher develops lessons with elements essential to instruction. These include elements such as objectives, alignment of teaching and student academic standards, research-based instructional practices, management, assessments of learning, use of technology, and use of resources. The teacher justifies plan of instruction aligned to student learning.	The teacher develops lessons with research-based elements essential to instruction such as academic standards, research-based instructional practices, differentiation, student engagement, management, assessments of learning, and use of technology and resources. The teacher includes such elements as anticipatory set, problem-based learning, scaffolding, questioning strategies, inquiry-based learning, teaching for conceptual understanding, and meaningful closure. The teacher shows evidence of effective planning to impact teaching and learning.	The teacher develops lessons with inclusion of a variety of methods, materials, resources and learning experiences, drawing from a large body of research-based elements essential to instruction that are considered best practices in education. Lessons are designed to support the application of knowledge and/or skills to new situations. The teacher's comprehensive instructional design matches instruction to assessments. The teacher applies and analyzes elements essential to instruction to enhance student learning.
2. Plans instruction to meet student academic standards.	The teacher plans instruction with little or no evidence of alignment to student academic standards.	The teacher plans instruction that labels student academic standards with minimal evidence of alignment in instruction or assessment of student learning.	The teacher plans instruction that follows a logical sequence of knowledge and skill acquisition. Curriculum, instruction and assessments are aligned to student academic standards.	The teacher plans instruction that follows a logical sequence of knowledge and skill acquisition. Instruction and assessment are aligned to student academic standards and show evidence of building on student prior knowledge, individual student needs, and rigor in student thinking and learning. The plans address level of mastery of learning objectives and goals.	The teacher plans comprehensive, integrated instruction that shows evidence of knowledge and application of best practices in teaching and learning. Instruction and assessment are aligned to student academic standards and show evidence of building on student prior knowledge, individual student needs, and rigor in student thinking and learning. The plans address progress for class and individual students to level of mastery of learning objectives and goals.
3. Uses knowledge of students and their abilities, creates plans for individual student achievement.	The teacher designs instructional plans in which minimal connections are made between the lesson plan and the specific group of learners.	The teacher designs instructional plans that address divergent needs among learners, including academic, physical, mental, social, cultural, and/or community differences.	The teacher designs developmentally-appropriate and needs-based instructional plans derived from assessments. The teacher plans for student growth in knowledge and skills based on data.	The teacher designs coherent, developmentally-appropriate instructional plans for both a specific group of learners and individual students based on analysis of academic, physical, social, cultural, and community needs and abilities among learners. The teacher uses prior knowledge and data of students and their abilities to plan for specific academic growth over time.	The teacher uses the knowledge of student differences to plan for the advancement of student learning in multiple contexts. The teacher analyzes academic, physical, social, cultural, and community differences among learners to design a coherent, developmentally-appropriate instructional plan for both a specific group of learners and individual students. The teacher shows evidence of using data to advance student learning and development.
4. Addresses practices of effective teaching and learning.	The teacher plans instruction that shows minimal evidence of effective teaching and learning practices.	The teacher plans instruction that addresses some teaching and learning practices supported by research-based best practices.	The teacher plans instruction that addresses multiple methods supported by research-based best practices in teaching and learning. There is evidence of alignment to both teaching standards and student standards.	The teacher plans instruction that incorporates research-based teaching and learning practices which provide for active student engagement and understanding of the content being learned. The teacher includes planning for cultural diversity, human development, and multiple learning styles. The teacher includes methods such as differentiation, accommodations, technology integration, problem-based learning, cooperative learning, and inquiry-based learning. The teacher incorporates instruction, classroom management, and assessment into a cohesive plan for teaching and student learning with measurable results.	The teacher plans instruction that incorporates research-based teaching and learning practices which provide for active student engagement and understanding of the content being learned. The teacher includes planning for cultural diversity, human development, and multiple learning styles. The teacher includes methods such as differentiation, accommodations, technology integration, problem-based learning, cooperative learning, and inquiry-based learning. The teacher incorporates instruction, classroom management, and assessment into a cohesive plan for teaching and student learning with measurable results.

**BEST Teaching Standards Assessment Rubric
Instruction**

Criteria	Unsatisfactory Performance	Developing Performance	Standard Performance	Proficient Performance	Master Performance
1. Implements essential elements of instruction.	The teacher implements little or no essential elements of instruction.	The teacher implements some research-based essential elements of instruction.	The teacher implements elements essential to instruction into teaching such as objectives, alignment of teaching and student academic standards, research-based instructional practices, management, assessment of learning, use of technology, and use of materials and resources. The teacher aligns curriculum and instruction to student learning.	The teacher incorporates lessons with multiple, research-based elements essential to instruction such as objectives, alignment of teaching and student academic standards, research-based instructional practices, differentiation, student engagement, management, and assessments of learning. The teacher includes such elements as problem-based learning, scaffolding, questioning strategies, inquiry-based learning, and teaching for conceptual understanding. The teacher shows evidence of instruction impacting student growth.	The teacher incorporates a variety of methods, materials, resources and learning experiences, drawing from a large body of research-based elements essential to instruction that are considered best practices in education. There is evidence of application of knowledge and/or skills to new situations. The teacher's comprehensive instructional practices match instruction to assessments. The teacher demonstrates a variety of strategies aligned with the learning outcomes to provide opportunities for students to explore and analyze content. The teacher adjusts the lesson content, timing, and sequence based on student responses, questions, and feedback. Remediation and enrichment are adjusted according to individual student performance, and are implemented to ensure student growth in learning.
2. Actively engages students in the learning process.	The teacher provides students with little or no opportunities for engagement.	The teacher provides students with a single or limited approach to learning with minimal opportunities to engage with the content being learned.	The teacher provides students with opportunities to use multiple strategies to engage with the content being learned, and multiple opportunities to demonstrate knowledge and skills within the context of learning. The students are engaged in thinking and problem-solving related to the content being learned.	The teacher provides students with opportunities to engage in different approaches to learning. Students are engaged with content in a variety of ways to develop skills and understanding. Each student is invited into the process of learning. Most or all students are actively engaged with the content being learned.	The teacher provides students with opportunities to engage in different approaches and solutions to problems, and students are expected to defend their reasoning with evidence. The teacher engages students in participation, discussion, and rigorous inquiry. Each student is invited into the process of learning and student engagement is evidenced through learning outcomes.
3. Differentiates to meet students' diverse needs.	The teacher demonstrates little or no consideration of students' prior knowledge or needs of an individual or specific group of learners.	The teacher uses strategies based primarily on previously taught content and grade-level curriculum. The teacher addresses some divergent needs among learners, including academic, physical, mental, social, cultural, and/or community differences.	The teacher uses strategies that align learning with students' prior knowledge and experiences. The teacher adapts strategies to meet the needs of learners. The teacher engages in developmentally-appropriate and needs-based instruction derived from assessments that address academic, physical, mental, social, cultural, and/or community differences among learners.	The teacher uses strategies that link learning with students' prior knowledge and experiences. The teacher adapts strategies to meet the diverse needs of individual learners, seeks clarification through multiple methods, and provides appropriate time for processing lesson content. The teacher engages in coherent, developmentally-appropriate instruction for both a specific group of learners and individual students based on analysis of academic, physical, mental, social, cultural, and community needs and abilities among learners.	The teacher uses strategies that integrate students' prior knowledge, experiences, and learning outcomes. The teacher poses thought-provoking questions and creates problem solving situations that challenge students to explore content, reflect on their understanding, and consider new possibilities. The teacher engages in coherent, developmentally-appropriate instruction for both a specific group of learners and individual students based on analysis of academic, physical, mental, social, cultural, and community needs and abilities among learners. The teacher shows evidence of using the knowledge of student differences to advance student learning in multiple contexts.

**BEST Teaching Standards Assessment Rubric
Instruction (continued)**

Criteria	Unsatisfactory Performance	Developing Performance	Standard Performance	Proficient Performance	Master Performance
4. Ensures mastery of content being learned.	The teacher has minimal ability to translate content knowledge to learning outcomes for students.	The teacher implements teaching and learning strategies that introduce content to students.	The teacher provides evidence of students mastering the student standards-based content to be learned. The teacher shows evidence of content and professional knowledge put into practice in ways that support student learning and development.	The teacher shows comprehensive integration of academic knowledge and content knowledge, with applications of knowledge to students' lives. The teacher uses data to show evidence of student growth in knowledge and skills related to the content being learned. The teacher uses data of student achievement to monitor and adjust instruction and learning to provide evidence of ongoing student progress in mastery of knowledge and skills. The teacher provides multiple ways for students to take risks in their learning, engaging students in ownership of their learning relevant to the content area. Students are able to articulate motivation for learning the content with applications to their success in the future.	The teacher uses multiple resources to enhance student learning related to the content. The teacher utilizes higher order thinking skills and problem solving related to the content with developmentally-appropriate applications to content. The teacher understands the developmental process of learning related to the student academic standards. Students are able to articulate their own learning, progress in learning, and relationship to upcoming learning within the content area. The teacher shows evidence of students engaging with the content in innovative ways. The students access resources and set specific goals for ongoing learning in the content area. The teacher generates local and global awareness related to the content being learned. Students create original work to demonstrate their learning. The teacher provides evidence of growth in learning related to the content area regardless of ability level of students.
5. Provides opportunities for students to demonstrate learning.	The teacher provides, within the instruction, minimal opportunities for students to demonstrate their learning.	The teacher provides, within the instruction, occasional opportunities for students to demonstrate knowledge and skills in limited context.	The teacher provides, within the instruction, a variety of ways for students to practice and demonstrate their learning in multiple contexts. Students show evidence of learning in progress and at a level of mastery.	The teacher frequently provides, within the instruction, opportunities for students to demonstrate and showcase their learning, both formative and summative. Students are engaged in analysis of student work. The teacher adjusts the learning opportunities based on evidence of student learning or need for advancement of student learning.	The teacher, within the instruction, consistently provides students with a variety of methods to explore and illustrate individual learning with the highest level of competency. There are evidences of higher-level thinking, and students are engaged in self-assessments and monitoring of their learning. Both formative and summative assessments are used. Analysis of these assessments is used to guide further opportunities for student growth and mastery in learning.

**BEST Teaching Standards Assessment Rubric
Management**

Criteria	Unsatisfactory Performance	Developing Performance	Standard Performance	Proficient Performance	Master Performance
1. Incorporates effective strategies in proactive management.	The teacher has minimal established rules, procedures, and proactive management strategies.	The teacher has established a management plan with established classroom procedures, behavioral rules, and some strategies for encouraging positive learning behavior.	The teacher has established classroom procedures and behavioral rules that are clear, understood, and utilized for efficient and effective classroom management. The teacher has outlined positive expectations and reinforces positive learning and behavior.	The teacher consistently utilizes efficient and effective proactive classroom management strategies. The teacher incorporates organization in the learning environment. The teacher has outlined positive expectations and reinforces positive learning and behavior. The teacher makes connections between effective instruction and management of student learning and behavior.	The teacher utilizes comprehensive proactive management that proves effective with positive learning and behavior. The teacher respectfully and seamlessly integrates classroom management with learning. Student behavior is positively managed within the context of instruction with emphasis on student learning. Evidence shows correlation between student engagement and learning outcomes. Reinforced behavior and learning relates to students' goals for future contribution to society and aspirations for personal success.
2. Implements corrective management.	The teacher has no or limited corrective management plan, and limited strategies to address disruptions in learning and negative behavior.	The teacher has a corrective management plan with stated consequences for defiance or disruption of student learning, or inappropriate student behavior. Implementation and effectiveness of the plan is limited in redirecting negative behavior and returning the student(s) to productive learning.	The teacher has developed a corrective management plan that clearly articulates inappropriate behavior and consequences to redirect students back to appropriate learning and behavior. The teacher consistently implements corrective consequences as needed. The teacher analyzes the teaching and learning environment and makes adjustments to maximize learning and behavior for all students.	The teacher effectively and seamlessly incorporates a corrective management plan that redirects students back to positive learning and behavior. There is evidence the plan is working effectively. The teacher has outlined negative consequences and consistently implements redirection as needed. Students self-assess and redirect their own behavior. The teacher is able to address corrective needs with minimal or no disruption of student learning. The teacher provides communication to parents and school leadership as determined by established procedures.	The teacher has a clearly articulated and comprehensive corrective management plan that includes identification of inappropriate behaviors, consequences, and redirection for returning students to positive learning and behavior. The teacher respectfully and seamlessly integrates classroom management with learning. Student negative behavior is positively managed within the context of instruction and emphasis is placed on student learning. The teacher helps the students independently and cooperatively meet classroom behavioral expectations. Any corrective consequences used are fair and effective in modifying negative behavior. Communication enhances positive change for productive learning.
3. Facilitates organization of learning.	The teacher has limited organization of the classroom.	The teacher has some organization of materials and resources, and has created classroom procedures to assist with the organization of learning.	The teacher facilitates the organization of learning. The teacher clearly organizes space, time, materials, technology, and resources to enhance student learning.	The teacher facilitates the organization of learning by clearly organizing space, time, materials, resources, and technology to enhance student learning. The teacher uses resources to facilitate a productive and cooperative classroom. The students independently and cooperatively assist in the organizational routines to facilitate learning.	The teacher facilitates the organization of learning to maximize space, time, materials, resources, and technology to enhance student learning. The teacher clearly has an integrated system of organization that includes the students in the maintenance and responsibility of their learning. The organization of learning shows evidence of efficiency in instructional time and time on task to meet learning outcomes.
4. Develops a cooperative learning community.	The teacher has limitations in the safety, order, and cooperation of the learning community.	The teacher has developed a safe, orderly, and positive learning community.	The teacher has developed a safe, orderly, and cooperative learning community. The teacher models respect and encourages respect among students. The students participate in community with one another to positively impact their learning.	The teacher models and creates a safe, orderly, and cooperative environment for learning and student interaction. The students demonstrate respect for the teacher and each other, including value of differences. Evidence shows that students engage in community with one another with a direct impact to growth in their learning.	The students demonstrate respect for the teacher, each other, and additional stakeholders in education. The students demonstrate self-management. The learning community expands beyond the classroom. The students' growth in learning is proven and enhanced by their cooperative interaction in the learning community.

BEST Teaching Standards Assessment Rubric Assessment

Criteria	Unsatisfactory Performance	Developing Performance	Standard Performance	Proficient Performance	Master Performance
1. Uses a variety of formal and informal assessments.	The teacher uses minimal formal and informal assessments to assist students in the monitoring of their learning.	The teacher uses formal and informal assessments that focus mainly on completion of work and the correct answer. These assessments assist in the demonstration of knowledge and skills in limited context.	The teacher uses formal and informal, as well as formative and summative assessments to gather data on student knowledge and skills. The teacher uses these assessments to guide instruction and to assist students in the monitoring of their learning. The teacher provides a variety of ways for students to practice and demonstrate their learning in multiple contexts. Students show evidence of learning in progress and at a level of mastery.	The teacher uses formal and informal assessments to gather data on student knowledge and skills. Assessments focus on procedural and conceptual understanding, with opportunities for students to explain thinking and demonstrate learning. The teacher frequently provides a variety of opportunities, both formative and summative, for students to demonstrate and showcase their learning. The teacher adjusts instruction and ongoing assessments based on evidence of student mastery of learning, need for learning, and need for growth in learning.	The teacher uses formal and informal, as well as formative and summative assessments to gather data on student understanding. Assessments focus on procedural and conceptual understanding, with opportunities for students to explain thinking, demonstrate learning, make application to other situations, and self-assess. The teacher consistently provides students with a variety of methods to explore and illustrate individual learning with the highest level of competency. There are evidences of higher-level and rigorous thinking, and students are engaged in self-assessments and monitoring of their learning. Analysis of these assessments is used to guide further opportunities for student growth in learning.
2. Aligns assessment to instruction.	The teacher demonstrates minimal connection between instruction and assessment.	The teacher develops evaluative criteria that focus on understanding content. There is limited evidence of alignment of assessment to instruction.	The teacher develops evaluative criteria that focus on understanding content and skills that are aligned to relevant academic standards in the relevant content area(s), and are aligned to instruction.	The teacher develops evaluative criteria that reflect the content taught. The criteria are unbiased and consistently administered. Criteria focus on student academic standards in the relevant content area(s). The instruction is directly aligned to the outcomes for the learning and the assessments accurately measure these outcomes. These assessments are analyzed for ongoing alignment with student needs, instructional design, and instruction.	The teacher develops evaluative criteria that reflect the content taught. The criteria are unbiased and consistently administered. Criteria focus on understanding content and skills that are aligned to student academic standards in the relevant content area(s). The instruction is directly aligned to the outcomes for the learning and the assessments accurately measure these outcomes. Assessments are analyzed for ongoing alignment with student needs, instructional design, and instruction.
3. Demonstrates student learning through assessments.	The teacher uses assessments that show minimal connection to student learning.	The teacher uses assessments that show some connection to student learning. The teacher provides limited feedback (i.e. a grade or score on student work, general comments).	The teacher uses assessments that have a direct correlation to instruction and student learning. The teacher gives feedback that accurately and meaningfully demonstrates student learning.	The teacher uses assessments that have a direct and specific correlation to instruction and student learning gains. The teacher gives feedback that provides specific information regarding student strengths, areas of needed improvement, and how improvements or growth can be attained.	The teacher uses assessments that have a direct and specific correlation to instruction and student learning gains. The teacher gives feedback that provides detailed, specific diagnosis regarding student strengths, student gains in learning, weaknesses, and other factors impacting learning. The teacher demonstrates student learning through these assessments and assists students in identification of their learning of specific knowledge or skills aligned to student academic standards. The teacher makes adjustments to reassess following further instruction when needed and to ensure student success. Students show evidence of understanding the benefits of their achievement.

**BEST Teaching Standards Assessment Rubric
Assessment (continued)**

Criteria	Unsatisfactory Performance	Developing Performance	Standard Performance	Proficient Performance	Master Performance
4. Analyzes assessment data to facilitate student learning.	The teacher conducts minimal analysis of student learning. The teacher demonstrates minimal connection between the analysis of assessments to the facilitation of student learning.	The teacher analyzes assessment data which is limited to reporting results. There is little transfer to student learning.	The teacher analyzes assessment data to identify areas of strength or areas of needed growth and development in student learning. This analysis has a direct correlation to student learning objectives and teacher instructional plans to facilitate student learning. Appropriate technologies are utilized for data analysis.	The teacher analyzes assessment data to identify strengths, objectives met, student gains, areas for needed knowledge and skills, and objectives not met. Appropriate technologies are utilized for data analysis. The teacher creates goals and learning plans for both groups of students and individual students based on the findings. The teacher adapts and modifies instructional plans to facilitate student learning. The teacher engages students in the analysis and targeted plan for increased gains in achievement.	The teacher analyzes assessment data to identify strengths, objectives met, student gains, areas for needed knowledge and skills, and objectives not met. Appropriate technologies are utilized for data analysis. The teacher makes a direct link between assessment data and subsequent decisions related to content, instructional strategies, and learning strategies. Differentiated instruction results from assessment data analysis. The teacher engages students in the analysis and targeted plan for increased gains in achievement. Whole group and individual student achievement is evidenced as a result of teacher accommodations and student responsibility for learning.
5. Reports student performance of learning expectations.	The teacher demonstrates minimal informal or formal reporting of student performance.	The teacher generally reports on student performance.	The teacher routinely reports on student performance based on clear learning expectations and a variety of assessments. The teacher maintains accurate records of progress and mastery of learning. The teacher provides clear and accurate reports of progress. The teacher utilizes appropriate technologies to report performance in meaningful ways to students, parents, and appropriate stakeholders.	The teacher consistently reports on student performance in a systematic way. The teacher utilizes appropriate technologies to report progress in meaningful ways to students, parents, and appropriate stakeholders. The teacher reports formative and summative results to clearly articulate learning gains. The teacher uses sound judgment in reporting student performance to stakeholders. The teacher proactively uses the reporting process to set ongoing goals for continued growth and achievement.	The teacher consistently reports both whole group and individual student performance based on learning outcomes aligned to student academic standards. The teacher has a system of reporting and communicating results to multiple stakeholders. The teacher reports formative and summative results to clearly articulate learning gains and areas for needed focus. The teacher uses sound judgment in reporting student performance to stakeholders. The reporting of results is used in the process of analysis that links back to instruction and learning goals. Technology is used to analyze and provide meaningful displays of data.

**BEST Teaching Standards Assessment Rubric
Collaboration**

Criteria	Unsatisfactory Performance	Developing Performance	Standard Performance	Proficient Performance	Master Performance
1. Interacts with school, classroom, and individual goals.	The teacher has minimal interactions with students to promote goals.	The teacher interacts with students to promote goals based on the school's required expectations for goal development.	The teacher clearly articulates school, classroom, and individual student goals and interacts with students in a variety of ways to promote these goals.	The teacher interacts and collaborates with students in a variety of ways to promote school, classroom, and individual goals. The teacher integrates these goals into a cohesive plan for individual students. The teacher measures these goals and engages with the students to assess their gains in meeting the goals.	The teacher interacts with students in a variety of ways to reach school, classroom, and individual goals. The teacher has established a systematic means for the students to become involved in and active members of a learning community that uses rigorous inquiry and problem-solving to reach specified goals to enhance the education system and enhance individual learning. There is evidence of goal attainment through measurements.
2. Works with parents to promote student learning.	The teacher communicates minimally with the students' parents or guardians.	The teacher adheres to the school's required parent(s) or guardian(s) communication policy.	The teacher systematically communicates with parent(s) or guardian(s) about the classroom instructional program and a bout student progress, and involves the parent(s) or guardian(s) in the plan for student learning. The teacher utilizes appropriate technologies for communications.	The teacher collaborates with the parent(s) or guardian(s) and community as appropriate to enhance the classroom instructional program and specific student performance. A solid partnership exists for the ultimate goal of student growth. The teacher utilizes appropriate technologies for communications.	The teacher seeks ways to take advantage of parent, guardian, and community partner experiences and insights, and incorporates these into the learning community. Technology is used to enhance communications and involvement. A clear communication plan is enacted for reciprocal communication and involvement to directly impact student performance. Student achievement is evident and measured.
3. Collaborates with educational colleagues to achieve district, school, classroom, and individual student goals.	The teacher collaborates minimally with educational colleagues.	The teacher works and plans as directed with colleagues to address district, school, classroom, and/or individual student goals.	The teacher collaborates with educational colleagues to meet the needs and goals of the district, school, classroom, and individual students. The teacher collaborates with a focus on student learning and achievement.	The teacher seeks opportunities to work and plan with colleagues to meet the needs and goals of the district, school, classroom, and individual students. The teacher routinely collaborates with colleagues to improve the instructional program in the grade level, department, or course, and to meet individual student learning objectives. The teacher is engaged in initiatives that seek to improve the school or district educational system.	The teacher is engaged in collaborations that have a direct impact to students in the classroom. The teacher is recognized as a member of a larger learning community with responsibilities that extend beyond the classroom, including responsibility to shape a professional culture in their educational system. The teacher collaborates with colleagues as a means of contributing to the intellectual life of the school, strengthening instructional strategies and practices, and designing and implementing new initiatives. The teacher is a leader in creating change and reform that leads to higher student academic achievement. Measurement of the goals is evidenced. The teacher disseminates research and practice for the benefit of educators.
4. Partners with community for resources and services.	The teacher partners minimally or not at all with the community for resources and services.	The teacher occasionally interacts with the larger community for the purpose of enhancing education.	The teacher partners with members of the community for resources and services to enhance instruction and student learning.	The teacher seeks out and routinely uses established partnerships in the community for resources and services to enhance instruction and student learning. Meaningful partnerships provide influence on students' current and future success. Evidence shows the correlation between services and student advancement in learning.	The teacher shows measured evidence of benefit to teaching and student learning from meaningful partnerships with the community for resources and services. The teacher is recognized as a member of a larger community with responsibilities that extend beyond the classroom. The teacher collaborates with the community as a means of contributing to the educational system. The teacher is a leader in creating change and reform that leads to higher student academic achievement.

**BEST Teaching Standards Assessment Rubric
Professional Development**

Indicators	Unsatisfactory Performance	Developing Performance	Standard Performance	Proficient Performance	Master Performance
1. Designs a professional development plan.	The teacher has an insufficient or no professional development plan.	The teacher has set goals for professional learning and development. There is little congruence with identified general and/or specific goals and a formal professional development plan.	The teacher develops a professional development plan. The plan is based on district or school goals, evaluator feedback, and specific and individualized goals for professional growth for self and goals related to students' learning and development.	The teacher designs a professional development plan that includes developing support structures, specific outcomes, learning designs, and resources. There is evidence of individual growth and development, and outcomes of this growth and development aligned to impact in education. The teacher identifies short-term and long-term goals and action steps for professional learning and for student learning.	The teacher develops a professional development plan that continually extends knowledge and improves teaching practice. The teacher takes responsibility for professional growth by creating an ongoing cycle of analysis and reflection with multiple sources of data related to learning. The teacher measures the link between the professional learning and development and student learning. The teacher shows evidence that the professional development plan is an active document with ongoing measures of progress.
2. Practices ongoing reflective process.	The teacher engages minimally in self-assessment or reflection.	The teacher engages in reflections that focus primarily on either teacher needs or student behavior and completion of work.	The teacher practices ongoing reflective process by describing, analyzing, and applying learning in focused areas of instruction and student learning. The teacher engages with communities in research and practice. The teacher reflects on instruction related to student learning, utilizing both effective and ineffective examples to improve future instruction. The teacher modifies and adjusts instruction and learning opportunities for students. The teacher reflects on student needs, aligns plans to meet these needs, and shows evidence of student growth.	The teacher practices ongoing reflective process by describing, analyzing, and applying learning in focused areas of instruction and student learning. The teacher engages in reflections in multiple and diverse ways. The teacher self-reflects on strengths and weaknesses and makes deliberate plans for growth and development in needed areas. The teacher assesses student work in progress and final work products. The teacher reflections demonstrate insight into current research in teaching and learning. The teacher measures impact of reflective practice to change in teacher behaviors and student learning.	The teacher practices ongoing and effective reflective process by describing, analyzing, and applying learning in focused areas of instruction and student learning. The teacher engages in reflections in multiple and diverse ways. The teacher self-reflects on strengths and weaknesses and makes deliberate plans for growth and development in needed areas. The teacher assesses student work in progress and final work products. The teacher reflections demonstrate insight into current research in teaching and learning. The teacher measures impact of reflective practice to change in teacher behaviors and student learning.
3. Engages in activities relevant to teacher impact on student learning.	The teacher engages minimally in activities relevant to teacher impact on student learning.	The teacher engages in activities that are relevant to teacher impact on student learning, with minimal application.	The teacher engages in activities relevant to teacher impact on student learning. The teacher articulates connection between instruction and student learning, and applies in context.	The teacher engages in activities relevant to teacher impact on student learning. The teacher is an active learner and applies information to the context of teaching and learning in the classroom. The applications are supported within the learning community. The teacher measures progress.	The teacher is a leader in activities relevant to teacher impact on student learning. The teacher plans activities to change and reform education in ways that make a measurable difference in student learning outcomes. The teacher models these initiatives and measures impact. Evidences show student learning gains.
4. Documents professional growth in relationship to the teaching standards.	The teacher has little or no documentation of professional growth in relation to the teaching standards or specified expectations in teaching.	The teacher documents professional growth in relation to the teaching standards or specified expectations in teaching. The documentation shows limited evidence of knowledge or effective practice.	The teacher documents professional growth in relation to research-based standards in teaching. Technology-based tools are utilized to demonstrate growth and areas of proficiency. The teacher systematically documents growth through meaningful reflections of professional practice, collection of artifacts, and evidence of professional development. There is evidence of innovative thinking to create positive change. Evidence shows connections between teacher growth and performance gains of students.	The teacher documents professional growth in relation to research-based standards in teaching. Technology-based tools are utilized to demonstrate growth and areas of proficiency. The teacher systematically documents growth through meaningful reflections of professional practice, collection of artifacts, and evidence of professional development. There is evidence of innovative thinking to create positive change. Evidence shows connections between teacher growth and performance gains of students.	The teacher maintains a complete professional portfolio demonstrating professional growth in research-based standards in teaching. The portfolio is a progressive document that includes reflection on the teacher's professional practice. The teacher shows both growth in and mastery of competencies related to effective teaching and learning. Student impact is evidenced. The teacher is a leader in using this documentation of growth to evaluate professional learning and influence the greater education system and individual teachers in their professional growth and development.

APPENDIX J

BEST COACHING FORM (PAPER-BASED VERSION)

BEST Coaching

District: _____ School: _____

Teacher: _____ Years of Experience: _____ Grade Level(s): _____

Content Area(s): _____ Length of Observation (minutes): 15 30

Instructional Coach: _____ 45 60

75 90

Outcomes for Coaching Session

Strength	Teaching Standard	Evidence in Teaching Practice	Impact to Student Achievement
	<input type="checkbox"/> Content Knowledge <input type="checkbox"/> Professional Knowledge <input type="checkbox"/> Instructional Design <input type="checkbox"/> Instruction <input type="checkbox"/> Management <input type="checkbox"/> Assessment <input type="checkbox"/> Collaboration <input type="checkbox"/> Professional Development		
Growth Goal	Teaching Standard	Evidence of Need	Impact to Student Achievement
	<input type="checkbox"/> Content Knowledge <input type="checkbox"/> Professional Knowledge <input type="checkbox"/> Instructional Design <input type="checkbox"/> Instruction <input type="checkbox"/> Management <input type="checkbox"/> Assessment <input type="checkbox"/> Collaboration <input type="checkbox"/> Professional Development		

Action Plan

Notes/Follow-up	
Teacher	Coach

APPENDIX K

BEST RECORD FORM (PAPER-BASED VERSION)

BEST Record

District: _____ School: _____

Teacher: _____

Section A

Years of Experience: _____ Grade Level(s): _____ Content Area(s): _____

Section B

Length of Assessment (minutes): 15 30 45 60 75 90

Type of Interaction: Walk-Through Full Lesson Observation Conference Other

Content Area Observed: _____

Section C

Teaching Standard: Area of Strength

- Content Knowledge
- Professional Knowledge
- Instructional Design
- Instruction
- Management
- Assessment
- Collaboration
- Professional Development

Teaching Standard: Area for Growth

- Content Knowledge
- Professional Knowledge
- Instructional Design
- Instruction
- Management
- Assessment
- Collaboration
- Professional Development

Section D

Notes/Follow-up:

APPENDIX L
IRB APPROVAL LETTER

To: Gary Bitter
EDB

From: *fus* Mark Roosa, Chair *MR*
Soc Beh IRB

Date: 01/25/2013

Committee Action: Exemption Granted

IRB Action Date: 01/25/2013

IRB Protocol #: 1301008727

Study Title: Impact of Video Evidence on the Coaching Process of In-Service Teachers

The above-referenced protocol is considered exempt after review by the Institutional Review Board pursuant to Federal regulations, 45 CFR Part 46.101(b)(1) (2) .

This part of the federal regulations requires that the information be recorded by investigators in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects. It is necessary that the information obtained not be such that if disclosed outside the research, it could reasonably place the subjects at risk of criminal or civil liability, or be damaging to the subjects' financial standing, employability, or reputation.

You should retain a copy of this letter for your records.