Implementing a K-12 Train the Trainer Professional Development Model

Through the School Improvement Grant

by

Michele Pollnow

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

Approved April 2012 by the
Graduate Supervisory Committee:

Oscar Jimenez-Castellanos, Chair
Margarita Jimenez-Silva
Susan Williams

ARIZONA STATE UNIVERSITY

May 2012

ABSTRACT

Effective professional development has been shown to improve instruction and increase student academic achievement. The Train the Trainer professional development model is often chosen by the state Department of Education for its efficiency and cost effectiveness of delivering training to schools and districts widely distributed throughout the state. This is a study of the Train the Trainer component of an innovative K12 professional development model designed to meet the needs of the state's lowest performing schools that served some of the state's most marginalized students. Pursuing a Vygotzkian social constructivist framework, the model was developed and informed by its stakeholders, providing training that was collaborative, job-embedded, ongoing, and continuously adapted to meet the needs of the School Improvement Grant participants. Schools in the multi-case study were awarded the federal ARRA School Improvement Grant in 2010. Focus questions include: "What influence does the Train the Trainer component have on classroom instruction specifically as it relates to formative assessment?" and "To what extent does the trainer support the implementation of the Train the Trainer professional development at the classroom level?" The action research study took place from August 2011 to February 2012 and used a mixed-methods research design.

DEDICATION

This work is dedicated to my family, especially to my husband Dave and daughter Meag. When I chose this road for myself, little did I know that I would need so much from them to complete the journey. Thank you for the times when you told me to breathe. Thank you for the your support and encouragement to take each step along the way

I also dedicate my work to my parents, John and Mary Louise Kraynak who instilled in their children a sense that we could do anything if we were willing to work for it. I am thankful for my aunt, Geri Borgen, who first introduced all of the "cousins" to the art, the joy, and the dedication required to teach. She was our role model, the perfect teacher. I am grateful to my uncle, Jim Borgen, and the emphasis he always place on the value of a good education.

And to Grandpa and Grammy, with me in spirit, who always wanted more for their children and grandchildren and to whom I have prayed many times when I thought I had reached my limit.

You are all the reason I was able to complete this work and the reason I stand here prepared for the next great adventure.

ACKNOWLEDGMENTS

I want to thank the participants of the study, who welcomed me into their classrooms and gave of their time to answer surveys, questionnaires, and interviews--all for the sake of research and improving education for their students and the profession.

I especially thank my colleague, Linda Roman, who acted in the role of editor at times and helped keep me true to the story. I thank Dr. Margaret Heritage, Teri Regan, and Oran Tkatchov who were instrumental as the team involved in designing the innovation and who lent their expertise and patience as modifications were implemented along the way. I also thank Roberta Alley and Angela Denning at the state department of education whose support enabled me to complete the study and thus my dissertation.

Finally, I thank my chairs, Dr. Oscar Jimenez-Castellanos, Dr. Margarita Jimenez-Silva, and Dr. Nan Williams for their countless hours of guidance through a forest of revisions. They have encouraged and pushed me towards a standard of excellence, and this degree is all the more meaningful because of them.

TABLE OF CONTENTS

Page

CHAPTER Page

LIST OF TABLES

Table Page

LIST OF FIGURES

Figure Page

Chapter 1 - Introduction

> If we are to put an end to stubborn cycles of poverty and social failure and put our country on track for long-term economic prosperity, we must address the needs of children who have long been ignored and marginalized in chronically low-achieving schools. States and school districts have an opportunity to put unprecedented resources toward reforms that would increase graduation rates, reduce dropout rates, and improve teacher quality for all students, and particularly for children who most need good teaching in order to catch up. (Duncan, as cited in Lui & Shea, 2010).

When the Obama Administration took office in early 2009, Arne Duncan was named Secretary of Education. New policies regarding educational reform took shape in a national climate of an economic crisis. The Secretary used section 1003(g) of the Elementary and Secondary Education Act in 2009 to provide targeted funding to America's persistently lowest achieving schools through a new School Improvement Grant (SIG). State Education Associations (SEAs) were to administer the School Improvement Grants and provide whatever assistance was necessary to help ailing districts and schools provide a high quality education to the many marginalized children they served (Perlman & Redding, 2009).

SEAs were required to provide professional development to ensure that the newly awarded districts had the skills and knowledge regarding reform strategies necessary to lead their schools to success (Perlman & Redding, 2009).

SEAs throughout the country quickly began to design professional development programs to train administrators and teachers in the schools they served.

The Turnaround Leadership Institute Professional Development Model

Arizona's School Improvement (SI) team quickly designed one-day professional development workshops that began in August 2010 and named the workshops a Turnaround Leadership Institute (TLI). Leadership from the SIG schools would attend the workshops and then leadership was expected to in turn train staff back at their sites. The TLI was aligned to the federal School Improvement Grant guidelines; however, by the end of the year, it was clear that the institute was not meeting the expectations for the state or the expectations of the stakeholders it served. Fullen (1991), Reitzug (2002), and Sparks (2002) assert that in order for professional development to make a difference in reform or turnaround efforts, the training should not only be continuous, but also needs to be job-embedded, data driven, and targeted to the specific needs of students and staff. These same criteria for effective professional development in reform or turnaround efforts surfaced as participants' wants and needs were analyzed in data gathered through TLI evaluations.

Concerns Regarding the Turnaround Leadership Institute

As early as December 2010, evaluations revealed that SIG leadership and educators had several issues with the monthly one-day workshops. Some participants reported frustration over topics that they believed were not pertinent to their contexts. According to the TLI evaluations, many participants believed that the professional development they received did not provide the understanding

and knowledge needed to train teachers back at their sites. In addition, SI staff, who conducted walk-through observations reported observing very little of the TLI best-practice strategies in teacher behaviors at the classroom practice level. TLI Evaluation data also revealed that almost all of the participants complained that there was not enough time to discuss the successes and challenges of implementing the grant with fellow colleagues and wanted more collaboration time.

Further, from the TLI Evaluation comments, many participants also expressed frustration with time spent away from their buildings and classrooms. Some participants' responses focused on the very long distances they drove to attend the monthly workshop day. Participants commented on costs in terms of instructional time that both leadership and teachers lost when they were away from buildings and classrooms. The lack of substitute teachers was a common hardship for rural and reservation schools. All of these issues served to drive the need for designing a new professional development model. It would be an innovative professional development model that would better serve all stakeholders while still building the capacity of leaders to lead necessary change in how schools do the business of education.

Developing an Innovative Professional Development Model

In January 2011, a SI team analyzed data from the TLI Evaluations, observation data, survey data, evaluation data, and interviews to create an innovative professional development model for the second year of the grant. The team's data analysis of multiple data points also led to determining formative

assessment as the professional development focus for the coming year. The SI team searched for a trainer who not only had expert knowledge in the formative assessment instructional process, but also had successful experience delivering training using a Train the Trainer component in rural states. The new Formative Assessment Professional Development Series was ready to implement before the start of the 2011-2012 school year.

My task, as a participatory action researcher, was to follow the implementation of the Train the Trainer model. My team and I collected data to answer the research questions: "What influence does the Train the Trainer element have on classroom instruction, specifically as it relates to formative assessment?" and "To what extent does the trainer support the implementation of the Train the Trainer professional development at the classroom level?"

A literature review was then conducted to inform the redesign of the professional development model for the following school year.

Chapter 2 - Literature Review

A Theoretical Framework for Professional Development

Professional development as viewed through a Vygotskian (1978) social constructivist lens is the process of "developing the knowledge of reality" through social interaction that is complex and occurs after lengthy involvement in authentic activity (Eun, 2008, p. 136). The learning experience should be collaborative, ongoing, goal directed, and meaningful to construct meaning and develop knowledge that is internalized (Vygotsky, 1987). These are the very criteria put forth by the experts when describing effective professional development models (Eun, 2008).

Within professional development there exists a relationship that is formed between the expert presenter, who Vygotsky (1978) would refer to as the More Knowledgeable Other (MKO), and the participants who seek the new learning (Eun, 2008). Vygotsky's (1978) theory defines the distance from the level where participants start when they first learn the new knowledge to the level that the participants achieve after learning the new knowledge as the Zone of Proximal Development (ZPD).

Eun (2008) proposes that Vygotsky's (1978) theoretical framework should not only be used in designing professional development models but used in planning the learning structures that will promote successful knowledge making experiences for participants. The language of social constructivist theory is present in the description of the models and the many definitions of professional development.

Professional Development Defined

Staff development, in-service, and training, are all terms used interchangeably with professional development (Garet, Porter, Desimone, Birman, &Yoon, 2001). One definition by Darling-Hammond and Mc Laughin (1995) defines professional development "as deepening teachers' understanding about the teaching/learning process and the students they teach which must begin with pre-service education and continue throughout a teacher's career" (p. 203). Guskey (2000) defines professional development in education as "those processes and activities designed to enhance the professional knowledge, skills, and attitudes of educators so that they in turn, improve the learning of students" (p.16).

Filtering the definitions through a social constructivist lens, professional development may be described as an educator's development that is ongoing and situated in an authentic context where the new meaning is co-constructed and internalized through social interactions with others (Darling-Hammond & McLaughin, 1995; Guskey, 2000). The "others" may include professors, experts, and colleagues, but also may include students, parents, or anyone that helps the professional construct new meaning (Eun, 2008; Vygotsky, 1978).

Delivery methods and platforms for professional development that provide opportunities for the new learning have been categorized by several experts into what is known as the seven major models of professional development (Drago-Severson, 1994; Guskey, 2000; Joyce & Showers, 1995;

Sparks & Loucks-Horsley, 1989). Table 1 provides a list of the models with the description of how experts define each model.

Table 1

The Seven Models of Professional Development

Model	Description
Training	Classic workshop often used to give an overview on a topic or topics to many participants at once
Observation/assessment	Administrators observe participants or peers who give feedback on their performance, participants' reflections drive change in practice
Improvement Process	Participants are asked to research, develop, and implement a program to bring about reform
Study Groups	Participants study and work together to solve an identified problem
Inquiry/Action Research	Participants improve their classroom practice by conducting action research
Individually Guided Study	Participant identifies an area of focus for personal growth and selects activities and assessments to foster own learning
Mentoring	Less experienced participants are matched with a master educator to develop a mutually beneficial relationship that will lead to a sharing of ideas and growth for both mentor and mentee

Note: Adapted from Guskey (2000)

Professional Development Through the Train the Trainer Model

The seven models may be combined to serve the needs of the targeted populations, and the mix of the models becomes part of the overall professional development plan that optimizes learning within the constraints of the allotted resources (Guskey, 2000). One of the most commonly used mixed models is the Train the Trainer Model. Although there is limited research, the Train the Trainer Model is preferred for its efficiency and cost effectiveness (Kaiser, Hester, Albert, & Whitmmen, 1995; Wedman, Wedman, & Klimczak, 1996). The Train the Trainer Model combines Guskey's first model, the Training Model (the new program or best practice delivered via a workshop), with the Mentoring Model where a master educator shares new learning and ideas with a less experienced educator (Albert, et al., 1996; Klimczak, et al., 1996).

Through the Train the Trainer Model, the new program or best practice is delivered in a workshop by an expert to a group of master educators and instructional leaders. The master educators and instructional leaders then deliver the knowledge and skills learned in the workshop back at their school sites. The Train the Trainer Model can be a cost effective way of delivering professional development to educators in a geographically diverse and rural state (Borko, Elliott, & Uchiyama, 2002). The master educators in the Train the Trainer Model not only deliver the professional development back at their site, but also act as mentor coaches for their less knowledgeable or inexperienced colleagues (Eun, 2008; Little, 1993; Ross, Rolheiser, & Hogaboam-Gray, 1999).

Although the Train the Trainer model is a recognized model extensively used in many professions, there are challenges inherent to the method of knowledge transfer utilized by the model (Campbell, Frances, Joly, Koh, Orfaly, & Whittemore, 2005). Campbell et al. (2005) note that a challenge may arise with fidelity of the message and program implementation, yet the greatest problem with the Train the Trainer model seems to be with trainers who simply fail to deliver the training to colleagues back at their sites (Christine, Hahn, Noland, & Rayens, 2002).

Coaching Support for Effective Professional Development

Different studies demonstrate that educators are more likely to implement new strategies when they have coaching and feedback accompanying their professional development (Joyce & Showers, 1995). Teachers and administrators whose professional development includes coaching are more likely to apply new ideas and concepts in their practice (Joyce & Showers, 1995; Neufeld & Roper, 2003). Joyce and Showers (2002) assert that teachers who work with coaches demonstrated a deeper understanding of the purposes and uses of the new strategies more than teachers who were not coached. Further, when training or professional development is accompanied by effective coaching, the transfer of knowledge and skills into the classroom practice increases to 80-95%, compared with 5-10 % without coaching (Joyce & Showers, 2002; Pollnow & Tkatchov, 2012).

There are certain skills such as listening, facilitating, and communicating that effective coaches should possess; however, individuals who are able to foster

trusting relationships seem to be the most effective coaches (Habegger & Hodanbosi, 2011; Pollnow & Tkatchov, 2012; Toll, 2005). Toll (2005) explains that effective coaches have developed "habits of actions and habits of mind" that lead to trusting and respectful relationships amongst colleagues and staff (p. 60). The Annenberg Institute for School Reform (2004) gives five promising indicators that effective coaching promotes:

1. collaborative, reflective practice;
2. embedded professional learning which promotes positive cultural change;
3. a focus on content and the use of data analysis to inform practice;
4. the implementation of learning and reciprocal accountability; and
5. collective, interconnected leadership across a school system.

Research indicates that when effective coaching supports are in place, there is a greater likelihood of successful reform outcomes (Elmore & Burney, 1997; Firestone & Martinez, 2007; Stein & D'Amico, 2002). In many cases, coaches are a key element in supporting job-embedded professional development of administrators and educators undertaking school reform (Elmore & Burney, 1997; Firestone & Martinez, 2007; Stein & D'Amico, 2002).

Professional Development in School Reform

In order for professional development to make a difference in reform efforts, it needs to be continuous, job-embedded, data driven, and targeted to the specific needs of students and staff (Fullen, 1991; Reitzug, 2002; Sparks, 2002). The One-Shot PD workshop model of professional development training selected

most often to bring about change in instruction is not an ideal model to use for schools that are attempting quick and dramatic school reform (Little, 1993). Too often, the One-Shot PD workshop model lacks the collaboration component that engages teachers in ongoing authentic inquiry and problem solving that suits the special conditions of school reform (Eun, 2008; Little, 1993).

Professional Development and Professional Learning Communities

Adding the component of professional learning communities to professional development can provide the collaboration and dialog seen as beneficial for school reform. Collaboration is the foundation of successful professional learning communities (DuFour, 2004). In recent years the definition of professional learning communities has become blurred and been used in education to signify anything from a book study group to a school department team (DuFour, 2004). Hord (2009) defines a professional learning community as "a group of responsible educators who are committed to and share a common purpose of continuous learning. The focus is not only on their own learning but often entails studying and acquiring whatever it takes to ensure their students are learning" (p.41).

Although there is much in the literature extolling the virtues of professional learning communities, there are some limitations. As with all groups at one time or another, professional learning communities may be subjected to "group think" where participants take the same position and are hesitant to accept novel or alternative ideas (Fielding, 1999; Giles & Hargreaves, 2006; Hord, 1987). In addition, the new learning that comes as a result of problem solving in

the professional learning community may be held within that professional learning community, rather than shared with the extended community of the school, district, or teaching profession at large (Fenwick, 2000; Giles & Hargreaves, 2006). Further, some professional learning communities have been criticized for following strict protocols and structures that limit socializing and friendships necessary for strong community building (Curry, 2008; Field, 1997; Giles & Hargreaves, 2006; Hargreaves, 1998; Mulford, 1998). Understanding these limitations may assist with effectively planning for successful professional learning communities.

The most successful structure to promote a professional learning community culture in schools requires leaders who support and initially lead the collaborative meetings (DuFour, 2004; Hord, 2009). The leadership both at the school and district level should also provide time and space for the professional learning communities to meet (DuFour, 2004; Hord, 2009). Student and school data should drive the professional learning community's study that includes data talks and problem solving (DuFour, 2004; Hord, 2009). Leadership must provide support and training to enable the members to access data and learn to work and use data with ease (DuFour, 2004; Hord, 2009). Finally, Hord (2009) recommends that the principal share leadership and designate a teacher leader to take charge of the data team. If those involved are committed to making it happen, the professional learning communities will become ensconced in the school's culture of learning (DuFour, 2004; Hord, 2009). This facilitates the shift

in thinking necessary from a focus on teaching to a focus on learning (DuFour, 2004).

Through dialog, the group is constantly checking for understanding and providing whatever collective scaffold is necessary to navigate through the ZPD (Vygotsky, 1978). Formative assessment, or those moments in teaching and learning when learning is assessed, is not only important for the professional teacher in their learning cycle, but also equally important for the teacher's instructional habits in the classroom.

Professional Development Focused on Formative Assessment

Most current definitions of effective professional development for those in the education field have as necessary components a focus on teaching and learning. Professional development should result in improved instruction and increased academic achievement (Guskey, 2000; Joyce & Showers, 1995; Learning Forward, 2011; Little, 1993). Formative assessment is integral to the teaching and learning process (Stiggins, 2006).

Formative assessment is defined as assessing for learning (Heritage, Kim, Vendlinski, & Herman, 2009). Many educators interpret assessment to mean standardized testing; however, assessment is also a part of the minute-to-minute, day-to-day teaching and learning in the classroom. Through formative assessment, teachers gather evidence that is used to give appropriate feedback and adjust instruction (Black & William, 1998; Heritage, et. al, 2009). Assessment assists both the teacher and student in truly knowing if the student has learned information (Heritage & Chen, 2006). Assessment provides the teacher with

evidence regarding the extent to which the student understands a concept as well as how well the teacher taught the concept and what adjustments the teacher might need to make in their teaching to accommodate the varying needs of students (Heritage et al., 2009).

Professional development in formative assessment must include conversation that helps participants come to a common understanding of assessment in general, and formative assessment specifically (Heritage et. al, 2009; Sadler, 1989; Stiggins, 2006). Effective professional development on formative assessment involves participants collaboratively looking and interpreting student data often in professional learning communities (Heritage et al., 2009). One way to increase opportunity for statewide collaboration through professional learning communities, no matter the geographic and economic challenges and with very little cost involved, is to use technology and develop online platforms.

Online Professional Development and Community Building

Technology can efficiently bring participants separated by great distances together in an online environment (Borko et al., 2002). The online environment affords an opportunity for professional learning community building that might not occur given the rural geography and distant locations of participating schools. Parr and Ward (2006) define an effective online learning community for professional educators as a group of members that post and discuss artifacts and resources from their practice online and find the collaboration and discourse around teaching and learning beneficial to their practice. Conrad (2005) explains

affective benefits of feelings of belonging and trust develop over time among the group in a continuous online professional learning community experience. Hunter (2002) describes the socially constructed learning in an online professional learning community as the process of the members learning from individuals with the group focused on topics of common interest or concern.

When developing a model for professional development that includes a professional learning community online feature, stakeholder teams need to consider the impact of technology on the professional learning community experience. Although online professional learning communities and distance learning are considered different learning models, there are some key ideas from the technology delivery of distance learning that may be transferred to the technology delivery of an online professional learning community. Just as social interaction was a key element in face-to-face learning, so was social interaction deemed important to the success of distance learning online courses (Zhao, Let, Yan, Lai, & Tan, 2005). The combination of both the elements of face-to-face and online was preferred over online interaction alone in the studies reviewed by Zhao et al. (2005). The participants who met in person prior to the online portion were better able to interact with both the instructor and other students during the online phase in various studies (Zhao et al., 2005). The combination of face-to-face and online interaction may also be important for an online professional learning community to make the social connections necessary for a successful online experience.

Further, Swan (2003) states the importance of intentionally planning for participants to interact with the content, each other, and the instructor in order to achieve successful learning outcomes. The online environment has the added benefit of connecting educators separated by hundreds of miles who may be in very similar contexts. Teachers are able to share instructional strategies or programs often-suited to similar underserved students populations faced with very comparable challenges (Swan, 2003).

Professional Development for Teachers of Underserved Populations

The preponderance of evidence is clear that of all variables within the classroom, teachers have the greatest effect on student learning (Hattie, 2009). The effect size may be positive or negative; however, the effect is even greater for students located in low socio-economic schools (Nye, Konstantopoulos, & Hedges, 2004). Nye et al. (2006) attribute this effect to the wide range of teacher quality in economically disadvantaged districts and schools. Ongoing professional development for teachers of these underserved students is seen as critical for improving teachers' instructional skills and content knowledge (Bain & Herman, 1987; Haycock, 1998).

One constraint of providing professional development to teachers of marginalized populations may be the lack of funding for these financially challenged districts and charters. Often there are limited resources and funding from the areas where schools with culturally and linguistically diverse students tend to be located (Hewson, Kahle, Scantlebury, & Davies, 2001; Kahle, Meece,

& Scantlebury, 2000; Knapp & Plecki, 2001; Spillane, Diamond, Walker, Halverson, & Jita, 2001).

Although there may be inequality in resources, there may also be a challenge with providing teachers the necessary training to work with data in order to identify learning gaps and provide instruction aimed at closing the achievement gaps. One goal of professional development for teachers of underserved student populations is linking effective instruction to an understanding of how to effectively use student assessment data (Bain & Herman, 1987). Teachers come to accept responsibility for the success of all students and are focused on the students' data to increase academic achievement. Collaborative meaning-making can only be successful if the participants are working together on an authentic, common goal oriented activity aimed at increasing their students' achievement (Eun, 2008; Little, 1993; Vygotsky, 1978).

Providing professional development to teachers of these underserved student populations is a commitment to equal education for all (Bain & Herman, 1987; Perlman & Redding, 2009). To prevent the inequities of our high needs schools, state systems and local education agencies must provide the highest quality professional development targeted to the needs of the teachers and students in marginalized populations (Perlman & Redding, 2009).

Chapter 3 - Innovation

Inspired to improve professional development for districts and schools and informed by the scholarly literature, the School Improvement team along with Dr. Margaret Heritage, an expert on Formative Assessment Professional Development from the Center on Research on Educational Standards and Student Testing, designed the new SIG Formative Assessment Professional Development Series. Based on data collected through surveys, observations, and focus groups conducted at the end of 2010, the 2011/12 SIG professional development focused on formative assessment and improving instruction at the classroom practice level. The revised model addressed the four major concerns from the Turnaround Leadership Institute:

1. The workshop topics were not informed by data, and therefore were not targeted to the needs of the SIG districts and schools.
2. At the workshops, there was not enough time for collaboration among the SIG administrators and educators to share successes and challenges in order to learn from each other.
3. There was a concern of participants with the cost of lost instructional time and the necessary financial resources to travel to and from the workshop location.
4. The strategies learned in the workshops by leadership often were not delivered to the SIG schoolteachers, and therefore were not implemented at the classroom practice level. Districts and schools

were not held accountable for the TLI's professional development delivered through the Train the Trainer component.

The New 2011/12 School Improvement Grant Formative Assessment Series

After analysis of the data and a review of the literature, the SI team and Dr. Margaret Heritage collaboratively designed the innovative School Improvement Grant Formative Assessment Professional Development Series. The following components were included in response to stakeholders' concerns with the original model.

Components of the Innovative Professional Development Model

Component 1 formative assessment/feedback cycle. The formative assessment/feedback cycle provided data to inform the professional development topics that targeted to participants' needs. The formative assessment cycle (CRESST, n.d.) is represented in Figure 1. The learning progression with learning goals and success criteria are determined and defined for the participants. Feedback drives the new and innovative SIG Formative Assessment Professional Development Series. Each session is informed by the feedback and adapted to meet the needs of the learners based on the predetermined success criteria to meet the learning goals of the training. This is the same process that trainers are training teachers to use in their own classroom practice through the train the trainer delivery component.

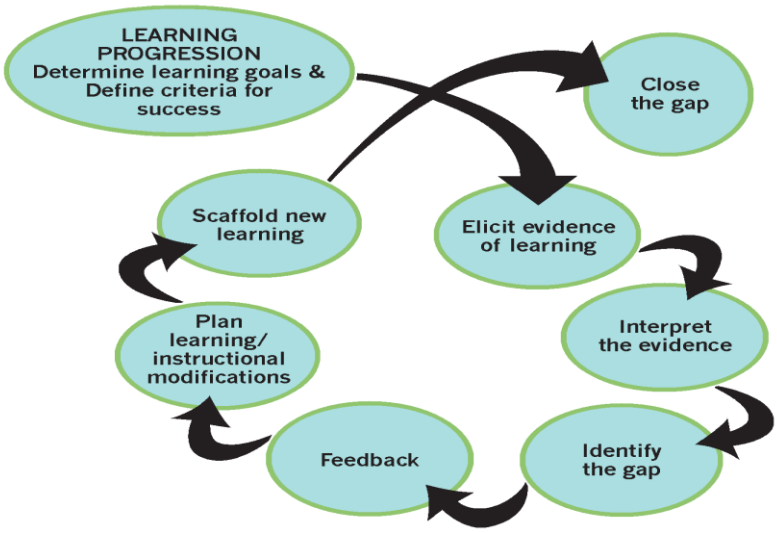

Figure 1. Formative assessment cycle for Innovative SIG Formative Assessment Professional Development Series. From CRESST. (n.d.).

Component 2 Professional Learning Community. The Professional Learning Community (PLC) component allowed for the Leadership Team, which included the trainers and teacher leaders, to connect face-to-face using an online environment through structured time and space. The PLC facilitated collaborative learning and the opportunity for networking, discussion, and sharing that the stakeholders found necessary throughout this geographically diverse state.

Component 3 web-based online platform. The web-based online platform not only provided a collaborative space for the PLC but also provided a space for discussing classroom artifacts and accessing resources. Trainers accessed materials necessary to deliver professional development training back at SIG sites. Trainers used the online environment to share how they solved

challenges and how they implemented the formative assessment training at their respective sites.

Component 4 Train the Trainer delivery. The Train the Trainer delivery component was selected as the vehicle for delivering the professional development to the SIG teachers. The trainers provided the job-embedded coaching to assist teachers as they embedded the new learning into the teachers' own practice. The Train the Trainer delivery component is represented in Figure 2. The expert (More Knowledgeable Other) delivers the professional development (PD) to the trainer participant and the expert elicits and gives feedback to inform instruction. The trainer in turn delivers the PD to the teachers, elicits feedback from, and gives feedback to, the teachers to inform the trainer's instruction. The trainer supports the teacher's implementation of the newly learned behaviors and strategies in the classroom.

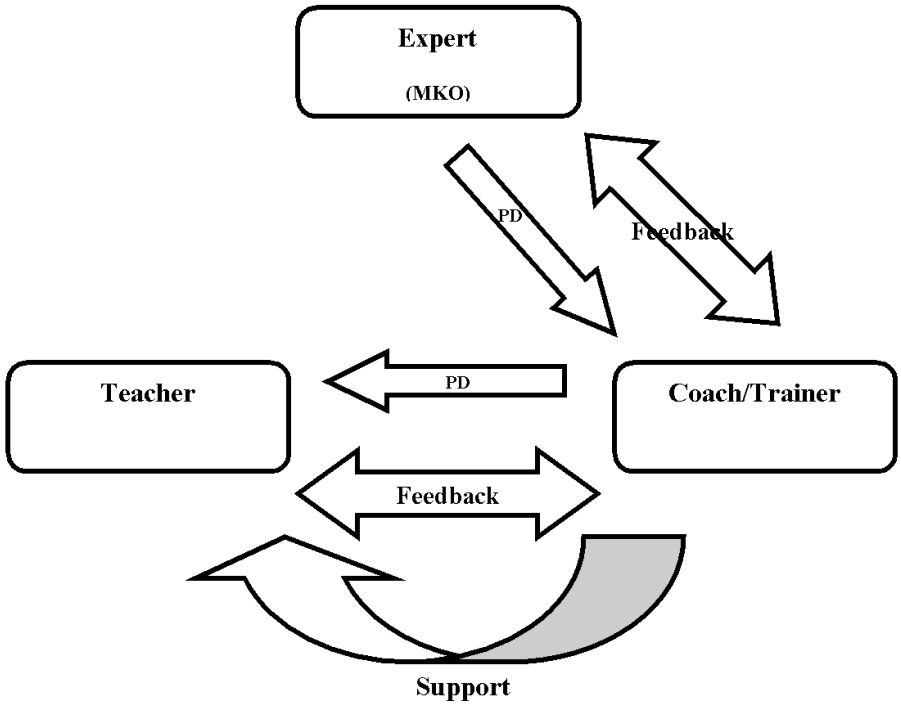

Figure 2. The Train the Trainer delivery component

Implementation of the New Formative Assessment Professional Development Series

The SI team designed and implemented the new School Improvement Grant Formative Assessment Professional Development Series for the 2011-2012 school year. This action research study focused only on the Train the Trainer component and sought to understand the Train the Trainer component more deeply. The action researcher gathered data to answer the research questions, "What influence does the Train the Trainer component have on classroom

instruction specifically as it relates to formative assessment?"and "To what extent does the trainer support the implementation of the Train the Trainer professional development at the classroom level?"

Implementation of the Train the Trainer Component

The Formative Assessment Professional Development Series was delivered in each region and involved the Train the Trainer component. Trainers learned the new content on formative assessment at the regional session and then delivered the training back at the site to educators. Additionally, the trainers supported and observed educators as the educators implemented the new learning in their classrooms.

Trainers were expected to:

1. Attend Formative Assessment Training Sessions.
2. Participate in an online and face-to-face PLC.
3. Understand, practice, and demonstrate formative assessment learning.
4. Deliver and facilitate the same formative assessment professional development at their sites to educators.
5. Observe, support, and coach educators to implement formative assessment learning in classroom practice.
6. Provide feedback on the Formative Assessment Professional Development through session evaluations, pre and post surveys, and questionnaires.

The implementation of the Formative Assessment Professional Development Series began in August 2011 with the delivery of an overview

session on formative assessment to the SIG Leadership Teams. The August workshop session was hosted in the central region of the state with participants from each school (principals, district support, trainers, coaches, and teacher leaders) in attendance. The purpose of the first session was to create a common language around formative assessment and the groundwork was laid for the professional learning community. Participants met each other and received a quick training on the use of the website. The participants reviewed and discussed information on formative assessment and then were given an assignment to post on the website.

Materials were posted online so that trainers were able to deliver the overview and begin conversations on formative assessment with their educators back at their respective school sites. From August through September, trainers were expected to deliver an overview of formative assessment to their staff. A formative assessment observation instrument, adapted from one developed by the expert consultant, was introduced to participants. Participants had the choice of using the instrument as written or integrating the observation criteria in instruments already in use at their sites. Most training actually did not begin until the October 2011.

The SIG PD Sessions took place through May of 2012; however, this study ended in January 2012. Figure 3 displays a graphic that shows the sequence and type of sessions that were held throughout the 2011-2012 school year. The arrows signify the feedback loops that allow for input from the stakeholders and timely modifications to be made in instruction and content modeling the concept

of formative assessment in action. Please see Chapter 4, Table 5 for the *Timeline for Research and Innovation Implementation.*

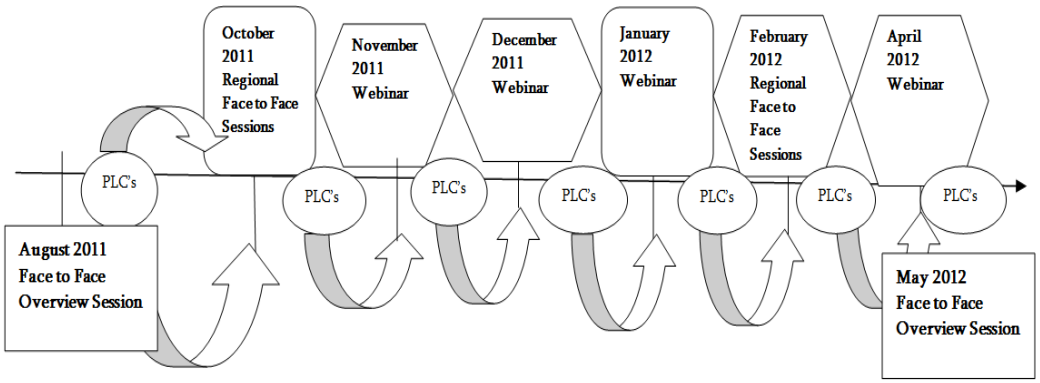

Figure 3. 2011-2012 New Formative Assessment PD Series Session schedule

Chapter 4 - Methodology

Chapter 4 includes an overview of the research design and explains the theoretical approach used to ground this action research study. There is a description of the quantitative and qualitative mixed methods employed in this multiple case study design. Chapter 4 also includes the purpose for the study, the research questions, descriptions of the participants & multiple settings, and the selection of schools for the cases. Finally, the chapter concludes with sections on data collection, data analysis, and the role as well as bias of the action researcher.

Overview of the Research Design

Following a social constructivist approach, the research design was a multiple case study that involved stakeholder participants in actions to construct meaning through joint analysis of data (Vygotsky, 1978). The participatory action research allowed for deeper explanations and illuminations of the impact of the phenomena in classroom practice (Stake, 1995). The action research study was conducted to answer the research questions:

1. What influence does the Train the Trainer component have on classroom instruction specifically as it relates to formative assessment?
2. To what extent does the trainer support the implementation of the Train the Trainer professional development at the classroom level?

The study participants jointly constructed a more profound meaning benefiting from the collaborative problem solving of the group (Eun, 2008; Little, 1993; Vygotsky, 1978). The multiple case study design benefited from the

different perspectives of the participants across five bounded sites (Stake, 1995) to examine the research questions.

Mixed-Methods Design

Rather than depending solely on a quantitative or qualitative method, both methods were combined in a mixed-methods study to examine the five case studies (Gay, Mills, & Airasian, 2009). The researcher/participant relied on multiple data sources to ensure elaborated triangulation that would lead to more trustworthy findings (Denzin, 1978; Guba,1990).

This action researcher's multiple case study followed an explanatory mixed-methods design (Gay et al., 2009). Quantitative and qualitative data were collected at the same time, yet quantitative data were analyzed first to inform the qualitative analysis. The explanatory method involved using data from multiple sources to allow for the possibility of greater illumination and deeper explanation of the Train the Trainer phenomena (Gay et al., 2009). The mixing of the quantitative and qualitative data in this way permitted the action researcher and research participants to gain insight throughout the study in order to inform the research design and the innovation.

The explanatory mixed-methods design is represented in Figure 4. The diagram shows quantitative and qualitative data collection taking place at the same time. Quantitative data were analyzed first to inform the qualitative analysis. Qualitative data analysis led to further quantitative data analysis. Qualitative data and quantitative data results were combined to provide for a deeper explanation that served to elucidate the phenomena and better answer the research questions,

"What influence does the Train the Trainer component have on classroom instruction specifically as it relates to formative assessment?" and "To what extent does the trainer support the implementation of the Train the Trainer professional development at the classroom level?"

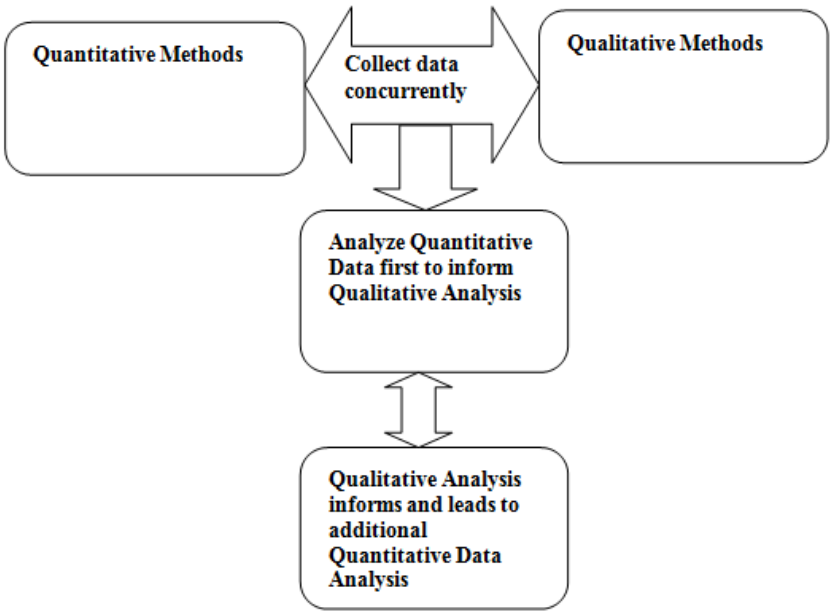

Figure 4. Concurrent explanatory mixed-methods design

Setting

According to Stringer (2007), action research

> …is based on localized studies that focus on the need to understand *how* things are happening, rather than *what* things are happening, and to understand the ways that stakeholders (the different people concerned with the issue) perceive, interpret, and respond to events…" (p.19)

One setting for this action research study was within a State Department of Education's School Improvement section. An additional setting was statewide within the persistently lowest achieving SIG schools awarded the grant and the final location was within the five schools selected for the multiple case study. The study began in the summer of 2011 as the School Improvement Unit began planning a new professional development model that would better serve the fourteen School Improvement Grant districts and charters awarded the SIG grant.

It is important to understand the local situations, demographics, and make-up of the districts and charters that were selected for the multi-case study. The five districts or charters included in the study were located in the northwest and central part of the state. Two districts identified themselves as rural schools yet had diverse student populations. One district identified itself as a reservation school with a 99.9% Native American student population. The two urban schools located within the capital city both had high Latino student populations.

All schools reported high percentages for free and reduced (FRE) lunch with most of the schools reporting a FRE of 90-100%. Please see Appendix B for the chart with all SIG school demographics.

Selection of the five SIG school sites for the initial multiple case study. The five schools were purposefully selected for the initial multiple case study. Stringer (2007) explains, unlike random selection that is common in quantitative studies, purposeful sampling is the strategy often used for qualitative and mixed-methods research design. Studying the phenomena situated in different contexts has hopefully led to a deeper understanding of the Train the Trainer phenomena.

The units of study for this research design were purposefully selected based on type of school--urban, rural, or reservation--that make up the population and also selected by grade levels served to allow for representation from high school, middle school, elementary school, and a unified school that serves K-12 (Gay et al., 2009).

Seventeen schools made up the original population that consisted of three rural, eight urban, and six reservation schools. The action researcher limited the initial multi-case study to five schools and then selected the two extreme cases from the five to allow for a deeper understanding of the impact of the Train the Trainer Model at the classroom level. Table 2 lists the schools and school types by locations and grades served in the initial multi-case sample.

Table 2

Five Initial Multi-Case Study Schools Demographic Profiles

School	District/ Charter	Type	Grades Served	Students
Site A	Charter	Urban	Grades 9-12	260
Site B	Charter	Urban	Grades K-5	305
Site C	District	Reservation	Grades K8	191
Site D	District	Rural	Grades 9-12	260
Site E	District	Rural	Grades K-12	340

Note. Source 2009 School Improvement Grant Applications

Selection of the final two unique cases for the cross case comparison. Grounded in social constructivist theory and employing a mixed-methods approach, the extreme cases were selected based on a triangulation multi-step quantitative and qualitative process. First, the pre and post results from the statewide survey were disaggregated by the initial five case studies using perception data from the teacher and trainer participants. Due to the wide variance in the quantitative results, qualitative data were used from the questionnaires to inform the selection through a triangulation of data from teacher responses, trainer responses, and principal responses. Finally, the researcher sought the expert opinion from the School Improvement team members most familiar with the five sites.

An SI team member specialist was assigned to a school awarded the SIG grant. Most SI team specialists visited the schools monthly and the specialist was responsible for progress monitoring of the implementation of the SIG grant. During progress monitoring visits, specialists observed classrooms with principals and coaches. At quarterly visits, the specialists conducted focus groups with various stakeholders in the school, which included teacher focus groups, trainer focus groups, and administrator focus groups. The specialists also sat at the trainers' tables and acted as facilitators in the face-to-face Formative Assessment Professional Development Series sessions. This intimate knowledge of each site and qualitative as well as quantitative data helped the researcher to determine the two extreme case study schools.

During conversations with SI members, the team discussed observation data, questionnaire data, focus group data, and the survey data from the initial multi-case study. The K-5 School B was chosen as the school making the most progress, and one of the 9-12 sites, School D, was chosen as the school making the least progress with the Formative Assessment Professional Development through the Train the Trainer delivery model. Participants from the various settings are described in the next section.

Case study protocol. The protocol for the case study is presented in the following section. The protocol includes objectives, field procedures, and a description of the case format. This led to a clearer description and analysis of the extreme case study comparison (Yin, 1994).

Objectives. There were two objectives for the Extreme Case Study. The first objective of the Extreme Case Study was to understand the systems of activities that led to greater success of the Train the Trainer-delivered formative assessment professional development and its influence on the increased use of formative assessment teacher behaviors at the exemplar school. Additionally the systems of activities that led to limited influence of the Train the Trainer-delivered formative assessment professional development on teachers' use of formative assessment behaviors in the unsuccessful school were studied (Yin, 1994).

The second objective was to understand the system of activities of support that led to the increase of formative assessment behaviors in the exemplar school,

and the system of activities of support that led to very little increase in the formative assessment behaviors at the challenged school.

Field procedures. Pre and post classroom observations were scheduled at least two weeks prior to the visit. The observation instrument used to collect data included the identical constructs of the statewide survey instrument which is described in the data collection and procedure section. The statewide survey was administered to collect data concerning teachers' perceived use of formative assessment behaviors in their classrooms. See Appendix C for the Statewide Survey. The Statewide Survey instrument had a coefficient of .977 indicating a high degree of reliability. The observation instrument was presented to the trainers at the initial face-to-face session in August 2011 and trainers were directed to share the instrument with teachers. Trainers were told to inform the teachers of the classroom observations and that the visit in September would be to gather baseline data. Since this was a federal grant, access to the schools was never a problem; however the researcher talked to each group of teachers before the visit to ensure that observations would be reported as summary data and that identities would be kept confidential.

Classroom observations were conducted by the participant action researcher in late September-early October 2011 and then again in late January 2012. There was a span of approximately four months from the time of the initial baseline observations conducted prior to the formative assessment training to the post observations. The formative assessment classroom observation instrument is described in the data collection and procedure section. See Appendix D.

Observation data were recorded by the action researcher in four ways. First, criteria/items observed were circled on the list under each of the five constructs. Evidence was recorded on the back of the instrument for each behavior observed. The teachers were then rated according to the rating scale mentioned in order to evaluate where the teacher was in his or her use of the formative assessment process based on the observation, notes, and evidence. Some scripting was recorded in either a notebook laptop or note pad.

Participants

There was a wide range of participants in the study. Participants included teachers, trainers, administrators, and district staff from throughout the state who self-selected for the statewide surveys and participated in the innovative Formative Assessment Professional Development Series. Included in this participant population were the teachers, trainers, administrators, and staff of the initial multi-case study and the final extreme case study. In addition to the case study participants, other participants included the formative assessment expert and the School Improvement team members that were described earlier.

Teacher participants. There were 266 teachers who were involved to some extent in the study from September 2011 through February 2012. Thirty-seven percent of the teachers taught in the urban schools, 26% in the rural schools, and 37% were teachers on the reservation schools.

The self-reporting demographics obtained from the teachers that responded in the statewide survey are shown in Table 3.

Table 3

Self-Reported Teacher Statewide Survey Demographics

Age	%	Gender	%	Years Experience	%	Locale	%
20-29	12.3	Male	34.6	0-3	17	Urban	26.7
30-39	21.0	Female	65.4	4-10	32	Rural	34.4
40-49	30.9			11-20	33	Reservation	38.9
50 and over	35.8			21+	16		

Leadership team and trainer participants. Participants from the stakeholder Leadership Teams included district or charter office administrators, school principals, trainers, data coaches, parent liaisons, teacher leaders, and teachers. According to Fraenkel and Wallen (2005), this was the accessible population, and from this, the action researcher studied subsets of the population of the five case study schools.

Due to the new professional development model's focus on the Train the Trainer component, the trainers were the main participants. The trainers had a dual role of both trainer and coach. The trainers delivered the professional development on formative assessment at their sites and also served as instructional coaches to help teachers implement the training in classroom practice. Please see Table 4 for the trainer profiles.

Table 4

Trainer Profiles

School	No. of Teachers	Location	Grades Served	Years Exp.	Age Gender
Site A	16	Urban	9-12	10	30-39 female
Site B	31	Urban	K-5	12	40-49 female
Site C	18	Reservation	K-8	21	50 or older female
Site D	10	Rural	9-12	24	50 or over female
Site E	34	Rural	K-12	9	20-29 female

School improvement team participants. Members of the State Education Agency School Improvement team along with his or her supervisors participated in the study. There were sixteen team members involved in the study to some extent. Eleven were females and this included the researcher as participant. Five members of the team were males. The SI participants had ten to twenty years experience as educators and most had served both as teacher and principal.

Formative assessment expert consultant participant. The formative assessment expert was internationally renowned and published for her research in assessment. The expert was experienced in the Train the Trainer component and in delivering training both online and face-to-face to geographically diverse

participants. The formative assessment expert had extensive experience with professional learning communities and job-embedded professional development targeted and informed by the feedback, had worked as a university professor, and served on the Center for Research on Evaluation, Standards, and Student Testing (CRESST) Research Team at UCLA.

Data Sources and Collection Procedures

Data were collected from all schools through pre and post surveys and through interviews from the SI specialist that served the schools. Data were collected from the five participating initial case study schools through pre and post classroom observations, questionnaires, a review of artifacts and documents, and through the action researcher's field notes and analytical memos. The surveys and classroom observations contained identical constructs based on criteria for formative assessment teacher behaviors. Table 5 below displays the timeline for data collection and the innovation implementation. The pre and post data collections were timed to allow for four months of site training through the Train the Trainer component of the innovative Formative Assessment Professional Development Series.

Table 5

Timeline for Research and Innovation Implementation 2011-2012

Aug	Innovation Formative Assessment PD Series begins Overview Session for Trainers
Aug	Pre statewide survey emailed to 266 teachers and 25 trainers
Sept	Pre classroom observations conducted initial 5 case study schools in 5 classrooms ea.
Oct	Regional Formative Assessment Training Sessions for trainers
Oct	T t T site trainings begin-Expectation at least monthly with coaching, observations, job-embedded
Nov	Webinar Formative Assessment Training Session for trainers
Dec	Webinar Formative Assessment Training Session for trainers
Jan	Webinar Formative Assessment Training Session for trainers
Jan	Email interviews to SI Specialists
Jan	Post classroom observations conducted initial 5 case study schools in 5 classrooms ea.
Jan	Post statewide survey emailed to 243 teachers and 46 trainers
Feb	Questionnaires emailed to principals, trainers, and teachers at the 5 case study schools
Feb	Regional Formative Assessment Training Sessions for trainers

Statewide surveys. The statewide survey was developed and co-constructed with the SI team and the formative assessment expert consultant who, as mentioned previously, was selected to help design and direct the innovative Formative Assessment Professional Development Series. The co-constructed

items were the learning goals for the course. The exact items were also embedded in the observation instrument that is described later in this section. See Appendix C.

Teacher participants and trainer participants self-selected to answer an online teacher survey and a trainer survey that were both developed and piloted in June 2011. The survey was based on a five item Likert scale (Spector, 1992) ranging from *strongly agree, agree, neither agree nor disagree, disagree,* to *strongly disagree* and included open-ended questions. For example, both surveys included identical questions that asked teacher participants to report how strongly they agreed that in his or her classroom "Learning goals are shared with students" and "Criteria for success is discussed with students through use of exemplars." Trainers were asked to select *strongly agree*, *agree*, *neither agree or disagree, disagree,* or *strongly disagree* if they observed the formative assessment behaviors and strategies in most of the classrooms at his or her site. The surveys included open response questions such as "Please share any other comments you may have concerning the use of formative assessment strategies," and "Use this space for any additional comments."

There was a demographics section at the end of the survey. Both sets of responses from the teacher survey and the trainer survey along with qualitative observation data were use for triangulation that helped to strengthen the analysis. The results and analysis of the data from the survey were used to inform qualitative data collection instruments such as the SI team email interview and the trainer, teacher, and administrator questionnaire.

The pre surveys were emailed to teachers and trainers from all participating schools statewide in September 2011. These data helped to establish a base line for the new formative assessment learning delivered though the Train the Trainer component. The pre survey was administered online through SurveyMonkey to gather self-reporting data to assist in analyzing "What influence does the Train the Trainer component have on classroom instruction specifically as it relates to formative assessment?" and "To what extent does the trainer support the implementation of the Train the Trainer professional development at the classroom level?"

The post survey was, as stated earlier, identical to the pre survey and administered online via SurveyMonkey to the teachers from all the schools in January 2012. The survey can be found in Appendix C.

Classroom observations. Classroom observations were important sources of data and assisted in building a more vivid picture and deeper understanding of the observed teacher behaviors (Stringer, 2007). Data were collected through classroom observations of the five case study schools using an observation instrument aligned with the Charlotte Danielson model (Danielson, 2007). The observation instrument was co-constructed with the SI team and expert formative assessment consultant.

The instrument was designed around and included the same formative assessment constructs that were in the surveys. The observation instrument was shared with leadership and trainers in the first session August 4th and 5th, 2011. Participants discussed the observation instrument's targeted teacher and student

classroom behaviors that were based on the formative assessment learning goals of the professional development sessions. Some examples included observing if the teacher "asked questions with wait time" or if "students were given a chance to use feedback in a timely manner."

The observation instrument not only included the formative assessment behavior construct but also included a rating scale. The scale included a *n/a* for *not observed/not applicable* (no elements observed), *0* for elements that *should have been present but were not*, *1* for *elements that are used inappropriately or ineffectively*, *2* for *elements that are used in a limited fashion*, *3* for *teacher is developing in use of elements*, *4 for teacher is proficient in use of elements*, and *5* for *teacher is exemplary in use of elements*. The instrument is available in Appendix D.

The classroom observation data were collected from the five case study sites by the action researcher in late September early October 2011 to establish baseline data before site trainings began. The protocol included at least a 20-30 minute observation in academic content areas. Qualitative data from the classroom observation served to inform the development of the SI team email interview questions and the trainer, teacher, administrator questionnaire questions.

The post observations, using the same protocol, were conducted the last two weeks of January 2012. The pre and post classroom observation data assisted in answering and analyzing the research questions.

Questionnaires. Interview/questionnaires were informed by the quantitative data from the pre survey and qualitative data from the pre

observations. The trainer, teacher, and administrator questionnaires were co-constructed and piloted by SI team members. The questionnaires were administered via SurveyMonkey in the first week of February 2012 to gather information such as "How many formative assessment trainings have your trainer or leadership delivered to teachers at your site?", and "Approximately how often have you been observed by your trainer for formative assessment behaviors in your classroom?"

The questionnaire included open-ended questions and Likert rating scales (Spector, 1992) including questions to gather data on the members' beliefs, attitudes, or motivations concerning the Train the Trainer component. Data collected through the questionnaires helped answer the research questions, "What influence does the Train the Trainer component have on classroom instruction specifically as it relates to formative assessment?" and "To what extent does the trainer support the implementation of the Train the Trainer professional development at the classroom level?"

Questionnaires were administered to trainers, teachers, and administrators in February 2012 to answer questions "What influence does the Train the Trainer component have on classroom instruction specifically as it relates to formative assessment?" and "To what extent does the trainer support the implementation of the Train the Trainer professional development at the classroom level?" (Please see Appendix F, G, and H.)

School Improvement Team member email interviews. School Improvement Team members, as discussed previously, were education specialists

who were assigned schools awarded the SIG grant. The specialists in the quarterly teacher, trainer, and administrator focus groups asked questions concerning the professional development at each school. It was important to gather perception data from the SI team members who were very familiar with the schools he or she served.

The SI team email open-ended interview was informed by the quantitative and qualitative data from the pre survey and qualitative data from the pre observations. Email interviews are often selected in lieu of face-to-face interview when technology is readily available (Gay et al., 2009). In the literature concerning email Interviews, security of the email was mentioned as an issue; however the SI team employed by the Department of Education must abide by the DOE's confidentiality codes and procedures.

The interview questions were co-constructed with a SI team member. The questions that addressed the Train the Trainer model include, "In what ways do you feel the Train the Trainer component has influenced the districts and schools that you serve?" and "How do you perceive the teachers implementing the leaning from the Formative Assessment Professional Development in the classroom at the districts and charters you assist?" The email interview was sent to all eight School Improvement specialists and five out of the eight responded. The team members were told in the email that if they wished to remain anonymous, they could print out the interview questions and return them in a plain envelope via the department's interoffice mail.

All questions in the email interview were open-ended such as “How do you perceive the teachers implementing the learning from the Formative Assessment Professional Development in the classrooms at the district or charters you assist?” and “In what ways do you feel the Train the Trainer component to deliver formative assessment professional development has impacted the districts and schools that you serve?” Responses to the interview questions assisted in analyzing the research questions.

Review of documents, artifacts, researcher field notes, and memos. Documents, artifacts, and researcher memos were reviewed in order to answer the research questions. These data were used for triangulation to help strengthen the case analysis (Stake, 1995). The analysis of these data assisted with a greater illumination and understanding of the phenomena of the Train the Trainer model professional development implementation at the practice level across all five cases.

Table 6

Data Collection Matrix

Measure	Quantitative/Qualitative	Time
Pre/ Post statewide surveys	Both: Likert /Open-ended	Sept11–Jan12
Pre/Post classroom observations	Both: Rating /Open-ended	Sept 11–Jan12
Interviews	Qualitative	Jan-12
Questionnaires	Both: Likert/Open-ended	Feb-12
Review of documents & artifacts	Qualitative	Sept 12-Feb12
Research field notes & memos	Qualitative	Aug11-Feb12

Table 6 includes the instruments that were used to gather data, whether quantitative or qualitative data was collected, and the timeframe when the data was collected.

Data Analysis

There were six categories of data collection including pre and post surveys, pre and post classroom observations, interview/questionnaires, progress monitoring document review, and research journal and analytical memos.

The quantitative data was tabulated and visually represented in graphs and charts. Demographic data and the Likert scale questions were tabulated and

analyzed using the Statistical Package for Social Sciences (SPSS) Version 18. Basic descriptives for mean, standard deviation, and frequency were performed in the data analysis process. *T*-tests were conducted to compare independent samples and compute significance.

Qualitative data were coded and categorized according to grounded theory utilizing both open coding and axial coding. Open coding was used as the process of constructing themes through review of data. Axial coding was used to construct themes in terms of different dimensions (Fraenkel & Wallen, 2005). The procedures for coding qualitative were adapted from Stringer (2007) and included: (1)Reviewing the collected data, (2)Unitizing the data, (3)Categorizing and coding, (4)Identifying themes, (5)Developing a report framework, and (6)Revisiting data for additional read-throughs and coding (p.99).

Quantitative analysis. Demographic data and the Likert scale questions were tabulated and analyzed using the Statistical Package for Social Sciences (SPSS) Version 18. Mean, standard deviation, and frequency were computed in the data analysis process. A construct-by-construct analysis on the pre and post teacher surveys was conducted using independent *t*-tests (participants self-selected for both pre and post surveys) using SPSS Version 18 to determine if there was any significant increase or decrease in the perception of teacher's use of formative assessment behaviors in his or her classrooms. The same analysis was conducted on the trainers' pre and post surveys to determine if there was any significant increase or decrease in the trainers' perception of observation of the same formative assessment behaviors used by most teachers at the site.

A construct-by-construct analysis comparing the pre and post teachers' surveys with the pre and post trainers' surveys was conducted using independent *t* -tests on SPSS Version 18 since the samples were from the same populations, yet somewhat different teachers responded. The independent *t*-tests helped to determine if there was any significant difference between the perception of teachers' use of formative assessment behaviors in his or her classroom and the trainers' perception of observations of the same formative assessment behaviors used by most teachers at the site.

Mean and frequency were computed in the data analysis process for the quantitative data from pre and post classroom observations. A construct-by-construct analysis comparing the pre and post classroom observation frequency and rating scale results for teacher effectiveness was conducted for cross case comparisons.

Qualitative analysis. Qualitative data from the open-ended questions on the pre and post statewide surveys, pre and post observations, SI team specialists' interviews, principals', teachers', and trainers' questionnaires, Progress Monitoring document, and artifacts review were categorized and coded using grounded theory and Stringer's (2007) procedures outlined previously. Open coding and axial coding were both used to construct themes (Fraenkel & Wallen, 2007). Themes that emerged from these data were used to create categories for the cross case comparison analysis (Gay et al., 2009; Miles & Huberman, 1994).

Mixing of quantitative and qualitative data. The quantitative data were combined with the qualitative data to provide a deeper understanding and

illumination of the Train the Trainer phenomena in terms of the context of the case studies. These data were used for triangulation as the researcher looked for a convergence or divergence of across the extreme case comparison.

Reliability/Credibility/Validity/Trust

Triangulation. Stringer (2007) says, "The credibility of the study is enhanced when multiple sources of information are incorporated" (p. 58). Stake (1995) asserts that "multiple perspectives" tend to lead to a clearer perception of the phenomena being studied. Gay et al. (2009) state, "triangulation is a primary way that qualitative researchers ensure trustworthiness (i.e., validity) of these data" (p.408). In this action research study there was a convergence of five quantitative and qualitative data sources to strengthen the credibility of the multiple case study. Pre and post surveys provided the quantitative data. Surveys, questionnaires, observations, the document review, and action researcher journal notes provided the qualitative data. Grounded theory (Fraenkel & Wallen, 2005) and the social constructivist approach formed the theoretical framework through which multiple data sources and points of view were used to ensure elaborated triangulation (Denzin, 1978).

Validity. According to Fraenkel and Wallen (2005), it is important that the data collected are appropriate, meaningful, and support any inferences made by the researcher. Does the instrument measure what it is supposed to measure? The instruments used in this study were tested, revised, and tested again using at least two test groups to ensure validity.

Reliability. Reliability refers to "the degree to which an instrument consistently measures whatever it is measuring" (Gay et al., 2009, p. 158). All instruments were piloted using at least two groups and the Cronbach Alpha (Cronbach, 1951) was used on instruments to find the numerical coefficient of reliability to measure each construct evaluated against a .7 coefficient.

Member checking. "Member checking, also known as respondent validation, allows participants to review findings from the data analysis in order to confirm or challenge accuracy of work" (Horsburgh, 2003; Johnson and Waterfield, 2004; Lietz, Langer, & Furman, 2006, p. 453; Lincoln and Guba, 1985). This is an effective way to increase the trustworthiness of the action research (Lietz et al., 2006). Member checking was utilized in the data analysis phases of the action research to ensure the reliability of the data. SI team participants and trainer participants reviewed data to ensure the authenticity of the meaning and interpretation. This led to perhaps a more accurate interpretation of the data.

Researcher role. My role as a participant researcher involved different responsibilities throughout the study. In the midst of the professional development sessions, I was a researcher observer as I wrote field notes and analytical memos while I was observing the training unfold. At times in the sessions, I acted as facilitator at the tables among the trainer participants. I discussed challenges trainers faced at the site and offered suggestions at times.

Trainers began sending materials to me to post on the website to share with colleagues so I helped managed the website as well, while reviewing the documents as data to inform the study.

I acted as a member of the School Improvement team on monthly progress monitoring visits, yet also acted as a researcher when I observed teachers in classrooms. I acted as a colleague as we analyzed data from each session to inform subsequent professional development sessions. I made it a point to be conscious of my role as a researcher participant and strove to remind myself of possible bias throughout the study (Stringer, 2007). To reduce bias, I used member checking throughout the study.

Chapter 5 - Results and Analysis

This chapter presents the results and analysis organized into three sections to assist in answering Research Question 1, "What influence does the Train the Trainer model have on classroom instruction specifically as it relates to formative assessment?" and Research Question 2, "To what extent does the trainer support the implementation of the Train the Trainer professional development at the classroom level?"

The first section outlines the statewide survey results and presents the information regarding reliability, results, and analysis of the pre and post survey emailed to all SIG teachers and trainers participating in the Formative Assessment Professional Development Series. The section also describes the process used to select the two unique cases for the final case comparison study.

The second section presents the quantitative and qualitative data from the pre and post classroom observations, and qualitative data from email interviews, the principal, trainer, and teacher questionnaires, and review of formative assessment course artifacts and Progress Monitoring Report documents. These data were analyzed to answer both research questions and the analysis informed the selection of the final two unique cases.

The third section presents the cross case comparison of the two unique schools. One site was selected for its success and the second site was selected as appearing to have the least success with implementation of the formative assessment behaviors at the classroom level. Data from the instruments mentioned were triangulated to conduct the case comparison study.

Statewide Survey Results and Interpretation

In this section, there is a description of the process used to develop the survey and the reliability test is presented using the Cronbach Alpha. An analysis of the quantitative data and qualitative data from the statewide survey follows. The quantitative results are presented with an interpretation. The qualitative results are presented with an interpretation through the three themes that emerged in the analysis: Theme 1 the Train the Trainer Influence, Theme 2 the Trainer Skills Influence, and Theme 3 the Support Influence.

Statewide survey reliability. The survey was developed and co-constructed with the SI team and the formative assessment expert consultant who, as mentioned previously, was selected to help design and direct the innovative Formative Assessment Professional Development Series.

The survey was piloted prior to this research study and a Cronbach alpha test conducted and evaluated against a coefficient of .700 to estimate internal consistency of the constructs (Cronbach, 1951). Please see the results in Table 7. The pre survey was used to gather data as a baseline before participants received training on the formative assessment process. The Cronbach alpha test was computed using the survey results and the coefficients on all constructs were above .920. Evaluated against the coefficient of .700, there appears to indicate a high degree of internal consistency among the constructs. The instrument as a whole also had a coefficient of .977 indicating a high degree of reliability.

Table 7

Coefficient-Alpha Estimates of Internal-Consistency Reliability

Constructs	No. Items	Cronbach alpha
1 Learning Goals & Success Criteria	5	0.951
2 Formative Assessment Strategies	9	0.926
3 Elicits Evidence & Adjusts Instruction	5	0.932
4 Feedback to Students	5	0.926
5 Student Self & Peer Assessment	6	0.964
Whole Instrument	30	0.977

Note. N = 19

[a] Cronbach alpha evaluated against a coefficient of .700

Statewide Survey

The next section presents the quantitative and qualitative results from the statewide survey. Analysis of the qualitative data from open-ended questions together with the quantitative data assisted in answering both research questions.

Quantitative results of statewide survey. The pre survey was emailed to 266 teachers and 25 trainers. Of those, 83 (31%) teachers and 19 (76%) trainers self selected to respond to the optional survey from August 30 to September 15, 2011 before training at the sites began. The post survey was emailed to 243 teachers and 43 trainers. Of those, 81 (33%) teachers and 23 (50%) trainers self selected to respond to the optional survey from January 31, 2012 to February 8, 2012. Thus these were two somewhat different or independent samples.

The co-constructed items in the survey were the learning goals and outcomes for the course. The same constructs and items were embedded in the observation instrument that was used to gather qualitative data in the case studies. All survey items were based on a Likert scale, and the survey contained open-ended questions to give respondents an opportunity to elaborate on answers or add any additional comments as described above in methods chapter. Teachers were asked to select from *strongly agree, agree, neither agree or disagree, disagree,* and *strongly disagree* to indicate what formative assessment behaviors they were using in classrooms. Trainers were asked to select from *strongly agree, agree, neither agree or disagree, disagree,* and *strongly disagree* to indicate what formative assessment behaviors they observed most teachers using in classrooms.

These data from the pre survey were compared with data from the same survey administered post, after four months of training, to gauge if teachers and trainers perceived an increase or decrease in formative assessment behaviors the teacher/teachers used in his or her classroom.

Additionally data from the teacher survey was compared with data from the trainer survey to look for alignment or divergence on the constructs. An independent *t*-test was conducted on a construct-by-construct analysis.

Pre/Post statewide survey descriptive results and analysis. Table 8 shows the combined descriptive results of the *t*-test for the pre and post teacher and trainer statewide surveys. In the pre survey, most participants on average agreed or strongly agreed that teachers were using the formative assessment behaviors in classrooms. In the post survey after four months of the training, the

participants rated teachers slightly higher in the use of all construct behaviors. In regards to answering the first research question, "What influence did the Train the Trainer model have on classroom instruction?" these data suggest that there was a slight increase in the teacher use of formative assessment behaviors from pre to post. Please see Appendix C for a full description of behavior criteria under each construct.

Table 8

Descriptive Analysis t-test Pre and Post Survey Trainers' & Teachers' Responses

Constructs		*M*	*SD*	Std. Error Mean	Sig
Learning goals & success criteria	Pre	3.80	0.85	0.08	0.69
	Post	3.85	0.73	0.07	
Formative assessment strategies	Pre	4.27	0.61	0.06	0.74
	Post	4.30	0.54	0.05	
Elicits evidence & adjusts	Pre	4.06	0.84	0.08	0.32
	Post	4.16	0.62	0.06	
Feedback to students	Pre	3.98	0.89	0.09	0.84
	Post	4.01	0.80	0.08	
Student self & peer assessment	Pre	3.75	0.94	0.09	0.35
	Post	3.86	0.73	0.07	

Note. Pre $N = 102$, Post $N = 106$
*Statistically significant at the 0.05 level (2-tailed)

There were challenges with the administration of the pre survey. The trainers did not deliver the overview session at sites as prior to the survey as

scheduled. In addition, the teacher email list was from the end of school of the prior year so some teachers were inadvertently excluded from the pre survey. As a consequence, both of these conditions could have influenced the survey results.

The slight increase from pre to post in the initial analysis prompted the researcher to think about additional ways to look at the data. Since there seemed to be variance and no statistical significance at the *p* value equal to 0.05, the researcher looked more closely at the data to determine if additional analysis might lead to a better understanding of the variance. Through this closer analysis, it appeared that the trainers were rating the teachers lower in all constructs compared to the teachers' ratings of themselves. This led to the comparison of the trainer responses with the teacher responses. Analysis was conducted using a *t*-test to compare the trainer responses with the teacher responses. There was a significant difference between the means from the teacher survey data compared with the means of the trainer survey data. Table 9 below shows the comparison of the pre teacher survey to the trainer survey construct means and the *t*-test results. If the level of significance is set at $p = .05$, then there was a significant difference between the trainers' responses and the teachers' responses on all constructs.

Table 9

Comparison of Pre Teacher Statewide Survey Responses to Pre Trainer Survey Responses

Pre Survey		*M*	*SD*	Std. Error *M*	*M* Diff	Std Error Diff	*p* value
Learning goals & success criteria	Trainer	3.06	1.05	0.24	0.91*	0.25	0.00
	Teacher	3.97	0.71	0.08			
Formative assessment strategies	Trainer	3.71	0.62	0.14	0.69*	0.14	0.00
	Teacher	4.40	0.54	0.06			
Elicits evidence & adjusts	Trainer	3.27	0.87	0.20	0.96*	0.19	0.00
	Teacher	4.23	0.73	0.08			
Feedback to students	Trainer	2.97	0.92	0.21	1.25*	0.19	0.00
	Teacher	4.21	0.70	0.08			
Student self & peer assessment	Trainer	2.92	0.87	0.20	1.02*	0.22	0.00
	Teacher	3.94	0.85	0.09			

Note. Trainer N = 19, Teacher N =84
*Statistically significant at the 0.05 level (2-tailed)

Table 10 below shows the comparison of the post statewide survey teacher response construct means to the trainer response construct means and the *t*-test results. The level of significance is set at p = .05, thus there was a significant difference between the trainers' responses and the teachers' responses on all constructs.

Table 10

Comparison of Post Trainer Survey Responses to Teacher Survey Responses

Post Survey		*M*	*SD*	Std. Error *M*	*M* Diff	Std Error Diff	*p* value
Learning goals & success criteria	Trainer	3.23	0.52	0.11	0.79*	0.16	0.00
	Teacher	4.02	0.69	0.08			
Formative assessment strategies	Trainer	3.81	0.39	0.08	0.63*	0.10	0.00
	Teacher	4.44	0.50	0.06			
Elicits evidence & adjusts	Trainer	3.64	0.37	0.08	0.67*	0.10	0.00
	Teacher	4.30	0.60	0.07			
Feedback to students	Trainer	3.24	0.74	0.15	0.99*	0.16	0.00
	Teacher	4.22	0.67	0.07			
Student self & peer assessment	Trainer	3.28	0.62	0.13	0.75*	0.16	0.00
	Teacher	4.02	0.68	0.07			

Note. Trainer $N = 23$, Teacher $N = 83$
*Statistically significant at the 0.05 level (2-tailed)

The difference between the trainer and teacher responses also assisted in answering the second research question. If the trainers had a different perception and in all constructs observed less behaviors than the teachers reported using, then the data suggested that there may have been a problem on the part of the trainers. Perhaps trainers were not defining and demonstrating for teachers exactly what formative assessment behaviors looked like in practice. These data may have

reflected that overall there was not enough support to assist teachers with the implementation of the Train the Trainer professional development at the classroom level.

Quantitative interpretation of statewide survey results. The statewide survey instrument as a whole had a coefficient of .977 indicating a high degree of reliability. The combined trainer and teacher survey results showed a slight increase from pre to post indicating that there may have been influence of the Train the Trainer model on classroom instruction. Teachers may be in the early stage of implementing trying out more formative assessment behaviors, thus accounting for the slight increase over the four month period of the study. It is possible that the increase, although not statistically significant, may have been due to the Train the Trainer influence. These data may have reflected the beginning phase of teachers starting to try out more behaviors in their classrooms.

There was a statistically significant difference between the pre trainer survey responses and the teacher responses. Further, the trainers' construct means were lower than the teachers' construct means. These data served to answer the second research question and suggest that trainers may not be providing the support that helps teachers come to a common understanding of formative assessment in terms of what it is and how to implement the behaviors in their instruction. A possible explanation for this difference may have been a difference in perception of what behaviors constitute formative assessment. This may have been dependent on how well the trainers were explaining and demonstrating the formative behaviors. Another possible explanation may have been that, in some

cases, trainers had not followed through and delivered the professional development on formative assessment to teachers at his or her site.

The next step was to analyze the qualitative data to further illuminate the Train the Trainer phenomena and provide additional data to answer the research questions.

Qualitative results and interpretation of statewide survey. The statewide survey included open-ended questions after each construct as a source of qualitative data and provided respondents an opportunity to further elaborate on each construct. The qualitative data were analyzed using the process described earlier in Chapter 4, and three themes emerged: Theme 1, the Train the Trainer Influence, Theme 2, the Trainer Skills Influence, and Theme 3, the Support Influence.

Theme 1: Train the Trainer Influence. Qualitative data from the teachers' open-ended responses seem to support the perception that the teachers believed they were implementing the formative assessment process in their classrooms. One teacher responded concerning the influence of the formative assessment delivered via the Train the Trainer model at the site, "at School B we have been strongly encouraged and trained to utilize Learning Goals and Success Criteria with our students." These data tended to confirm that at least some of the trainers were following through and delivering training at the sites. There was more evidence of influence of the training as a teacher shared through the open response item "… when learning goals and criteria for success are shared with students, they become more meaningful and achievable." These data tend to

suggest that teachers were adopting the language of formative assessment and making connections to student learning.

Theme 2: Trainer Skill Influence. A different theme emerged from comments concerning the influence of the trainer's professional development presentation skills. One respondent commented, "Learning goals and success criteria have not been fully explained to teachers in training. The use of these is little to none because of poor communication skills of the presenter." This would seem to indicate that at some sites, the Train the Trainer model was having little influence on embedding the formative assessment process in classrooms due to the trainer delivering poor training. An additional respondent remarked, "I do not think we are doing this consistently throughout our school nor do I think all of it is clear to all teachers." Still another commented, "…that it is sometimes hard to understand what we are to take back to our classrooms…" There seemed to be some difficulty with teachers consistently using the behaviors and, at some sites, there appeared to be some challenges with the trainer presenting the formative assessment content in a clear enough manner for the teachers to understand and implement the new learning in their classroom instruction. This seemed to support some of the interpretations from the quantitative analysis--that there may have been a difference in the perceptions of trainers and teachers of what formative assessment was and what it looked like in practice.

Theme 3: Support Influence. Some of the comments also helped to answer Research Question 2, "To what extent does the trainer support the implementation of the Train the Trainer professional development at the classroom level?" A teacher used the

comment box to write, "…we aren't given a model to use to help us develop a lesson plan to use with the kids. It's sink or swim." Teachers appeared to be lacking in the support needed to show them how to integrate the new learning with what they already had in place. Yet at other sites, there appeared from the next participant's comment to be too much support, "…with all the micro-managing from coaches and programs, it does not make it impossible but it does make it extremely difficult." Perhaps from this comment the data suggest that teachers felt that they did not want or need the support and wished to implement the new formative assessment process on their own. While some teachers seemed to say that there was too much support, other teachers wrote, "At School X we have been strongly encouraged and trained to utilize learning goals and success criteria with our students. We do it daily. I may not be the best at it, but not because of lack of administrative effort and support." According to this teacher, the support was provided by administration to the extent that it appeared she felt encouraged and was trying out the new behaviors consistently in her classroom.

Summary for qualitative survey results. The qualitative results from the survey served to provide additional data to help answer Research Question 1 concerning the Train the Trainer Influence. It appeared that at some schools the training was influencing classroom instruction. Some teachers were using the language of formative assessment such as learning goals and success criteria and this could be seen as evidence of influence on the learner. Some teachers were feeling more comfort at trying out the new behaviors in their classrooms. Again the data suggest that the training was influencing classroom instruction. Theme 2 Trainer Skill Influence emerged and informed Research Question 2 concerning

the support provided by trainers in order for teachers to implement the new learning. According to the teachers, some trainers were not delivering the training in a way for teachers to understand the formative assessment process, and they complained of poor communication skills.

Quantitative and qualitative data from the classrooms observation were analyzed to confirm and triangulate the survey findings. These data also helped in answering the research questions.

Classroom Observations Results and Interpretation

Classroom observations of the initial five cases conducted by the participant action researcher in September 2011 and then again in January 2012 helped answer Research Question 1, "What influence does the Train the Trainer model have on classroom instruction specifically as it relates to formative assessment?" Five classrooms at each of the schools were selected for the observations for both pre and post. There was a span of approximately four months from the time of the initial baseline observations conducted prior to the formative assessment training and the post observations. The formative assessment observation instrument was described in Chapter 4, Methodology. Please see the classroom observation instrument with the criteria listed in Appendix D.

The quantitative results are outlined first, and then the qualitative results with analysis are presented followed by an interpretation of the classroom observation results.

Quantitative results classroom observations. Table 10 shows the number of formative assessments observed in all classrooms during pre and post observations. There is an additional column for each case study school displaying the average of the teachers' ratings (described previously in Chapter Four) according to the how effectively the teachers are implementing the behaviors both pre and post. The scale range is zero, for *should have been present but were not*, to a rating of five, indicating the *teacher is exemplary in the use of the formative assessment behaviors*.

Table 11 below shows that by post, some school's overall average rating of 2, which was indicative of teachers using the formative assessment behaviors in a limited fashion, was approaching a rating of 3 indicating teachers were developing in the use of formative assessment behaviors. Teachers in School D had actually dropped in the overall rating on average to below a rating of 1 indicating inappropriate or ineffective use of formative assessment behaviors.

Table 11

Frequency of Formative Assessment Behaviors and Average Effectiveness Rating

School	Frequency		Avg. Rating 1-5 Rating Scale	
	Pre	Post	Pre	Post
A	34	50	1.76	2.08
B	35	66	2.24	2.52
C	24	75	1.88	2.36
D	24	27	1.60	0.63
E	13	51	1.52	1.64

Note. School N = 5 schools, 5 teachers at each school

Table 12 below displays the frequency of observed formative assessment behaviors both pre and post by school and by constructs. There were more formative behaviors observed and recorded for Formative Assessment Strategies than any other of the constructs. Learning Goals and Success Criteria was next, followed by Feedback, Elicit Evidence of Learning, and finally with the fewest observed behaviors was Student Self and Peer Assessment. Most schools showed an increase in observed behaviors from pre observation to post observation visits.

Table 12

Frequency Table of Observed Formative Assessment Behaviors by School and Construct

Formative Assessment Constructs		A	B	C	D	E	Total
1 Learning Goals & Success Criteria							
	Pre	7	9	4	7	3	30
	Post	9	11	11	8	12	51
2 Formative Assessment Strategies							
	Pre	14	12	8	7	7	48
	Post	12	20	16	13	10	71
3 Elicits Evidence & Adjusts Instruction							
	Pre	4	6	4	2	2	18
	Post	9	11	11	1	5	37
4 Feedback to Students							
	Pre	7	5	6	5	1	24
	Post	15	14	9	5	12	55
5 Student Self & Peer Assessment							
	Pre	3	3	2	3	0	11
	Post	5	10	4	0	2	21

Note. School $N = 5$ schools, 5 teachers at each school

Qualitative results classroom observations. The qualitative data results and analysis section is organized by the five constructs for formative assessment that formed the framework and outcomes for the Formative Assessment Professional Development Series and were embedded in both the statewide survey and the classroom observation instrument. Each construct contains an example pre and post of the observed behavior from one of the sites with an interpretation. This was done to provide a picture of how instruction might be influenced in each

context. Table 12 shows the patterns of the behaviors and the following are the concrete examples of how teachers were implementing the formative assessment behaviors at the sites.

Construct 1: Learning goals and success criteria. Learning goals connect to a bigger goal, are manageable, are focused on deep learning and higher order thinking, and are written in language students can understand. Success criteria refers to what a student will say, write, do, or make to show understanding relative to a learning goal. Qualitative data from the pre and post observations indicated that at most sites there was an increase of posting learning goals, however the quality varied from site to site. The researcher observed rare instances where teachers shared the success criteria with students. For example, a mathematics teacher from the pre observation at Site D had the learning goal and success criteria posted "I can identify and graph equations" and had students solve a few problems for bell work. The teacher collected all of the students' work and then modeled and solved the problem up at the board while students looked on with the students' work on the teacher's desk and only listened as the teacher talked through all of the teacher's steps to solve the problem.

The learning goal and success criteria were in place but the learning goal and success criteria had been used ineffectively. The teacher did not look at the collected papers, and thus could not use the success criteria to know if students had demonstrated understanding of the learning goal, nor ascertained what instruction, if necessary, was needed to move the students forward in the learning progression.

Four months later, in the same teacher's classroom at School D, the learning goal was posted said, "Multiply and divide polynomials." There were no success criteria posted, however, the teacher said, "Let's take out a piece of paper and write down this equation as I write it on the board." Students wrote the equation on their papers. The teacher asked the same three students questions as the teacher solved the problem on the board. The teacher chose a valid strategy. Asking a question or posing problems and students writing a response was a strategy from Construct 2 that could have assisted the teacher in eliciting evidence to guide instruction. Although the strategy was used, the teacher was only gathering evidence of learning from three students who seem to know the answers. The strategy again was used inappropriately and ineffectively.

Construct 2: Formative assessment strategies. Formative assessment strategies are used to elicit evidence of student learning and include asking questions, listening to discussions, and observing students working through instructional tasks. In one pre observation visit to Site A, teachers were lecturing in two out of the five classrooms using very little formative assessment strategies to elicit evidence of student learning. Questions were asked in the "lecture classrooms" but teachers answered their own questions. In the debriefing meeting with the trainer, it was indicated that this was the usual mode of delivery for the two teachers. In the post observation visit, the previously "lecturing" teachers were wandering the room as students worked on tasks. In one classroom, a student was presenting a problem to the class at the front whiteboard and the

classmates were asking questions as to why the presenting student chose this method over another method.

Construct 3: Adjustment of instruction based on evidence. A teacher elicits diagnostic information from students and then adjusts instruction to fit the needs of the learners. This construct was observed even less frequently than the first two constructs. In some classrooms, teachers exhibited one of two behaviors, either the teacher kept talking or lecturing the entire 30 minutes without interruption as students often took notes or the teacher stopped to ask questions and answered his or her own questions and just kept going.

In a tenth-grade biology class in the pre observation visit, a teacher from Site E was having students build a monomer (the simplest unit or molecule of an organic compound molecule) with Fruit Loops®. Students were looking at pictures in a text to follow as they glued different colored Fruit Loops® on cardboard to make the monomer. Teacher read the objective and said, "So we will color code. So, for hydrogen, green Fruit Loops®. If you did this last year can you give us input on what was difficult?" A student says, "Getting the right shape." The teacher feedback to that response was "you will use a lot of glue- Look at the model so that you can write on paper like a shopping list. You have to know exactly what you need." From the researcher's field notes, this went on for the entire period and teacher questions pertained to the project, "Do you have enough glue? That looks good. Tape your names on them." On the board the teacher writes, "What does your model look like?" Although "Analysis of a student representation" is a strategy, the students were copying the model from a

book, and there were no questions that asked students to explain their work. The teacher was not eliciting evidence throughout the lesson to adjust instruction. The teacher delivered step-by-step instructions and students were following directions.

Four months later, the researcher observed the same teacher for post observation visit. The objective was posted on the board, "Identify the structure and characteristics of a bivalve." The teacher read through PowerPoint slides and told the students that this is what they would be looking at. The teacher then distributed the iPads and the clams and the teacher said, "You may start now. What muscles have you learned about?" (no one answers). The teacher says, "Sally knows." The teacher then goes on without waiting for anyone to answer and suggests students use the screwdrivers to open the clams. All students are in groups of four and filling in a worksheet as one student of the four cuts the muscles of the clam according to the step-by-step instructions on the iPad. Four months later, the teacher was giving the students step-by-step instruction, and students were following directions. There was no sign that the teacher was eliciting evidence and changing instruction based on the students' learning progression.

Construct 4: Feedback provided to students. When teachers provide feedback it should be descriptive, clear, and based on the success criteria. The feedback should help move students forward. In many classrooms, the extent of feedback to the students was "Good job!" "Nice work," "You can do it," "Work harder," "That is not the right answer," and "You got the right answer." In

formative assessment, feedback should be descriptive and clear and based on the success criteria.

In the pre observation of one classroom at School B, the objective on the board read, "We can use strategies to be better readers." The teacher had second-grade students use their own hands to remember the elements of a story, the thumb stood for the characters, the pointer finger was the setting, the middle finger was the beginning, the ring finger was the middle, the pinky was the end and the palm of the hand represented the main idea. The teacher read *Alexander and the Terrible, Horrible, No Good Very Bad Day*. Then teacher asked students to retell the story, using their retell hand as a reminder. Teacher said, "We have the characters and we need to think about the beginning, middle and the end. What happened at the beginning?" As teacher asked questions she called on students for single student responses. Feedback given to students was: "Is there anything else we need to add?" Student responded, "He had gum in his hair." Teacher responded, "That's a good beginning, what happened in the middle?" Students were stuck and no one could think about what happened in the middle. The teacher responded, "…you can do so much better." Feedback is to be descriptive and clear and helps the students know how to move forward. In this case, prompts were appropriate, but the teacher did not include specific hints when students were stuck to move the thinking forward.

Four months later, I returned to the same classroom and this time the teacher was introducing a math lesson and the objective on the board read, "We can discover how long a centimeter is." Students were in pairs measuring and

comparing items with centimeter rulers in books. The teacher had the items projected up on the whiteboard and a pair of students would come up to the board to explain strategies they used to measure the items and then compare them to compute the difference between the two objects. This time feedback was more specific. For example, the teachers asked, "Why did you choose to draw that line?" and "Kathy, can you explain your subtraction? Where does the object begin? Where does it end?" The feedback was specific and related to the student interpretation of student's work. Students were given a chance to use the feedback and correct their work.

Construct 5: Student self and peer assessment. Self- and peer-assessment are important for teachers to provide opportunities for students to learn through assessing their own work and also the work of their peers. Teachers also provide opportunities for students to use feedback from either peers or self to revise their work. This was the formative assessment behavior that was the least observed behavior in all the case study schools. In some of the classrooms where the students were up at the board modeling thinking and problem solving, other students were able to assess their peer and assess the student's own work. A pre observation of an intermediate classroom at School C in September had no student self-assessment or peer-assessment during any part of the lesson. The teacher was behind the desk and lecturing the entire time as he read through problem after problem on mean, median, and mode. He had students read together, "I can use mean, median, and mode to arrange data." The teacher read the questions directly from the teaching manual to the students. Students were

ignoring the teacher and the teacher ended up answering himself, restating the answers from the book. Many students had their heads down on the desk. The students were disengaged.

Four months later, when I returned to the same intermediate classroom, students were practicing fluency and were timing each other, noting missed words, then recording the data. The objective on the board read, "I will use reading comprehension skills as part of Read Naturally." The teacher had control of the classroom, students were on task, and there were the most definitive examples of self-assessment and peer-assessment. In perhaps all of the observations, this was the teacher that seemed to show the most growth from this observer's point of view. The formative assessment behaviors, even though the behaviors were not of quality yet, increased three-fold from pre to post. Classroom management was much improved as well. There were some schools where the Train the Trainer Influence had made it down to the classroom level and there were some schools where it appeared from the observations that very little had changed.

Interpretation of classroom observation results to answer research questions. In schools where observation results showed growth from pre to post, there was evidence to support the Research Question 1 concerning the Train the Trainer Influence. Teachers were using formative assessment strategies to elicit evidence of learning. There was also evidence that trainers had shared the observation instrument from the training with the teachers so there was an expectation that teachers would implement the new learning. Trainers were

spending time in the classrooms observing and giving feedback which was providing answers to Research Question 2 regarding the extent of support provided by the trainer to assist teachers with implementation.

In classrooms with little influence, teachers had not seen the instrument, therefore providing data that there either was little expectation for implementation or that the trainer did not follow through. Data revealed little support for teachers in terms of trainers modeling, observing, or providing grade level meetings focused on data in the schools where observations revealed little growth from pre to post.

Quantitative data from the classroom observations revealed some increases in formative assessment behaviors from pre observations to the post observations of the five schools. There were some schools that were not showing progress and a collaborative decision was made to try to dig deeper to find reasons for the progress and lack of progress at some of the schools. Quantitative and qualitative data helped inform the additional qualitative instruments -- the SI Team Interview and the teacher, trainer, and principal questionnaire that were co-constructed and administered to gather additional information to assist in answering the research questions and provide a deeper understanding of the Train the Trainer phenomena. The next section presents the qualitative data from the SI team specialists.

School Improvement Specialists Interview Results

The email interview was sent to all eight school improvement specialists, and five of eight responded. The qualitative data were analyzed using open

coding and axial coding that allowed for categorizing under the three themes of Train the Trainer Influence, Trainer Skills Influence, and Support Influence. An additional theme emerged from the analysis, Theme 4 Culture of Learning Influence.

Theme 1: Train the Trainer Influence. Comments from the SI team concerning the impact of the Train the Trainer model on the schools seemed to confirm the Train the Trainer Influence theme and included observation evidence of positive influence such as "It is trickling down in some places which became evident through the teacher focus groups." and "I think the model has helped set the expectation that the information will be transferred" There were some observations from specialists that included instances of negative influence, for example, "Since it was not a part of the district and school's PD plan for the year it is an add in." and "There is no evidence that it has moved beyond the initial training" and "At this stage, I have seen little impact. One district is only requiring Success Criteria in one class thus far…which we talk about as an issue of rigor and urgency."

Responses concerning teachers implementing the new learning were as follows: "This varies. In sites where support is consistent and ongoing, I see better implementation" and "They are supportive and doing the best they can at this time. The teachers have a lot on their plate. They are trying to implement various strategies, but the implementation is still not totally comfortable to some teachers." One SI specialist described the formative assessment process at the schools she assisted as implemented "Very slowly. The teachers seem to be

digesting it themselves before trying it much in the classroom. There is some evidence that they are shifting their perceptions of assessment from a test to ongoing monitoring of learning in real time. There is some evidence that they are already doing some formative assessment without calling it that."

Theme 2: Trainer Skills Influence. Other comments were coded and categorized under the Trainer Skills Influence. One specialist commented, "The impact may not be strong because the educators acting as trainers are just one step ahead of the teachers to whom they are providing the trainings" and another SI specialist suggested "…Plan a session, or part of a session specifically for those who will be training, to plan, rehearse and troubleshoot." Along the same lines of the previous suggestion, another SI specialist noted "…there did not seem to be any activities or requirements that were separate from the general audience specifically designed for the identified trainer of trainers."

Theme 3: Support Influence. Other interview questions addressed training support. Questions included: How do you perceive the school and or district trainers supporting the implementation of the formative assessment professional development in the classrooms at the district or charters you assist? Participants' comments include: "At both schools/charters that I work with, formative assessment is now the central focus of the coaching." and "In district/schools where the Instructional Coach is the trainer, there is more follow-up. Where Instructional Coaches are not involved, they are not as focused." "In the sites where I have observed FA practices begin to surface in the classroom, support is multi-faceted (e.g. whole group PD, follow-up at grade level meetings,

feedback and assistance from academic coaches/classroom observations) and training and support are ongoing" another commented. Another salient comment was "…If the school site is persistent in their training, monitoring, and expectations for FA practice in the classroom, it is anticipated that teaching and learning will improve over time."

Theme 4: Culture of Learning Influence. An additional theme emerged from the data across the five interviews, the Culture of Learning Influence theme. A culture of learning means creating a learning community where teachers feel comfortable to try things out and practicing behaviors and strategies in their classrooms and culture of learning means that learning is valued for all. Beginning to try out the behaviors in practice helps the learner refine the formative assessment behaviors and become more confident thus embedding the formative assessment process in classroom instruction. One SI specialist wrote, "…they need more time to apply and practice the art of formative assessment" and "teachers need …opportunities to discuss and question their work in formative assessment," remarked another specialist. Still another wrote "they need more practice with learning goals and success criteria to get better" and "teachers are feeling more comfortable with practicing and implementing formative assessment at this point" mentioned commented another specialist. The next section presents the interpretation of these data in respect to both research questions.

Interpretation of interview results. In answering Research Question 1, the responses of the SI team specialists seem to indicate a varied degree of

implementation of the formative assessment training. The same theme of some of the trainers lacking skills and expertise to effectively deliver the formative assessment training at the sites emerged from the interview data. The specialists seemed to believe the Train the Trainer model was influencing classroom instruction at some sites where training support was in place. This information additionally helped to answer Research Question 2 concerning the support trainers provided to the teachers.

Most SI team specialists agreed that the trainer was key to support; however, one specialist was more specific in describing supports she felt were key to implementation of the formative assessment process in classrooms. The supports included whole group professional development, follow-up at grade level meetings, classroom observations with feedback, and continuous training and support.

At some sites, the trainer appeared to be creating a culture of learning that enabled teachers to experiment with and practice formative assessment behaviors. This led to teachers practicing the formative assessment in their classrooms and becoming comfortable with the process.

The SI team interview was used not only used to answer the research questions, but informed the construction of the principals', trainers', and teachers' questionnaires. The interview data revealed that most specialists felt that implementation was not consistent among the schools they served. Questionnaires were co-constructed to assist in providing a deeper explanation for the variance in progress among the sites.

Questionnaires' Results and Interpretation

Principals', trainers', and teachers' questionnaires were sent via SurveyMonkey to all administrators, trainers, and teachers from the five case study schools. Participation was optional and respondents self selected. The response rate for the teacher questionnaire was 25%, the trainer questionnaire was 60%, and the administrator rate was 100%. All questions on the questionnaire were informed by data from the statewide survey results and the SI interviews.

Responses did vary among the trainers', the principals', and the teachers' answers from the same school. Allowing for the variation, I averaged some of the numerical responses from teachers, principals, and trainers at each site to triangulate and derive a hopefully a more meaningful result. Table 13 shows the averages from the five schools involved in the initial multi case study. School A and C from the initial five case studies reportedly had five plus trainings over the four-month period of the case study. School B and D appeared to have had three trainings, and School E reportedly had only one site training on formative assessment. School B and C trainers apparently modeled formative assessment in most classrooms.

Table 13

Questionnaire Results

School	A	B	C	D	E
Average site trainings provided over the four month period	5+	3	5+	3	1
Average classroom observations of over four month period	15	2	7	3	2
Instructional Coach has modeled over four month period	no	yes	yes	no	no

Note. $N = 34$ (Principals, 4; Trainers, 5; Teachers, 25)

Table 14 below displays the quantitative data on a Likert scale from the principals', trainers' and teachers' questionnaires. The first question regarding implementation of formative assessment behaviors in the classroom was only asked on the principals' and trainers' questionnaires.

Table 14

Questionnaire Responses

Questions	Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree
1. Most teachers implementing					
Principals	1	1	1	1	0
Trainers	0	2	2	1	0
2. Positive impact on classroom					
Principals	0	2	2	0	0
Trainers	1	2	2	0	0
Teachers	3	14	6	2	1
3. Principal supports					
Principals	2	2	0	0	0
Trainers	2	0	2	1	0
Teachers	4	13	6	1	0

Note. $N = 34$ (Principals, 4; Trainers, 5; Teachers, 25)

Data from the principals', trainers', and teachers' responses were triangulated and then analyzed across the four themes. These additional data assisted in further explaining some of the variation that was apparent from the other data sources.

Theme 1: Train the Trainer Influence. The responses of the principals seemed to indicate a varied degree of implementation of the formative assessment training and influence of the Train the Trainer element on classroom instruction specifically as it related to the formative assessment professional development. Two of four principals and three of the five trainers *strongly agreed* or *agreed* that most teachers were implementing the formative assessment behavior. However one of four principals and two of five trainers *neither agreed nor disagreed* and one principal and one trainer *disagreed* that most teachers were implementing formative assessment in their classrooms.

When asked if the formative assessment training at the site was making a positive impact on most of their teachers' classroom practices, two of four principals and three of five trainers *strongly agreed* or *agreed*. The teachers were asked if they believed that site training on formative assessment was making a positive impact on their classrooms and 16 of 25 teachers *strongly agreed* or *agreed*. Six teachers *neither agreed or disagreed* and two *disagreed* that the site training was positively impacting their classrooms.

An open-ended question asked teacher respondents, "In what ways do you feel the formative assessment professional development has impacted your classroom?" Comments were mostly positive but mixed, and appeared to indicate that the model influenced some classrooms yet had no or little impact on others. Some respondents wrote, "The training has helped me be more cognitive of the learning process. It has helped remind me that my classroom practice is important and is one of the most important measures I can take to improve student

performance." Another wrote, "We were already doing formative assessments, and so far, nobody has really taken a close look at our formative assessments to determine how clear and helpful they are. So I don't think this professional development has really changed my classroom practice much."

Theme 2: Trainer Skills Influence. Some comments were categorized under Theme 2 Trainer Skills Influence. A respondent remarked, "If they trained us it was so informal that I don't remember the training. I already use formative assessment so I doubt it will impact my class much to be retrained in it." However, it is difficult to attribute the lack of engagement to the trainer's delivery or to the participant without knowing the circumstance. Regardless, the training delivered by the trainer, as reported by the participant, had little influence on his or her practice. Additionally, one participant commented that the formative assessment "…modules were dry and sometimes hard to follow." This again may reflect on the presentation skills of the trainer.

Theme 3: Support Influence. Principals were asked if they supported the implementation of formative assessment in their teachers' classrooms. All four principals *strongly agreed* or *agreed*. Trainers and teachers were asked the same question, if principals supported the implementation of formative assessment professional development in their classrooms. Two of the five trainers and 17 of the 25 teachers *strongly agreed* or *agreed* that their principal supported formative assessment professional development at their site. Two of the five trainers and six of the 25 teachers *neither agreed or disagreed* and one trainer and one teacher *disagreed.* Leadership is reporting that they support the formative

assessment implementation, however 28% seem unsure or disagree that their leadership supports the training. This could mean that leadership might need to do a better job of communicating their support of the training.

Other comments concerning the support from trainers were again mixed, but mostly positive and included, "she gave me a good idea and new strategies to incorporate into my classroom." Yet another wrote the trainer "gives support through offering suggestions; giving feedback and has made herself accessible for training." A less than favorable comment was "I have only been observed for it once, and there wasn't much follow-up about it."

Theme 4: Culture of Learning Influence. Comments that pertained to the Culture of Learning Influence surfaced in the principals' questionnaire responses. A culture of learning means that learning is valued for all and this includes not only the students, but the teachers, trainers, and principals. One principal wrote that teachers are supported in their learning through "…various professional development opportunities both in district and out of district." Another principal remarked that teachers are supported in their learning, "By having weekly data talks were teachers can ask questions about assessments" and through "Observation conferences with instructional coach and peer observations."

Overall, the mixed comments and results from the questionnaires seem to confirm the variance in the statewide survey data and qualitative data gathered from the observations and interviews. This variance drove the need to conduct a

deeper analysis through a cross case comparison study. The reoccurring themes uncovered in the qualitative analysis were used in the cross case comparison.

Cross Case Comparison Study

This section presents the cross case comparison analysis of two schools that were selected using the process discussed in Chapter 4. Two unique schools were chosen based on how successful they each were in implementing the formative assessment professional development through the Train the Trainer model. School B was chosen as the site appearing to make the most progress and was compared to School D as the site making the least progress at the end of the study. An analysis is conducted using the four themes to help understand what influence the Train the Trainer model had in the successful school and least successful school and what types of supports the trainers provided to help teachers to implement the training at each site.

The focus on the two unique cases allowed for a deeper investigation and comparison of schools that were the most successful and least successful. The understanding gained from the unique cases uncovered what themes and behaviors led to greater influence of the Train the Trainer component on classroom instruction. Likewise the understanding from the least successful school informed what support was needed from the different stakeholders to help this school and schools with similar contexts become more successful implementing the training through the Train the Trainer model. In addition, the understanding of the successful case answered Research Question 2 in terms of how the trainer at the successful school supported the implementation of

formative assessment professional development in teachers' classrooms. This information was useful in informing what supports other schools with similar contexts needed to have in place to prepare for a more successful outcome for implementation of the training through the Train the Trainer model.

Further, the understanding gained from the least successful case school led to greater understanding of the challenges and barriers to the Train the Trainer component and lessons learned to remove barriers and challenges of schools in similar circumstances and contexts.

Both quantitative and qualitative analysis were used in the comparative case study and helped answer the research questions.

Case presentation format. Each site is presented first and then the cross case comparison follows. For each site's case narrative, the following structure will be provided: a description of each site's context followed by the quantitative results that include frequency charts for the formative assessment behaviors in each construct along with an overall sum of the behaviors both pre and post (Miles & Huberman, 1984). There is also a pre and post average rating for the school's teachers based on the rating scale explained in the observation instrument in the Chapter 4.

The narratives also provide a qualitative analysis section that includes a description of the context, a summary of the behaviors observed pre and post visits, and a section on the four theme categories that surfaced from the coding of the previous qualitative analysis with an interpretation of how the research questions are answered in terms of each bounded case.

The researcher relied on qualitative data from the pre and post observations, the principals', trainers', and teachers' questionnaires from each site, researcher's field notes, the interview data from the School Improvement Specialist assigned to assist and monitor each site, and data from document reviews of each site's progress monitoring reports compiled by the SI Specialist. These qualitative data sources helped to assist in elaboration of the themes and triangulation to produce a higher quality analysis (Yin, 1994).

Case study School B.

Context. This K-8 charter school is also located in a mostly Latino neighborhood. Although it serves students through middle school, only the K-5 division of the school was awarded the School Improvement Grant. The school occupies an old multi-story medical building; however, the hallways and classrooms are painted in primary colors that give a cheery feel to the building. The students are neatly dressed in a casual school uniform of khakis and polo shirts and a large percent of teachers are young and enthusiastic Teach for America teachers.

The trainer held monthly trainings according to the triangulated data from the questionnaires. According to documents (schedules of lunch, preps, and grade level meetings) provided the researcher during observation visits, the trainer met weekly with each grade level for "data talks." The trainer was enthusiastic and engaged in the innovative Formative Assessment Professional Development Series sessions. As additional evidence of their progress, the trainer was asked by the formative assessment expert if teachers at School B could be videotaped in

order to show good examples of the formative assessment process implemented in classrooms.

According to the researcher's field notes, during the debriefing meeting with the trainer following the January observations, School B's trainer mentioned that teachers were receiving targeted additional training in questioning strategies to raise rigor and students' problem solving skills. The leadership believes in providing teachers whatever it takes to improve instruction. The next section presents the quantitative results for School B.

Quantitative results of School B. Quantitative data were recorded in two different ways on the observation instrument. Teachers were rated in how effectively they used the formative assessment behaviors and the frequency with which they used the behaviors was recorded.

The overall teachers' ratings at School B showed an increase from 2.25 at the baseline to 2.52 at the post observation. The scale included a n/a for *not observed/not applicable (no elements observed),* 0 for e*lements should have been present but were not*, 1 for *elements are used inappropriately or ineffectively*, 2 for *elements are used in a limited fashion,* 3 for *teacher is developing in use of elements,* 4 *for teacher is proficient in use of elements,* and 5 for *teacher is exemplary in use of elements*. School B had the highest overall rating of all the schools as School B teachers are approaching the developing stage.

Table 15 shows the number of formative assessments observed in all classrooms during pre and post observations. The table shows an increase in observed formative assessment behaviors from pre to post of 31 behaviors.

Overall, teachers' use of self and peer assessment made the most gains and learning goals and success criteria were the criteria observed least often.

Table 15

School B: Pre and Post Frequency of Formative Assessment Behaviors N=5

Formative Assessment Constructs		B
Learning Goal & Success Criteria		
	Pre	9
	Post	11
Formative Assessment Strategies		
	Pre	12
	Post	20
Elicit Evidence		
	Pre	6
	Post	11
Feedback		
	Pre	5
	Post	14
Self & Peer Assessment		
	Pre	3
	Post	10
	Pre Total	35
	Post Total	66

The next section presents the qualitative data from School B's classroom observations followed by an interpretation of the results.

Qualitative results of School B.

Observed formative assessment behaviors. The researcher observed a kindergarten, first-, second-, third-, and fourth-grade for pre and post. According to the pre observation data, most teachers had objectives posted which are more specific than a learning goal; however the trainer at the school mentioned that teachers were not yet using the language of formative assessment. Learning goals were not posted in the midcourse observation. For example, one objective posted on the whiteboard read "Today I am learning to write and count the numbers 1-20." The teachers who were observed were using formative assessment that often included asking questions orally with wait time, engaging students in discussion, and asking students to present problems explaining thinking. The instruction of all teachers at post included more questioning strategies than in the beginning of the school year.

In a primary classroom, a teacher was conducting a lesson on finding evidence in text of fact or opinion. The objective on the board stated, "We can find evidence to prove if it is fact or opinion." Some questioning frames included "Why do you think this is fact or opinion? In your group talk about why you chose fact or opinion." Construct 2: Formative Assessment Strategies including divergent questioning strategies with wait time was observed more frequently in the post observations in almost all classrooms, and thus showed an increase in the combined teachers' observed behaviors from 12 in the pre observations to 20 behaviors in the midcourse observations. The frequency across all constructs and

observed in all classrooms increased from 35 formative behaviors observed in the pre observations to 66 formative assessment behaviors observed post.

Interpretation of data from School B. The quantitative data from the observations data showed an increase from pre to post. This along with the qualitative data from the observations and field notes appeared to answer Research Question 1 and confirmed that the Train the Trainer model is influencing the classroom practice at School B to the extent that teachers will be videotaped to use as exemplars and models for the Formative Assessment Professional Development Series. This means that teachers at School B were implementing the training in their classrooms more often than most schools and the data suggest that this consistent and frequent use of the behaviors led to more effective use of the behaviors.

The analysis of the qualitative data from the questionnaires and researcher field notes led to the answers for Research Question 2, "To what extent does the trainer support the implementation of the Train the Trainer professional development at the classroom level?" School B's trainer appeared not to observe classrooms as much as the other sites' trainers; however, School B's trainer appeared to model lessons and facilitated ongoing grade level meetings focused on data. In the review of the Progress Monitoring report, the SI specialist wrote "The Data Coach and Instructional coach meet with grade level teachers weekly...and during grade level meetings instructional coaches target teachers as to where they are relative to posting leaning goals and setting success criteria." These triangulated data seemed to indicate that teachers at School B were

supported in terms of dedicated time to meet and talk about how they used formative assessment in their classrooms and the impact it was having on students. It appeared that support such as dedicated meeting time, facilitating of meetings by the more knowledgeable trainer, and modeling of the new learning by coaches led to increase use of behaviors as well as more effective use of behaviors in teachers' classrooms.

Case study School D.

Context. Although the high school was awarded the SIG grant, this is really a K12 single site district. The high school and K8 schools are separated by a sidewalk that is perhaps 30 feet long. Classes at the school are usually not more than fifteen to twenty students and the school is on a four day school-week. The school is located in a rural area in the northern part of the state. There is low cost rental housing to teachers who often go back to their homes in nearby cities on the weekend. The school has historical buildings on its site and has had challenges providing potable water to students and staff. In fact, the school has had to shut down from time to time due to the water situation.

There has been a constant change in leadership over the last five years and no systems are really in place. In fact the superintendent was originally hired in the dual role as superintendent and principal, yet early into the school year, it was decided that the trainer would assume the principal position since the superintendent/principal role proved to be too demanding. As a result, there has been little coaching support in classrooms and site training has been limited. According to data triangulated in the questionnaires, the trainer has held three

trainings over the four period of the study and observed most teachers' classrooms on average of three times over the four month period. The quantitative results from School D are presented in the following section.

Quantitative results of School D. Quantitative data were recorded for School D in the same way they were for School B. Teachers were rated in how effectively they used the formative assessment behaviors and the number of behaviors they were observed using in each observation was recorded. An average rating of five teachers both from pre and post observations was computed to provide another measure to include in the quantitative analysis. The scale included a n/a for *not observed/not applicable (no elements observed),* 0 for *elements should have been present but were not,* 1 for *elements are used inappropriately or ineffectively,* 2 for *elements are used in a limited fashion*, 3 for *teacher is developing in use of elements,* 4 for *teacher is proficient in use of elements,* and 5 for *teacher is exemplary in use of elements*. School D had the lowest overall rating of all the schools as School D teachers appeared to lose growth in how effectively the overall teachers were using the formative assessment behaviors in classroom instruction from pre to post data collection. In the baseline observations the teachers from School D had a rating of 1.6 and were almost at the level of using formative assessment behaviors in a limited fashion. After four months, the overall rating had dropped below 1 indicating overall ineffective or limited use of the behaviors. This was based on averaging the ratings of five teachers at the school both at pre and post. Table 16 shows the number of formative assessment observed in all classrooms during pre and post

observations. The table shows an increase in observed formative assessment behaviors from pre to post of three behaviors. The greatest increase in behaviors was in the use of formative assessment strategies.

Table 16

School D: Pre and Post Frequency of Formative Assessment Behaviors N=5

Formative Assessment Constructs		D
Learning Goal & Success Criteria		
	Pre	7
	Post	8
Formative Assessment Strategies		
	Pre	7
	Post	13
Elicit Evidence		
	Pre	2
	Post	1
Feedback		
	Pre	5
	Post	5
Self & Peer Assessment		
	Pre	3
	Post	0
	Pre Total	24
	Post Total	27

The qualitative results from the classroom observations of School D are presented next followed by the interpretation of the results.

Qualitative results of School D.

Observed formative assessment behaviors. The researcher observed an English class, an Algebra class, a mathematics intervention class, an agriculture science, and an art class for pre and post observations. The art teacher resigned and an eighth-grade social studies teacher was observed for the midcourse observation. According to the pre observation data, most teachers had learning goals posted, but only one shared the success criteria with students. There was not much change in the teaching from the pre observation to the midcourse observation. Teachers were told that they would be observed that day, yet most seemed unengaged with students and unconcerned that they were being observed. In the pre observation data, objectives were posted, yet were activity based. The classroom with the highest rating was Ms. W's. The objective posted on the board stated, "Identify and use vocab words in context." In researcher notes, it was noted that the rigor was very low, and the teacher was not gathering evidence of learning. The teacher was wandering the room more to assess if students were on task rather than to ask probing questions and give feedback. In the post observation of the same teacher, the objective posted stated, "Read and Discuss 'Someone Else's Genocide' Create 6 Word Memories." This teacher showed the most gains in formative assessments observed at the post point than any other teacher at School D, yet the objective was still activity based. Feedback to students consisted of "I love that one and I think you can do better." The teacher did provide exemplars and discussed success criteria for the 6 Word Memories activity.

Interpretation of data from School D. The quantitative data from the observations' data showed a little change from pre to post. This, along with the qualitative data from the observations and field notes, helped to answer Research Question 1. In this bounded case, there appeared to be very little the influence of the Train the Trainer model on the classroom instruction. The trainer had delivered three site trainings; however, it appeared that teachers were not increasing in their use of behaviors at Site D. According to the researcher journal and field notes, when the researcher asked if the observation tool had been shared with teachers, all said they had never seen it before. The review of the Progress Monitoring report revealed that teachers in focus group said they were "...already doing formative assessment and now they just do more of it."

There was very little change between the pre observation and the post observation data that are reflected in Table 16. A review of the Progress Monitoring Report confirmed the need for coaching support. Noted in the report from the January 2012 visit "High school does not understand what instructional coaching look and sounds like in the classroom" and "the site is exploring coaching models…" These data suggest that even though the trainer had held three trainings, the trainer provided very little support. Support does seem to matter and increases the likelihood that professional development through the Train the Trainer model will influence classrooms instruction. The influence of the Train the Trainer model on classrooms appears to be limited if support is not provided. Data indicated that the trainer was unable to provide support to teachers in classrooms through coaching, modeling, or facilitation of meetings

focused on formative assessment due to the trainer having additional principal duties added to her job description.

The next section presents the cross case comparison of the results and analysis of the most successful school, School B, compared to the least successful school, School D.

Cross case comparison results and analysis. Both schools are described in terms of their demographics as displayed below in Table 17. Following the demographic comparison, the themes are defined according to the Pattern Matching Analysis Model (Yin, 1994). Each influence theme is defined in terms of predicted outcomes based on the literature. Schools are then compared using the themes linked to each site's relevant evidence from the quantitative and qualitative data and rival explanations are also provided (Yin, 1994).

Demographic comparisons. Table 17 displays the demographics for the two case study schools. Site B is a charter school that is part of a large nationwide charter organization with several schools in the urban area. The school really is a K8 school, mentioned earlier, at the time of the grant; the middle school and elementary school were two separated entities and thus the elementary applied for and was awarded the grant. There are two to three classes at each grade level and the 31 teachers are grouped in grade level teams. The Latino population makes up the majority of students at School B, and the principal as well as some of the teachers are bilingual in Spanish.

Site D is a 9-12 rural high school; however as mentioned previously, the school is located on the same campus with the K8 school. There is a small staff

of ten teachers who serve a diverse population with 60% of the students classified as white, 26% black, and a smaller portion of Latino and Native American students.

Table 17

School B and D Demographics

Site	B	D
District/Charter	Charter	District
Type	Urban	Rural
Grades Served	K-5	9-12
Number of Teachers	31	10
Number of Students	305	260
Latino	74%	11%
White	11%	61%
Black	11%	26%
Native	4%	2%
Asian/Pac Islander	>1%	0%

Note. 2010 Data

Definition of themes and expected outcomes for Pattern Matching analysis. Each of the four themes is defined and expected outcomes are linked to the evidence from data sources. This is an adaptation of pattern matching which is type of analysis that links expected or predicted outcomes with evidence. The

researcher used pattern matching to compare an observed pattern with a predicted or theoretical pattern. If the results are as expected then stronger conclusions can be drawn (Yin, 1994).

Theme 1: Train the Trainer Influence. If the Train the Trainer model was influencing classroom instruction, evidence from classroom observations theoretically might entail an increase in frequency of formative assessment behaviors from pre to post. Observations from pre to post would show an increase in the rating of how effectively teachers used formative assessment behaviors in their instruction and giving specific feedback that helped move the learning forward. Finally, observations of classrooms would show teachers sharing learning goals and success criteria, using formative assessment strategies to elicit evidence of learning, and teachers adjusting instruction. By the end of the study, the formative assessment expert, at post, had not presented the training on the Construct 5, Self and Peer Assessment, so this would not have been observed as often in classrooms. Further, evidence from questionnaires should have shown that a majority of respondents from each site *strongly agreed* or *agreed* that the Train the Trainer model was positively influencing classrooms, and that most teachers had begun implementing the formative assessment behaviors in their classrooms. The Progress Monitoring document review for each site would indicate that through summary focus group data and summary observation data teachers were implementing the formative assessment behaviors in classrooms.

Theme 2: Trainer Skills Influence. If the trainer was skilled, the same evidence cited above would confirm a trainer's skill in training teachers in the

formative assessment process. Questionnaire data should have shown that trainer delivered at least five trainings. The questionnaires were administered in February 2012. This would mean that trainers should have delivered at least four trainings or one site training per month from October through January. The same evidence from the questionnaires mentioned above would be present if a skilled trainer delivered the training at the site. Most teachers would have *strongly agreed* or *agreed* on questionnaires that the Site Training on formative assessment helped them to begin implementing the formative assessment process in their classroom. The Progress Monitoring document review for each site would indicate that through summary focus group data and summary observation data teachers were implementing the formative assessment behaviors in classrooms.

Theme 3: S*upport Influence.* Educators are more likely to implement the professional development when it is accompanied by coaching and feedback. Evidence of support from principals and trainers from the questionnaires would confirm the influence of support impacting the use of formative assessment behaviors in teachers' classrooms. Comments from open-ended questions for each site would give examples of additional supports provided by principals and trainers. A review of each site's Progress Monitoring document would reveal what supports were in place to improve instruction in the classrooms. Evidence from the questionnaires would indicate that trainers were observing classrooms, giving timely feedback, and accessible to their clients, the teachers.

Theme 4: Culture of Learning Influence. Evidence of a culture of learning might be seen through classroom observations as a classroom environment rich with

resources and a place where students felt comfortable contributing to the discussion, sharing work, and being unafraid to make mistakes. Evidence from the questionnaires might come from teachers' comments on how they engage in discourse with other teachers and implement the new learning. Evidence from the Progress Monitoring documents might be revealed through focus groups or strategies each site is implementing to improve instruction. Evidence of professional learning communities should be found in the review of documents.

Cross case comparison analysis across the themes. In the next section, the two unique schools are compared across each of the themes using pattern matching to see how each school's evidence coincides with the predicted outcomes.

Theme 1: Train the Trainer Influence. Classroom observations revealed little change in the teachers' classroom from the pre observations in September to the post observations in January at School D. Frequency of behaviors from pre to post observations remained the about the same and the combined average rating of the teachers dropped from the pre observations to the post observations. This lack of progress in teachers' implementation of the formative assessment process in classrooms appeared to be confirmed by a review of the sites Progress Monitoring Report which reveals a notation from the SI specialist. The SI specialist recorded in the Summary of Classroom Observations "…Little if any, change in observation trend data from Baseline observations. In this snapshot of (8) eight classroom observations, (4) four HS, (3) three MS, and one (1) Students with Disabilities classroom, there were no examples of rigorous leaning, differentiated instruction, formative assessment, or integration of the learning

goals and success criteria into the instruction. Additionally, information from the Progress Monitoring Report from summary data from focus groups indicated that teachers believed '…some formative assessment is happening …which we were already doing. We are just doing more of it now.'"

School B, on the other hand, had almost twice as many formative assessment behaviors recorded from pre to post observations. At School B, observation data confirmed that teachers were eliciting evidence from students and giving feedback that helped move students forward. In at least two classrooms at the post observations, students were up at the board presenting problems and sharing their thinking process as peers asked questions. The Train the Trainer model appears to have influenced School B's classroom instruction.

A rival explanation for School B's success in the Train the Trainer Influence could have been that School B had supplemented the formative assessment training with professional development on questioning strategies that would increase rigor and higher order thinking. This might have impacted the observed increase in formative assessment behaviors that was not solely attributed to the formative assessment training.

Theme 2: Trainer Skills Influence. Trainers were to share the formative assessment observation instrument with teachers at the very first site training on formative assessment. Teachers from Site D had not seen the formative assessment observation instrument when this researcher asked teachers after each classroom observations in January. Questionnaire data revealed that both the School D trainer and the School B trainer had delivered three formative

assessment site trainings; however School B teachers revealed they were meeting in grade levels and receiving grade level job-embedded formative assessment training. The School B trainer confirmed that teachers were receiving consistent training in formative assessment questioning strategies. The School B Progress Monitoring report confirmed this to be true as well.

A rival explanation for the little success of School D instead of being attributed to the skill of the trainer, perhaps could have been attributed to the trainer being pulled away from the training and coaching duties and therefore the trainer was unable to do her job as intended.

Theme 3: Support Influence. The trainer at School D was not modeling formative assessment in classrooms; however the mathematics coach/interventionist was working with the other mathematics teacher and had modeled lessons in that one classroom. At School D, it may be that without the support and very little training, most teachers did not see the need to implement the formative assessment process if leadership was not providing the support. Leadership may have been so busy in the operation of the school that the leaders were leaving teachers to implement the new learning as they wished and on their own timeline. There was evidence in the Progress Monitoring report that School D recognized the need for a coaching model and was in the process of selecting the model. It appeared by the end of January that leadership at School D understood the need for coaching support and implementation of coaching support was becoming a priority as evidenced in the January 2012 Progress Monitoring report.

School B teachers were receiving regular training and the trainer was modeling behaviors in the classrooms as evidenced from the principals', teachers', and trainers' questionnaire responses as well as the Progress Monitoring report. Support by the trainer in modeling lessons and demonstrating what the formative assessment process looked like in the classroom seemed to work in this context. It may also be that the trainer felt supported by a strong administration that allowed the trainer to support the teachers in the efforts to implement the formative assessment behaviors.

A rival explanation for the apparent influence of support may be that a combination of supports, or support combined with the culture of learning, was in place at School B, and this led to the finding of the support influencing the successful implementation of the professional development at the classroom level.

Theme 4: Culture of Learning Influence. Evidence in the School D's Progress Monitoring Report indicates that there seemed to be, at least at the end of the study, low expectations for student learning. From the summary of student focus groups, students remarked that they would like to be challenged more and the work at times was too easy. A further review of all data sets for School D revealed no mention of a professional learning community although there does seem to be, in this researcher's opinion, an informal community of practice among the two mathematics teachers. Additionally, from this researcher's perspective, the teachers did not seem engaged in the formative assessment process. The responses in the questionnaire along with evidence in the Progress Monitoring Report mentioned earlier indicated that the teachers felt that they were

already "doing formative assessment and now they were just doing more of it." From the researcher's perspective, this was not observed in the classrooms pre or at post at School D. However, a rival explanation may be that communities of practice are informal and at Site D there may have been communities of practice that were in place that outside observers or even very busy school leadership was unaware.

In the Progress Monitoring Report of School B, a detailed account is given of the teacher's Professional Learning Communities (PLCs). The PLCs seemed to be organized around the grade level teams and each has one teacher that assumes a teacher leader role. PLCs may come up with innovative programs and present the program to the Regional Charter Organization who, if approved, will fund the innovation. The Regional Charter Organization acts much as a district would in terms of the support it provides to the charter school. Teachers have developed their own peer coaching program that has been approved and in place for 2011-12. Professional learning is encouraged and teachers have individual professional development plans with personal goals. The culture of learning appears to be embedded in the organization.

Summary of the cross case analysis. Table 18 displays the themes and the data sources triangulated to support the strength or weakness in terms of each theme at School B and D. The first two themes, Train the Trainer Influence and Trainer Skills Influence helped to answer research question 1 in the evidence at each school of formative assessment at the classroom level. Trainer skills were

important in communicating formative assessment in terms of understanding and how to use it effectively in classroom instruction.

The next two themes, Support Influence and Culture of Learning Influence helped to answer research question 2 concerning the extent the trainer supported the implementation of the professional development in classroom instruction. School B's trainer strongly supported the implementation through modeling behaviors, additional training, peer coaching opportunities, and the expectation that the formative assessment process would be embedded in their instruction. The trainer supported a culture of learning through not only the peer coaching but through PLCs and time for grade level meetings. School D data suggests very little support and expectation. No data sources revealed an explicit PLC or peer coaching program.

Table 18

Influences of Themes from Cross Case Pattern Matching Analysis

Influence Themes	School B	Data Sources	School D	Data Sources
Train the Trainer Influence	Strong	O PM Q	Weak	O PM Q
Trainer Skills Influence	Strong	O PM Q	Weak	O PM Q
Support Influence	Strong	PM Q	Weak	PM Q
Culture of Learning Influence	Strong	O PM	Weak	O PM

Note. O=Observations, PM= Progress Monitoring, Q= Principals', Trainers', and Teachers' Questionnaires

The cross case comparison across the themes was conducted to answer the research questions. Research Question 1 asked what influence the Train the Trainer component had on classroom instruction specifically as it related to formative assessment. In School B, the training was influencing classroom instruction as teachers had students presenting problems at the board and other students asking questions and assessing their own leaning. Teachers were asking rigorous questions and listening as students discussed possible answers with each other. There was growth from pre to post observation data in the overall rating of how effective teachers were in their use of the behaviors.

At School D the rating decreased from pre to post and observation of teachers revealing the absence of formative assessment behaviors in most

classrooms. There seemed to be very little expectation of teachers implementing the learning in their instructional practice.

Research Question 2 addressed the extent to which the trainer was supporting the implementation of the Train the Trainer professional development at the classroom level. At School B, the trainer was supporting the implementation by providing additional targeted training in questioning strategies in PLC grade level teams. The trainer also provided modeling of the formative assessment behaviors in the classrooms. Teachers were given the opportunity to develop their own peer coaching program and were supported by the trainer. Unfortunately at School D, data suggested that the trainer was pulled for other duties, so was unable to provide support for her teachers. Although data revealed that training was delivered, there seemed to be little follow-through.

Interpretation of the cross case analysis results. There are five key elements that these data suggest made it more likely that the Train the Trainer model successfully influenced classroom instruction in the successful school and might apply to schools with similar contexts.

First, it is not enough that the training is delivered, but the training needs to be targeted to the particular needs of each site's teachers. Supplemental training may be indicated by teacher data at each site.

Second, having a dedicated coaching program with the trainer as a skilled coach seemed to influence implementation of the formative assessment professional development at the classroom level. The skilled trainer facilitated PLC grade level meetings focused on the new learning and modeled the behaviors

in the classroom. This seemed to have a positive influence not only the teachers increased use of the behaviors in their own classrooms but also how effectively they used the behaviors.

Third, administration needs to not only support the implementation of the Train the Trainer site training but also needs to support dedicated coaching supports for teachers implementing the new learning in their classrooms.

Fourth, supports such as trainers modeling lessons, observing classrooms, and facilitating PLC grade level meetings as well as teacher led peer coaching seemed to increase the chance of the model influencing classroom instruction.

Finally, the data suggest that a culture of learning at the successful school existed and made it possible for teachers to be innovative in their approach to instruction. This seemed to have influenced the teachers' comfort level with increased use of formative assessment in their classrooms as well as the teachers' creation of the peer coaching program at their site. Teachers were not afraid to make mistakes and try something different in their instruction. This led to the observed change in practice.

Given the success of School B and the challenges of School D, there are implications for the study of the Train the Trainer component and what the findings of this small study might mean at the State level, Local Education Agency level, school level, and the classroom level. Chapter Six discusses the findings, implications, limitations, and recommendations of this modest mixed-methods study.

Chapter 6 - Discussion and Conclusion

An action research study was conducted to help determine if formative assessment professional development delivered through a Train the Trainer model influenced classroom instruction**.** This chapter presents the discussion, findings, implications, limitations, recommendations, and closing thoughts concerning the study.

Discussion

The discussion presents some interesting findings that warrant attention. Findings that pertain to the Train the Trainer delivery model will be discussed first followed by findings concerning the innovative Formative Assessment Professional Development Series.

First, promising practices such as customized training based on teacher level data, coaching support, and developing a culture of learning are important for consideration. This was evidenced in the observations and the researcher field notes in the way in which the successful school used teacher level data to identify areas where teachers needed additional training and support in order to effectively implement the formative assessment behaviors in the classroom. Support in the successful schools included:

- Trainers who modeled the formative assessment process in teachers' classrooms.
- Trainers who conducted classroom observations with specific and quality feedback.

- Leadership who supported and provided protected time for PLC's to meet
- Trainers who facilitated meetings structured around student data.
- Leadership who honored the teachers' innovative idea for peer coaching.
- Teachers who supported each other through peer observation with coaching and feedback.

Eun (2008) and Little (1993) state that master educators in the Train the Trainer Model not only deliver the training, but act as mentor coaches for the learners. According to Joyce and Showers (1996) and Neufeld and Roper (2003), teachers whose professional development included coaching support were more likely to apply new ideas and content in their practice. Joyce and Showers (2002) state that when training or professional development is accompanied by effective coaching and support, the transfer of knowledge and skills into the classroom practice increases to 80-95%, compared with 5-10 % without coaching.

A culture of learning proved to be a promising practice as teachers from the successful schools became members of a PLC. The grade level PLCs were given time to meet and discuss change focused on improving instruction. Heritage (2009) asserts that a culture of learning needs to be in place for teachers to feel comfortable practicing the new formative assessment behaviors. This leads to more practicing and increased effective use of the behavior (Heritage, 2009). Grade level professional learning communities and a teacher driven peer-coaching program seemed to promote a culture of learning in the successful school.

Second, some interesting findings merit discussion concerning the implementation of the innovation. Although the Formative Assessment Professional Development Series was implemented as designed and followed the implementation timeline in Chapter 4, training at the sites through the Train the Trainer model was not implemented as planned. The overview session that was attended by trainers in August was not delivered to teachers in August as evidenced in the researcher analytical memos. There was a discrepancy in the pre quantitative and qualitative data collected August 2011 that appeared to indicate teachers perceiving themselves using more formative assessment behaviors in their classrooms then the trainers reported observing. The researcher's pre observation data confirmed that teachers were using very little formative assessment behaviors in their instruction. These data seemed to imply that there was no common understanding of the formative assessment behaviors. This underscores the importance of the Vygotskian (1978) approach of socially constructing meaning that leads to a common understanding of the new learning. A lesson learned by the state for future Formative Assessment Professional Development Series is that the overview session needs to occur immediately for all participants before any data is collected to ensure a cursory common understanding of the formative assessment behaviors. This not only provides the criteria and learning goals for the participants, but also background knowledge for learners to construct new meaning necessary to implement the new learning in their classrooms (Eun, 2008; Vygotsky, 1978).

In addition, the implementation of the model proved complex and consisted of multiple layers. It was not enough for the training to be delivered to the trainers. The trainers were asked to deliver site training to teachers immediately following the state delivered training. It was clear from the data collected through observations, interviews, and questionnaires that the extent of implementation was different at each of the case study schools. The variation in implementation involved not only the number of trainings delivered at each site, but also the quality of both the training and type of coaching programs implemented at the sites. Fixen, Naoom, Blasé, Fiedman, and Wallace (2005), experts in implementation, assert that science has made great strides in identifying evidenced and researched-based programs, yet the science of ensuring that programs are implemented successfully and with fidelity has not yet fully arrived. The state asked the trainers to deliver the trainings at the site. The operative word here is "asked." The lesson learned at the state level was that there was a need to make the site training timetable explicit and to make the training required. For this study, neither the degree of implementation nor the quality of implementation were evaluated; however, for future studies it would be interesting to investigate both aspects of implementation in terms of the formative assessment professional development and the Fixsen and Blasé (2011) implementation model.

Findings indicated that limited implementation occurred in schools where the principal had been newly hired for the 2011-12 school year. Hargreaves and Fink (2006) found that putting structures in place to train newly hired staff leads to sustainability of a new program or reform effort. The lesson learned for the

state in this circumstance was the importance of having an induction or mentoring program in place to assist in training the newly hired leaders and educators. A question that deserves further study is how newly hired leaders and educators will be trained in the formative assessment process. This will be important for long term program sustainability.

Moreover, collaboration made a difference. In schools where leadership and trainers were contributing and planning the Formative Assessment Professional Development Series sessions with the expert or co-constructing instruments and processes with the SI team, the Train the Trainer delivered professional development influence was greater. The online platform provided a space for this PLC collaboration. At the end of the webinar sessions, trainers shared ideas and artifacts that were useful at their sites. Although the trainers had the option of using the site for discussion, none took advantage of this feature. Collaboration was structured to occur at the very least at the end of each session. The successful schools posted not only assignments, but shared templates that included lesson plans, observation instruments, and training activities on the site. Eun (2008) and Little (1993) both found that collaboration is a key component that is necessary to engage leaders and teachers in ongoing authentic inquiry that suits the special conditions of school reform.

Understanding the lesson learned concerning collaboration, the state made a concerted effort to involve a training team from one of the least successful schools as a co-presenter in the February webinar presentation. The principal from that school then planned regular site trainings for her teachers for the rest of

the year. This prompted the SI team's realization of the importance of intentionally planning opportunities which involve participants in all aspects of the Formative Assessment Professional Development Series in the future.

Due to the lack of informal use of the online platform for PLC collaboration, future research should involve determining ways to intentionally engage leaders and teachers through the online platform. With further reduction in state funding, the lesson learned for the state is to determine ways to use the online platform not only for trainer to trainer collaboration but for collaboration between the SI team and school leadership in the overseeing and progress monitoring of the grant. This would allow more frequent "virtual" progress monitoring visits especially with districts and charters located in more remote areas of the state.

Conclusion

This section presents an overview of the study followed by the findings in response to the research questions. Implications are considered along with recommendations and limitations. The section concludes with a reflection concerning the topic of the study and professional growth of the researcher.

The action research study was designed to determine whether formative assessment professional development delivered through a Train the Trainer model influenced classroom instruction. As mentioned in Chapter 2, the mixed-methods study was conducted through a Vygotskian (1978) social constructivist theoretical framework. The researcher and participants co-constructed and tested all instruments used for data collection, and participants were involved in analyzing

quantitative and qualitative results that were used to inform the research design and the innovative Formative Assessment Professional Development Series.

The Formative Assessment Cycle (Heritage, Kim, Vendlinski, & Herman, 2009) served as the content for the professional development as well as the conceptual framework of the innovation. Feedback from participants informed the design and session content as the innovation was adapted throughout the term of the study to meet the learners' needs. The Train the Trainer delivery model was a component of the innovation. The Train the Trainer model was selected for its cost-effectiveness and efficiency in providing professional development to schools widely distributed throughout the state. The mixed-methods study sought to answer two research questions:

- What influence does the Train the Trainer model have on classroom instruction specifically as it relates to formative assessment?
- To what extent does the trainer support the implementation of the Train the Trainer professional development at the classroom level?

The study began with a survey that was administered statewide and involved teachers and trainers from all the schools receiving the innovative formative assessment training. At the same time, a purposeful sample of five schools was selected for the initial multi-case study to represent the variety of locales (rural, urban, or reservation schools) and the variety of grades served (K-12, 9-12, K-8, and K-5). Pre and post classroom observations based on formative assessment constructs were conducted in the initial five case study schools. SI specialists that assisted the schools were interviewed, and principal, coach, and

teacher questionnaires were administered to all participants in the five case study schools. From the five initial case study schools, the most successful and least successful case were selected to gain a deeper understanding and insight into the influence of the Train the Trainer model on classroom practice. The prior chapters, Chapters 4 and 5, presented the methodology and quantitative and qualitative results and analysis for each of the following methods.

- The Pre and Post Statewide Survey (N=270)
- The Pre and Post Classroom Observations (N=25)
- A School Improvement Specialists Interview (N=5)
- Principal, Trainer, and Teacher Questionnaire (N=4,5,25)
- A Cross Case Study (N=2)

Quantitative data were analyzed using SPSS Version 18. Through a series of statistical analyses, descriptive statistics and t-tests, were conducted on surveys administered to participants prior to the implementation of the training and then again after four months of training. Qualitative data were analyzed using open coding and axial coding then unitizing data according to the Stringer (2007) process. Qualitative analysis led to the categorizing of four themes that included Train the Trainer Influence, Trainer Skills Influence, Support Influence, and Culture of Learning Influence. From these data four key findings emerged that answered the research questions concerning the model's influence on classroom instruction and the extent to which trainers supported teachers' implementation of the formative assessment professional development in the classroom.

Finding 1. *The Train the Trainer model's influence on classroom instruction was greater in schools where the trainer was skilled in not only presenting and delivering the training, but also in providing coaching support to teachers in the classroom.*

According to data from the surveys, observations, document review, and researcher's field notes, the successful school's trainer delivered not only the whole group site trainings, but also facilitated grade level PLC sessions based on needs revealed from her classroom observation. The trainer modeled formative assessment questioning strategies in teachers' classrooms and provided coaching support for job-embedded training.

Finding 2. *Train the Trainer influence on the classroom level was greater at schools where the skilled trainer used teacher level data to provide training targeted to the teachers needs at that site.*

The trainer at the successful school used teacher level data from the site to determine that teachers needed additional training in formative assessment questioning strategies. Through the document review, researcher memos, and observation data, teachers at this school used more formative assessment strategies more often and more effectively than the least successful school.

Finding 3. *There was a greater influence of the Train the Trainer model on classroom instruction at the school that had a dedicated coaching program supported by leadership to assist teachers' implementation of formative assessment in the classroom.*

Observation, interview, and questionnaire data revealed that in the context where leadership supported the trainer and teachers through a dedicated coaching program, there was an observed increase in formative assessment behaviors and also in more effective use of those behaviors.

Finding 4. *The Train the Trainer model had greater influence on classroom instruction in schools where a Culture of Learning existed.*

Observations, interviews, and evidence from the document review revealed that a culture of learning was in place at the successful school. Leadership valued teachers' input and provided individual professional development at the request of teachers and administrators. Teachers felt more comfortable in experimenting with the new learning and were willing to try more of the behaviors.

These findings promoted the influence of the Train the Trainer model on classroom instruction and answered the research question concerning the extent of support provided by the trainer. The next section discusses implications of the study.

Implications. There are implications at the state level, district level, school level, and classroom level. There are implications for the innovation, the Formative Assessment Professional Development Series, as well.

State level implications include how the state uses the lessons learned from this study to influence how Train the Trainer delivered professional development in implemented in the future. Previously presented literature indicates that the model can be cost-effective; however, follow up is needed to

ensure that training at the site is delivered by skilled trainers and that there are supports in place. State agencies may be able to assist with ensuring follow-through and providing guidance for districts and schools to embed systems of support. The study found that skilled trainers make a difference if the model is to positively influence classroom instruction. The state should provide schools and districts with current best practices and support schools in hiring the most qualified and skilled trainers. Districts should provide resources and guidance to schools in the support and development of a culture of learning that seems to be necessary for professional development through the Train the Trainer model to trickle down to the classroom level. Schools, by fostering professional learning communities and providing skilled trainers, can create an environment for success. Finally implications for the classroom involve training delivered in a timely manner by skilled trainers who then follow up the training with observations and feedback and where teachers are given opportunities to practice and observe each other as they embed new learning into their practice.

Implications and significance of the study included understanding the influence of the Train the Trainer component as it was implemented as part of the innovative Formative Assessment Professional Development Series. The insight and understanding of the Train the Trainer component led to an improved design of the innovation. The innovative Formative Assessment Professional Development Series was informed by data shared from this study throughout the four months. For example, in the November training, trainers were sharing training materials and their classroom data to show how formative assessment

was implemented at their sites. In January, a school used this study's observation instrument to develop a feedback form and shared it with all schools. Trainers reformatted the instrument into a checklist with criteria and then space for comments on one side of the document. The feedback form did not include the rating scale, but contained a section for "points of discussion" and "How will formative assessment inform next instructional steps?"

Since the findings were shared at post, it is hoped that lessons learned from the least successful school drove post adjustments to other schools facing similar challenges. As stated in Chapter 5, School D was addressing the need for coaching and in the process of adopting a new coaching framework intended to provide teachers the support necessary to improve instruction through implementing the formative assessment process in classrooms. Taking into consideration both implications and limitations, there are some recommendations that can still modestly be put forth.

Recommendations

There are four recommendations to promote the influence and success of Train the Trainer model on classroom instruction given this context or applied to schools with similar contexts.

- First, districts and schools should hire skilled trainers that not only are skilled in presenting and instruction, but are also experienced in coaching to support teachers and facilitate job-embedded professional development, data focused meetings, modeling of the new learning, and classroom observation with quality and specific feedback.

- Second, the training needs to be targeted to the teachers at the site based on each site's teacher level data.
- Third, there should be a dedicated coaching program in place, supported by leadership, with skilled coaches whose only job is to support the teachers' implementation of the new learning.
- Finally, a culture of learning should be present. Professional development should be valued, and teachers should feel comfortable in trying out and practicing the new behaviors in their classrooms. There should be structured protected time for PLCs to meet to discuss student data and instruction.

The following are recommendations that inform the innovative professional development model.

- First, it is important to explicitly share and review the implementation timeline for the new learning at the classroom level, along with an implementation framework that defines what the implementation looks like at each stage. Fixsen and Blasé (2011) suggest a rubric that allows an organization to evaluate its own progress against predetermined criteria and benchmarks.
- Secondly, it is important to provide opportunities for, as Eun (2008) asserts, participants to jointly construct meaning and a common understanding of the new learning. It is important to scaffold the new learning for participants who arrive at a variety of starting points.

- Finally, it important to develop an induction or mentoring program for all newly hired staff that will ultimately promote the sustainability of formative assessment in the SIG districts and schools.

Limitations

Even though the researcher spent much time planning the study, there were some expected and also some unforeseen limitations that occurred. An expected limitation of the study was the short timeframe that involved a four-month cycle of action research. Change often takes time. Although this study ended in February 2012 due to the constraints of the dissertation, the research will continue with the identified schools through May 2012.

Another limitation concerned the administration of the pre survey. As mentioned in Chapter 5, there were challenges with the pre survey in August 2011. The trainers had not delivered the overview session at sites prior to the survey as was scheduled. In addition, the teacher email list was generated from the end of school in the prior year before this study. Some teachers were inadvertently excluded from the pre survey. As a consequence, both of these conditions could have influenced the survey results. Although this study ended in February, there will be an additional survey administered at the end of the school year in May 2012. This will give the research team another chance to compare results and compute significance tests on the additional quantitative data set.

Furthermore, there was a mention of "pressure" in an email from a trainer who was glad that the SI team had kept after her administrator to implement the training. The role of the state in the study may have affected how participants

responded in the surveys and questionnaires. Response error could have occurred as teachers selected strongly agree or agree as the response the Department of Education wanted to see. An attempt to mitigate the response error was in the email invitation which reminded participants that the pre survey would be used to gather data to evaluate the effectiveness of the Formative Assessment Professional Development Series Train the Trainer model.

A maturation threat to internal validity may have affected perception results in the pre and post surveys. Perhaps as some teachers gained more knowledge of what formative assessment behaviors actually looked like through training and the coach modeling, the teachers could have under reported behavior use in the post survey perceiving that they were actually using less of true formative assessment behaviors in their practice. Likewise the same could be said of the some of the trainers.

In addition, a mortality threat was present for the teacher surveys as teachers resigned and left the SIG schools during the four months. This could have accounted for the wide statistical variation pre to post.

The observations were conducted solely by the action researcher. Although this negated the possibility of inter-rater reliability error, it also increased the possibility of researcher bias. The researcher attempted to reduce bias and increase objectivity through member checking. In the pre observations and again at post observations, a SI colleague observed at least three classrooms with the researcher to member check and reduces researcher bias. Also, it is important to remember that observations are only a snapshot in time. Observing

five classrooms at each site and then averaging results was an attempt to compensate for a teacher who could have had a "bad day." Since teachers knew they were being observed, there may have been the Hawthorn effect. There is a possibility that in some classrooms, the behaviors could have increased due to the observer's presence in the classroom. As the observer, the researcher did all that was possible to avoid disrupting the teacher and classroom to reduce the observer effect as much as possible; however especially in primary classrooms, students tend to be aware of "visitors." All of this was taken into consideration to conduct research that would hopefully lead to some small contribution to the body of knowledge on the Train the Trainer model and would inform the different levels of participant stakeholders who were a part of this study.

Closing

Research studies involving the Train the Trainer model through the School Improvement Grant program are at the emergence stage. Although the findings cannot be generalized given the nature of participatory action research, it is the hope of this researcher and the participants that this study added to the new body of research professional development for the School Improvement Grant Schools. Lessons learned will hopefully assist in understanding the Train the Trainer component so often selected in professional development designs.

Personally, as an educational leader, I have learned much about action research. I believe it will serve me well since I intend to continue to conduct research in my position with the state department of education. I believe those involved in policy at the state level need to use cycles of action research to make

timely decisions based on current data. It is important to also conduct action research when programs or innovations are implemented not only to gauge effectiveness but inform the development of the innovation in response to participants' needs throughout the implementation. Action research is crucial in education today as we as educators are often charged with projects and reform efforts that are analogous as the saying goes to "building the plane while flying."

REFERENCES

Annenberg Institute for School Reform. (2004). *Professional development strategies that improve instruction: Instructional coaching*. Providence, RI: AISR. Retrieved from www.annenberginstitute.org/publications/tlpubs.html#plc

Assessment and Accountability Comprehensive Center at National Center for Research on Evaluation, Standards, and Student Testing (CRESST). (n.d.). *What is formative assessment? The formative assessment cycle.* Retrieved February 1, 2012 from http://datause.cse.ucla.edu/fa_cycle.php?node=0

Bain, J.G., & Herman, J.L. (1987). *Making schools work for underachieving minority students: Next steps for research, policy, and practice* (ED294948). *Proceedings of the conference,* Los Angeles, CA.

Barrar, H., Fung, I., Timperley, H., & Wilson, A. (2007). *Teacher professional learning and development: Best evidence synthesis iteration.* Wellington, New Zealand: Ministry of Education. Retrieved from http://www.educationcounts.govt.nz/goto/BES

Black, P. J., & Wiliam, D. (1998). Inside the black box: Raising standards through classroom assessment. *Phi Delta Kappan, 80,* 139-48.

Blasé, K.A., & Fixen, D.L. (2011), Assessment of implementation stages. *National Implementation Research Network,* 2-9.

Borko, H., Elliott, R., & Uchiyama, K. (2002). Professional development: A key to Kentucky's educational reform effort. *Teaching and Teacher Education, 18*(8), 969-987.

Campbell, P., Frances, J., Joly, B., Koh, H., Orfaly, R., & Whittemore, B. (2005). Brief report: Train the trainer as an educational model in public health preparedness. *Journal of Public Health Management*, S123-S127.

Christine, D., Hahn, E., Noland, M., & Rayens, M. (2002). Efficacy of training and fidelity of implementation of the life skills training program. *Journal of School Health, 72*, 282-287.

Conrad, D. (2005). Building and maintaining community in cohort-based online learning. *Journal of Distance Education, 20*(1), 1–20.

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika, 16*(3), 297-334.

Curry, M. (2008). Critical friends groups: The possibilities and limitations embedded in teacher professional communities aimed at instructional improvement and school reform. *Teachers College Record, 110*(4), 733–774.

Danielson, C. (2007). *Enhancing professional practice: A framework for teaching*. Alexandria, VA: ASCD

Darling-Hammond, L., & McLaughin, M.W. (1995). Policies that support professional development in an era of reform. *Phi Delta Kappan, 76* (8), 597-604.

Denzin, N.K. (1978). *The research act: A theoretical introduction to sociological methods.* New York, NY: McGraw-Hill.

Drago-Severson, E.E. (1994). *What does "staff development" develop? How the staff development literature conceives adult growth.* Unpublished qualifying paper, Harvard University.

DuFour, R. (2004). What is a "Professional Learning Community?" *Educational Leadership*, *61*(8), 6.

Elmore, R., & Burney, D. (1997). *Investing in teacher learning: Staff development and instructional improvement in Community School District #2*. New York, NY: National Commission on Teaching & America's Future.

Eun, B. (2008). Making connections: Grounding professional development in the developmental theories of Vygotsky. *The Teacher Educator, 43*, 134-155.

Fenwick, T. (2000). Questioning the concept of the learning organization. In C. Paechter, M. Preedy, D. Scott, & J. Soler (Eds.), *Knowledge, power and learning* (pp. 74-88). London, England: Paul Chapman Publishing.

Field, L. (1997). Impediments to empowerment and learning within organizations. *Learning Organization*, *4*(4), 149-158.

Fielding, M. (1999). Radical collegiality: Affirming teaching as an inclusive professional practice. *Australian Educational Researcher*, *26*(2), 1-33.

Firestone, W.A., & Martinez, C. M. (2007). Districts, teacher leaders, and distributed leadership: Changing instructional practice. *Leadership and Policy in Schools, 6*(1), 3-35.

Fixsen, D.L., Naoom, S.F., Blasé, K.A., Friedman, R.M., & Wallace, F. (2005). *Implementation research: A synthesis of the literature*. [Monograph]. Tampa, FL: University of Florida. Retrieved April 8, 2012 http://www.fpg.unc.edu/~nirn/resources/publications/Monograph/pdf/Monograph_full.pdf

Fraenkel, J. & Wallen, N. (2005). Validity and reliability. In J. R. Fraenkel and N. E. Wallen, *How to design and evaluate research in education with PowerWeb*, (pp. 152-171). Hightstown, NJ: McGraw Hill Publishing Co.

Fullen, M.G. (1991). *The new meaning of educational change*. New York, NY: Teachers College Press.

Garet, M., Porter, A., Desimone, L., Birman, B., &Yoon, K. (2001). What makes professional development effective? Results from a national sample of teachers. *American Educational Research Journal*, *38*(4), 915-945.

Gay, L.R., Mills, G.E., & Airasian, P.W. (2009). *Educational research: Competencies for analysis and applications.* Columbus, OH: Pearson.

Giles, C., & Hargreaves, A. (2006). The sustainability of innovative schools as learning organizations and professional learning communities during standardized reform. *Educational Administration Quarterly*, *42*(1), 124-156.

Guba, E.G. (1990).The alternative paradigm dialog. In E.G.Guba (Ed.*), The paradigm dialog* (pp. 17-30). Newbury Park, CA: Sage Publication.

Guskey, T.R. (2000). *Evaluating professional development*. Thousand Oaks, CA: Corwin Press, Inc.

Habegger, S. & Hodanbosi, P. (2011). Embedded instructional coaching: What works. *Principal Leadership,11*(6), 36-37.

Hargreaves, A. (1998). The emotional practice of teaching. *Teaching and Teacher Education*, *14*(8), 835-854.

Hargreaves, A., & Fink, D. (2006). *Sustainable leadership*.San Francisco: Jossey-Bass.

Hattie, J. (2009). *Visible learning: A synthesis of over 800 meta-analyses relating to achievement.* New York, NY: Routledge.

Haycock, K. (1998). Good teaching matters. *Thinking K-16*, *3*(2).

Heritage, M. (2012). Power Point Presentation in Arizona Department of Education Formative Assessment Professional Development Series Webinar, delivered April, 2, 2012.

Heritage, M., & Chen, E. (2006). Why data skills matter in school improvement. *Phi Delta Kappan, 86*(9), 707-710.

Heritage, M., Kim, J., Vendlinski, T., & Herman, J. (2009). From evidence to action: A seamless process in formative assessment? *Educational Measurement: Issues and Practice, 28*(3), 24–31.

Hewson, P., Kahle, J., Scantlebury, K., & Davies, D. (2001). Equitable science education in urban middle school: Do reform efforts make a difference? *Journal of Research in Science Teaching, 38,* 1130-1144.

Hord, S. (1987). *Evaluating educational innovation*. London: Croom Helm.

Hord, S. (2009) Professional learning communities: Educators working together toward a shared purpose-improved student learning. *Journal of Staff Development, 30* (1).

Horsburgh, D. D. (2003). Evaluation of qualitative research. *Journal of Clinical Nursing, 12*(2), 307-312.

Hunter, B. (2002). Learning in the virtual community depends upon changes in local communities. In K. A. Renninger & W. Shumar (Eds.), *Building virtual communities: Learning and change in cyberspac*e (pp. 96-126). Cambridge, UK: Cambridge University Press.

Johnson, R., & Waterfield, J. (2004). Making words count: The value of qualitative research. *Physiotherapy Research International, 9*(3), 121-131.

Joyce, B., & Showers, B. (1995). *Student achievement through staff development: Fundamentals of school renewal* (2nd ed.) New York, NY: Longman.

Kahle, J., Meece, J., & Scantlebury, K. (2000). Urban African American middle school science students: Does standards-based teaching make a difference? *Journal of Research in Science Teaching, 37,* 1019-1041.

Kaiser, A., Hester P., Albert, C., & Whiteman, B. (1995). Preparing parent trainers: An experimental analysis of effects on trainers, parents, and children. *Topics in Early Childhood Special Education, 15,* 385-414.

Knapp, M., & Plecki, M. (2001). Investing in the renewal of urban science teaching. *Journal of Research in Science Teaching, 38,* 1089-1100.

Learning Forward. (2011). *Definition of professional development.* Retrieved from http://www.learningforward.org/standfor/definition.cfm

Lietz C.A., Langer, C.L., & Furman, R. (2006). Establishing trustworthiness in qualitative research in social work: Implications from a study regarding spirituality . *Qualitative Social Work, 5*(4), 441-458.

Lincoln, Y.S. & Guba, E.G. (1985). Naturalistic inquiry. Beverly Hills, CA: Sage Publications.

Little, J.W. (1993). Teacher's professional development in a climate of educational reform. *Education Evaluation and Policy Analysis, 15*(2), 129-151.

Lui, M., & Shea, J. (2010). *School Improvement Grants take two: Lessons learned from Round 1*. Boston, MA: Mass Insight Education, Turn Around Group.

Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook* (2nd ed.). Thousand Oaks, CA: Sage Publications.

Mulford, W. (1998). Organizational learning and educational change. In A. Hargreaves, A. Lieberman, M. Fullan, & D. Hopkins (Eds.), *International handbook of educational change* (pp. 616-641). Norwell, MA: Kluwer Academic.

Neufeld, B., & Roper, D. (2003). *Coaching: A strategy for developing instructional capacity*. Providence, RI: The Annenberg Institute and the Aspen Institute Program on Education. Retrieved from http://www.edmatters.org/webreports/CoachingPaperfinal.pdf

Nye, B., Konstantopoulos, S. & Hedges, L. (2004). How large are teacher effects? *Educational Evaluation and Policy Analysis, 26*(3), 237-257.

Parr, J., & Ward, L. (2006). Building on foundations: Creating an online community. *Journal of Technology and Teacher Education, 14*(4), 775-793.

Perlman, C.L., & Redding, S. (Eds.). (2009). *Handbook of effective implementation of school improvement grants*. Lincoln, IL: Center on Innovation and Improvement.

Pollnow, S., & Tkatchov, O. (2012). *The practical guide to teaching and learning*. Lanham, MD: Rowman & Littlefield.

Reitzug, U.C. (2002). Professional development. In *School Reform Proposals: The Research Evidence.* Retrieved from http://nepc.colorado.edu/publication/school-reform-proposals-the-research-evidence

Ross, J.A., Rolheiser, C., & Hogaboam-Gray, A. (1999). Effects of collaborative action research on the knowledge of five Canadian teacher-researchers. *The Elementary School Journal, 99*(3), 255-274.

Sadler, D. R. (1989). Formative assessment and the design of instructional systems. *Instructional Science, 18*, 119-140.

Sparks, D. (2002). *Designing powerful professional development for teachers and principals.* Oxford, OH: National Staff Development Council.

Sparks, D., & Loucks-Horsley, S. (1989). Five models of staff development for teachers. *Journal of Staff Development*, *10*(4), 40-57.

Spector, P.E., (1992). *Summated rating scale construction: An introduction.* Newbury Park, CA*:* Sage Publications.

Spillane, J., Diamond, J., Walker, L., Halverson, R., & Jita, L. (2001). Urban school leadership for elementary science instruction: Identifying and activating resources in an undervalued school subject. *Journal of Research in Science Teaching*, *38*, 918-940.

Stake, R. (1995). Case studies. In N. Denzin & Lincoln (Eds.), *Handbook of qualitative inquiry* (pp. 236-247). Thousand Oaks, CA: Sage Publications.

Stein, M. K., & D'Amico, L. (2002). The district as a professional learning laboratory. In A. Hightower, M. Knapp, J. Marsh, & M. McLaughlin (Eds.), *School districts and instructional renewal* (pp. 76-93). New York, NY: Teachers College Press.

Stiggins, R. (2006). Assessment for learning: A key to motivation and achievement. *Edge, 2*(2), 3-19.

Stringer, E.T. (2007). *Action research* (3rd ed.). Los Angeles, CA: Sage Publications.

SurveyMonkey [Web-based Software]. Palo Alto, CA: SurveyMonkey.com LLC. Retrieved from http://www.surveymonkey.com

Swan, K. (2003). Learning effectiveness: what the research tells us. In J. Bourne & J. C. Moore (Eds). *Elements of quality online education, practice and direction* (pp. 13-45). Needham, MA: Sloan Center for Online Education.

Toll, C. (2005). *The literacy coach's survival guide: Essential questions and practical answers*. Newark, DE: International Reading Association.

Vygotsky, L.S. (1978). *Mind in society: The development of higher psychological processes.* Cambridge, MA: Harvard University Press.

Vygotsky, L. S. (1987). Thinking and speech (N. Minick, Trans.). In R..W. Rieber & A. S. Carton (Eds.), *The collected works of L. S. Vygotsky. Vol. 1. Problems of general psychology* (pp. 39–285). New York: Plenum Press.

Wedman, J.F.,Wedman, J.M., Klimczak, A.K. (1996). Increasing the congruence between course design and delivery: The value-added hand-off approach. *Performance and Instruction*. 35 (4), 18-24.

Yin, R. (1994). *Case study research: Design and methods* (2nd ed.). Beverly Hills, CA: Sage Publishing.

Zhao, Y., Let, J., Yan, B., Lai, C., & Tan, H. (2005). What makes the difference? A practical analysis of research on the effectiveness of distance learning. *Teachers College Record*, *107*(8), 1836-1884.

APPENDIX A

COMMON ACRONYMS

LEA……Local Education Agency (term often used for District)

PD……...Professional Development

PLA…….Persistently Lowest Achieving

PLC…….Professional Learning Community

SEA……State Education Agency

SIG…….School Improvement Grant

SIU…….School Improvement Unit

TLI…….Turnaround Leadership Institute (monthly workshop)

APPENDIX B

SIG SCHOOL DEMOGRAPHICS (2010)

School	Title I School	Students	Latino	White	Black	Native	Asian/Pac isle	Grades	Model	Region	Type
1	Yes	154	45%	25%	16%	13%	1%	Gr 6-12	Turnaround	Central	Urban
2	No	263	96%	0.00%	1.20%	1.80%	1%	Gr 9-12	Transformation	Central	Urban
3	Yes	100	95%	2.50%	2.50%	0.00%	0.00%	Gr 9-12	Turnaround	Central	Urban
4	Yes	260	76%	11%	7%	5%	1%	Gr 9-12	Turnaround	South	Urban
5	No	162	28%	56%	12%	2%	1%	Gr 9-12	Turnaround	Central	Urban
6	Yes	305	74%	11%	11%	4%	1%	Gr K-5	Turnaround	Central	Urban
7	Yes	243	0.00%	0.15%	0.15%	99%	0.70%	Gr 9-12	Turnaround	South	Reserv
8	Yes	340	26%	71%	1%	1%	1%	Gr K-12	Transformation	North	Rural
9	Yes	228	99%	n/r	n/r	n/r	n/r	Gr K-6	Transformation	South	Rural
10	Yes	100	n/r	n/r	n/r	99%	n/r	Gr 9-12	Transformation	North	Reserv
11	No	70	11%	61%	26%	2%	0.00%	Gr 9-12	Turnaround	North	Rural
12	Yes	191	0.01%	0.00%	0.00%	99.99%	0.00%	Gr K-8	Transformation	North	Rural
13	Yes	363	0.01%	0.00%	0.00%	99.99%	0.00%	Gr 7-12	Transformation	South	Reserv
14	Yes	395	0.01%	0.00%	0.00%	99.90%	0.00%	Gr K-6	Transformation	South	Reserv
15	No	192	59%	18%	14%	0	0	Gr 9-12	Transformation	South	Urban
16	No	235	59%	18%	14%	0	0	Gr 9-12	Transformation	South	Urban
17	Yes	707				99.90%		Gr 9-12	Transformation	North	Reserv
18	Yes	220				99.90%		Gr 7-8	Transformation	North	Reserv
19	Yes	400				99.90%		Gr K-6	Transformation	North	Reserv

APPENDIX C

STATEWIDE SURVEY (PRE & POST)

School Improvement Grant Teachers FA Cohort 1 Survey 2011

1. School Improvement Grant Professional Development Teacher Survey

Dear Educator,
The Department of Education School Improvement and Intervention Section is conducting this survey to gather information that will be used to assist us in how we select and design professional development for our schools awarded the School Improvement Grant.

We will report the data only in statistical summaries so that individuals cannot be identified.

The information you provide by responding to this questionnaire contributes important insight concerning teachers' attitudes and expectations of the School Improvement Grant Professional Development.

We conduct this survey with the teachers and trainer/coaches from Cohort 1 of the School Improvement Grant's implementation. Therefore, the value of your individual contribution is greatly increased because it will help improve the quality of professional development for subsequent cohorts. We encourage you to participate in this survey.

Thank you for your cooperation in this important effort.

Sincerely,

The School Improvement and Intervention Team

2. Professional Development Formative Assessment

The Formative Assessment Series led by Dr. Margaret Heritage is the focus of professional development for Cohort 1 Year 2, 2011 School Improvement Grant educators. Your Leadership Team will attend each session and then deliver the training back at your site through a Train the Trainer Model.

Information from this section will be used to determine what professional development and support teachers were provided through the Train the Trainer Model.

***1. Learning Goals and Success Criteria**

Indicate whether you Strongly Agree, Agree, Neither Agree nor Disagree, Disagree, Strongly Disagree.

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
Learning goals for lessons are shared with students	◯	◯	◯	◯	◯
Criteria for success is shared with students	◯	◯	◯	◯	◯
Students understand the criteria for success	◯	◯	◯	◯	◯
Criteria for success is discussed with students through use of exemplars	◯	◯	◯	◯	◯
Students are involved in developing initial criteria	◯	◯	◯	◯	◯

School Improvement Grant Teachers FA Cohort 1 Survey 2011

2. Please share any other comments you may have concerning Learning Goals and Success Criteria.

***3. Teacher's Use of Formative Assessment Strategies During Lesson to Elicit Evidence**

Indicate whether you Strongly Agree, Agree, Neither Agree nor Disagree, Disagree, Strongly Disagree.

Formative Assessment Strategies used in the classroom include:

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
Asking questions orally with wait time	◯	◯	◯	◯	◯
Asking questions and students write responses	◯	◯	◯	◯	◯
Teacher listens to students' discussion	◯	◯	◯	◯	◯
Teacher listens to students' explanations	◯	◯	◯	◯	◯
Teacher observes students' behavior	◯	◯	◯	◯	◯
Teacher provides instructional tasks	◯	◯	◯	◯	◯
Teacher analyzes student representations	◯	◯	◯	◯	◯
Teacher analyzes student multiple choice responses	◯	◯	◯	◯	◯
Teacher observes students' end of lesson review	◯	◯	◯	◯	◯

4. Please share any other comments you may have concerning use of formative assessment strategies.

School Improvement Grant Teachers FA Cohort 1 Survey 2011

***5. Adjusting Instruction Based on Student Data and Evidence**

Indicate whether you Strongly Agree, Agree, Neither Agree nor Disagree, Disagree, Strongly Disagree.

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
Teacher elicits diagnostic information from individual students and adjusts instruction	◯	◯	◯	◯	◯
Teacher shows flexibility in response to evidence and adjusts instruction.	◯	◯	◯	◯	◯
Teacher persists in seeking effective approaches for students who need help (small groups,whole group, individual)	◯	◯	◯	◯	◯
Teacher seizes a major opportunity to enhance learning by building on student interests	◯	◯	◯	◯	◯
Teacher seizes a major opportunity to enhance learning by building on a spontaneous event.	◯	◯	◯	◯	◯

6. Please share any other comments you may have concerning adjusting instruction based on evidence.

School Improvement Grant Teachers FA Cohort 1 Survey 2011

***7. Teacher Provides Feedback to the Students**

Indicate whether you Strongly Agree, Agree, Neither Agree nor Disagree, Disagree, Strongly Disagree.

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
Feedback the teacher provides is descriptive and clear	◯	◯	◯	◯	◯
Feedback the teacher provides is based on success criteria	◯	◯	◯	◯	◯
Feedback the teacher provides is related to student interpretation of student's work	◯	◯	◯	◯	◯
Feedback the teacher provides helps the student (s) know how to move forward in learning	◯	◯	◯	◯	◯
Students are given a chance to use the feedback in a timely manner	◯	◯	◯	◯	◯

8. Please share any other comments you may have concerning the teacher providing feedback to students.

School Improvement Grant Teachers FA Cohort 1 Survey 2011

***9. Student Self and Peer Assessment**

Indicate whether you Strongly Agree, Agree, Neither Agree nor Disagree, Disagree, Strongly Disagree.

	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
Teacher provides opportunities for student self-assessment	◯	◯	◯	◯	◯
Teacher supports students in the process of self-assessment	◯	◯	◯	◯	◯
Teacher provides opportunities for peer-assessment	◯	◯	◯	◯	◯
Teacher makes use of either self- or peer-assessment during instruction	◯	◯	◯	◯	◯
Students are given a chance to use the feedback	◯	◯	◯	◯	◯
Teacher provides opportunity for students to use feedback from either peer- or self-assessment	◯	◯	◯	◯	◯

10. Please share any other comments you may have concerning the teacher providing opportunities for student self-assessment and peer-assessment.

3. Demographics

***1. Please select your current position at your school, district, or charter.**

- ☐ Teacher
- ☐ Instructional Coach
- ☐ Trainer of School Improvement Grant Formative Assessment Professional Development

School Improvement Grant Teachers FA Cohort 1 Survey 2011

***2. Our school/district/charter may be classified as:**

- ◯ urban.
- ◯ rural.
- ◯ reservation.
- ◯ other.

3. If you selected other please write in the classification of your district or charter.

4. If you are a classroom teacher what grade levels are the students in the classes you currently teach?

- ☐ Prekindergarten
- ☐ Kindergarten
- ☐ 1st grade
- ☐ 2nd grade
- ☐ 3rd grade
- ☐ 4th grade
- ☐ 5th grade
- ☐ 6th grade
- ☐ 7th grade
- ☐ 8th grade
- ☐ 9th grade
- ☐ 10th grade
- ☐ 11th grade
- ☐ 12th grade
- ☐ Other

5. If you departmentalize or teach high school, please type your subject(s) and/or special area(s)in this space.

***6. How many years have you been teaching? (include years as a coach, mentor, and or teacher on assignment)**

School Improvement Grant Teachers FA Cohort 1 Survey 2011

***7. Gender**

- ◯ Male
- ◯ Female

***8. Age**

- ◯ 20-29
- ◯ 30-39
- ◯ 40-49
- ◯ 50 and over

9. Please use this space for any additional comments.

APPENDIX D

CLASSROOM OBSERVATION INSTRUMENT

Formative Assessment Observation Feedback Form

adapted from *Formative Assessment Classroom Observation Tool* by Heritage, Janssen, Tanney, & Zarach for Syracuse City School District (2008)

and *The Framework for Professional Practice* by Charlotte Danielson (2007)

Teacher:	**Subject:**	**Time in:**
Date:	**Observer:**	**Time out:**

Learning Goals and Success Criteria	Teacher used formative assessment strategies during lesson to elicit evidence	Teacher showed evidence of adjusting instruction based on evidence	Teacher provided feedback to the students (individual or class)	Student Self and Peer Assessment
• Teacher shared learning goals for lesson with students • Teacher shared criteria for success with students • Success criteria were clear and were understood by students • Teacher discussed criteria through use of exemplars • Students were involved in developing initial criteria	• Asking questions orally with wait time • Asking questions, written • Listening to discussion • Listening to explanations • Engaging students in discussion • Observations • Instructional Tasks • Analysis of student representation • Multiple choice • a, b, c , d, cards • End of lesson student review • Other:	• Teacher elicits diagnostic information from individual students and adjusts instruction • Teacher shows flexibility in response to evidence and adjusts instruction • Teacher persists in seeking effective approaches for students who need help (small groups-whole group-individual) • Teacher seizes a major opportunity to enhance learning by building on student interests • Teacher seizes a major opportunity to enhance learning by building on a spontaneous event	• Feedback was descriptive and clear • Feedback was based on success criteria • Feedback was related to student interpretation of student's work • Feedback helped the student(s) know how to move forward in learning • Students were given a chance to use the feedback	• Evidence of self-assessment • Teacher supported students in the process of self-assessment • Teacher provided opportunity for peer-assessment • Teacher made use of either self or peer-assessment during instruction • Teacher provided opportunity for students to use feedback from either peer- or self-assessment
Rating_____	Rating_____	Rating_____	Rating_____	Rating_____

Evidence:					

Rating

N/A = *not observed/not applicable (no elements observed)*
0 = *Elements should have been present but were not*
1 = *Elements are used inappropriately or ineffectively*
2 = *Elements are used in a limited fashion / or have minimal impact*
3 = *Teacher is developing in their use of elements*
4 = *Teacher is proficient in their use of elements*
5= *Teacher is exemplary in their use of elements*

APPENDIX E

EMAIL INTERVIEW SI SPECIALISTS

School Improvement Staff Participants

Formative Assessment Questionnaire/Interview

Perception of School Improvement Grant PD and Formative Assessment Train the Trainer Model to inform development of the model and help answer the Research Questions:

1. "What effect does the Train the Trainer element have on classroom instruction specifically as it relates to formative assessment, and
2. "To what extent does the Trainer/coach support the implementation of the Train the Trainer professional development at the classroom level?"

Purpose The information you contribute will only be reported in qualitative and or statistical summaries so that individuals cannot be identified. All participants' identities will remain confidential. The research and findings will be reported to and shared with the School Improvement Staff at the completion of the project.	
Directions Please use this form to type your responses into the boxes next to the questions, save and email back to me.	
I. Formative Assessment Professional Development and Train the Trainer Model	**Response**
1. Describe your experience in the Formative Assessment Professional Development session(s).	1.
2. In what ways might we improve the Formative Assessment professional development model?	2
3. Describe your experience with and expectations of the Train the Trainer component that was part of the Formative Assessment professional development model.	3.

4. In what ways do you feel the Train the Trainer component could be improve upon to support your delivery of the professional development back at your district or site?	4.
5. In what ways do you feel the Train the Trainer component to deliver formative assessment professional development has impacted the districts and schools that you serve?	5.
6. Is there anything else that anyone would like to add?	6.
II. Formative Assessment Professional development Training and Learning Implemented at the <u>District and School Sites</u>	**Response**
7. How do you perceive the Formative Assessment Professional Development is delivered at the district or charters you assist?	7.
8. How do you perceive the Formative Assessment Professional Development is evaluated at the district or charters you assist?	8.
9. How do you perceive the coaches supporting the implementation of the Formative Assessment Professional Development in the classrooms at the district or charters you assist?	9.
10. How do you perceive the teachers implementing the learning from the Formative Assessment Professional Development in the classrooms at the district or charters you assist?	10.

11. Is there anything else you would like to add?	11.
Thank you Thanks again for taking the time to complete the questionnaire. Your input is greatly appreciated and the results of the questionnaire will be shared in a summary that will be sent to you at the completion of the project.	.

APPENDIX F

ADMINISTRATOR/PRINCIPAL QUESTIONNAIRE

Administrator Questionnaire

Purpose

Administrator/Principal Participants

Mid-year Formative Assessment Questionnaire/Interview

The purpose of this questionnaire is to gather data on the administrator/principal's perception of School Improvement Grant Formative Assessment PD Train the Trainer Model. These data will help inform development of the model and answer the research questions:
1. "What effect does the Train the Trainer element have on classroom instruction specifically as it relates to formative assessment?
2. "To what extent does the Trainer/coach support the implementation of the Train the Trainer professional development at the classroom level?"

The information you contribute will only be reported in qualitative and or statistical summaries so that individuals cannot be identified. All participants' identities will remain confidential.

The research and findings will be reported to and shared in summary findings with participants on completion of the project.

I. Formative Assessment Professional Development and Train the Trainer Mode...

Please select the best response or type your responses into the box following each open-ended question.

***1. I have attended the Formative Assessment Professional Development Series presented by Margaret Heritage.**

- ◯ yes
- ◯ no

2. If you answered yes above, please check the sessions that you were able to attend.

- ☐ August face to face session
- ☐ September webinar
- ☐ October face to face session
- ☐ November webinar
- ☐ January webinar

3. If you attended any of the sessions, describe your overall experience in the Formative Assessment Professional Development Series session(s).

Administrator Questionnaire

4. If you attended any of the sessions, please tell us in what ways we might improve the Formative Assessment Professional Development Series sessions?

5. Describe your experience with and expectations of the Train the Trainer component that was part of the Formative Assessment professional development model.

***6. How many formative assessment trainings have you or your leadership delivered to the teachers at your site?**

- ☐ One training
- ☐ Two trainings
- ☐ Three trainings
- ☐ Four trainings
- ☐ Five or more trainings
- ☐ We have not delivered the formative assessment trainings at our site yet.

7. How do you perceive the Formative Assessment Professional Development is delivered your school?

***8. I delivered the formative assessment professional develoment that I learned in Margaret Heritage's sessions to teachers at my site.**

- ◯ yes
- ◯ not yet

9. In what ways do you feel the Train the Trainer component could be improve upon to support you or your coach's delivery of the professional development back at your site?

10. In what ways do you feel the Train the Trainer component to deliver formative assessment professional development has impacted your teachers' classroom practice?

Administrator Questionnaire

11. Please use this space to add any comments concerning the formative assessment Train the Trainer professional model.

II. Formative Assessment PD Training & Learning Implemented in Classroo...

Please select the best response or type your responses into the box following each open-ended question.

12. In what ways have you as an administrator/principal supported the teachers in their implementation of the Formative Assessment process in their classrooms?

***13. I conduct classroom observations at my site.**

◯ yes ◯ no

***14. Approximately how often do you observe each teacher's classrooms for formative assessment behaviors?**

- ☐ daily
- ☐ one time per week
- ☐ more than one time per week
- ☐ once a month
- ☐ less than once a month
- ☐ not yet

Other (please specify)

Administrator Questionnaire

15. I observe formative assessment behaviors based on the following criteria (please check all that apply)

- [ ] Learning Goals
- [ ] Success Criteria
- [ ] Formative Assessment Strategies
- [ ] A teacher eliciting evidence from students
- [ ] A teacher changing instruction based on evidence
- [ ] A teacher providing specific feedback that moves learning forward
- [ ] Opportunities for student self assessment
- [ ] Opportunities for peer to peer assessment
- [ ] I have not used the formative assessment criteria yet

***16. I have observed my trainers or coaches model formative assessment strategies in teacher classrooms.**

- ◯ yes
- ◯ not yet

17. I support the implementation of formative assessment professional development in our classrooms.

	Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree
Support of Formative Assessment	◯	◯	◯	◯	◯

***18. My coach observes each teacher's classrooms for formative assessment behaviors:**

- [ ] daily
- [ ] one time per week
- [ ] more than one time per week
- [ ] once a month
- [ ] less than once a month
- [ ] not yet

Other (please specify)

Administrator Questionnaire

19. In what ways do you perceive the teachers have implemented the learning from the Formative Assessment PD in their classroom practice at your school?

20. Please use this space to add any additional comments you have on the implementation of the formative assessment process in your teachers' classroom practice.

APPENDIX G

TRAINERS' QUESTIONNAIRE

Questionnaire-Coaches

Purpose

Coach/Trainer Participants

Mid-year Formative Assessment Questionnaire/Interview

The purpose of this questionnaire is to gather data on the trainer/coaches' perception of School Improvement Grant Formative Assessment PD Train the Trainer Model. These data will help inform development of the model and answer the research questions:
1. "What effect does the Train the Trainer element have on classroom instruction specifically as it relates to formative assessment?
2. "To what extent does the Trainer/coach support the implementation of the Train the Trainer professional development at the classroom level?"

The information you contribute will only be reported in qualitative and or statistical summaries so that individuals cannot be identified. All participants' identities will remain confidential.

The research and findings will be reported to and shared in summary findings with participants on completion of the project.

I. Formative Assessment Professional Development and Train the Trainer Mode...

Please select the best response or type your responses into the box following each open-ended question.

***1. How many formative assessment trainings have you or your leadership delivered to the teachers at your site?**

- ☐ One training
- ☐ Two trainings
- ☐ Three trainings
- ☐ Four trainings
- ☐ Five or more trainings
- ☐ We have not delivered the formative assessment trainings at our site yet.

***2. I feel the training received in the Formative Assessment Professional Development Series prepared our leadership team for delivering formative assessment training at our site.**

	Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree
Select one	◯	◯	◯	◯	◯

Questionnaire-Coaches

***3. I feel that most of our teachers are implementing the learning from our formative assessment trainings at our sites.**

	Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree
Select one	◯	◯	◯	◯	◯

***4. I feel the formative assessment training delivered at my site had a positive impact on most of our teachers' classroom practices.**

	Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree
Select one	◯	◯	◯	◯	◯

5. In what ways do you feel the Train the Trainer component could be improved upon to support your delivery of the professional development back at your site?

II. Formative Assessment PD Training & Learning Support in Classroom Pr...

Please select the best response or type your responses into the box following each open-ended question.

***6. I conduct classroom observations at my site.**

◯ yes ◯ no

***7. Approximately how often do you observe each teacher's classrooms for formative assessment behaviors?**

- ☐ daily
- ☐ one time per week
- ☐ more than one time per week
- ☐ once a month
- ☐ less than once a month
- ☐ not yet

Other (please specify)

Questionnaire-Coaches

***8. I observe formative assessment behaviors based on the following criteria (please check all that apply)**

- [ ] Learning Goals
- [ ] Success Criteria
- [ ] Formative Assessment Strategies
- [ ] A teacher eliciting evidence from students
- [ ] A teacher changing instruction based on evidence
- [ ] A teacher providing specific feedback that moves learning forward
- [ ] Opportunities for student self assessment
- [ ] I have not used the formative assessment criteria yet
- [ ] Opportunities for peer to peer assessment

***9. I model formative assessment strategies in teacher classrooms.**

- ◯ yes
- ◯ not yet

10. In what other ways have you as a coach/trainer supported the teachers in their implementation of the Formative Assessment process in their classrooms?

***11. My school administrator supports the implementation of formative assessment professional development in our classrooms.**

	Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree
Select one	◯	◯	◯	◯	◯

***12. My administrator observes each teacher's classrooms for formative assessment behaviors:**

- [ ] daily
- [ ] one time per week
- [ ] more than one time per week
- [ ] once a month
- [ ] less than once a month
- [ ] not yet

Other (please specify)

APPENDIX H

TEACHERS' QUESTIONNAIRE

Questionnaire-Teachers

Purpose

Teacher Participants

Mid-year Formative Assessment Questionnaire/Interview

The purpose of this questionnaire is to gather data on the teacher's perception of School Improvement Grant Formative Assessment PD Train the Trainer Model. These data will help inform development of the model and answer the research questions:
1. "What effect does the Train the Trainer element have on classroom instruction specifically as it relates to formative assessment?
2. "To what extent does the Trainer/coach support the implementation of the Train the Trainer professional development at the classroom level?"

The information you contribute will only be reported in qualitative and or statistical summaries so that individuals cannot be identified. All participants' identities will remain confidential.

The research and findings will be reported to and shared in summary findings with participants on completion of the project.

I. Formative Assessment Professional Development and Train the Trainer Mode...

Please select the best response or type your responses into the box following each open-ended question.

***1. I have attended the Formative Assessment Professional Development Series presented by Margaret Heritage.**

- ◯ yes
- ◯ no

***2. How many formative assessment trainings have your coaches or leadership delivered to the teachers at your site?**

- ☐ One training
- ☐ Two trainings
- ☐ Three trainings
- ☐ Four trainings
- ☐ Five or more trainings
- ☐ We have not delivered the formative assessment trainings at our site yet.

***3. I feel the training on formative assessment I received at my site helped me to begin to implement the formative assessment process in my classroom.**

	Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree
Please select one	◯	◯	◯	◯	◯

Questionnaire-Teachers

***4. I feel the training on formative assessment has had a positive impact on my classroom practice.**

	Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree
Please select one	◯	◯	◯	◯	◯

5. In what ways do you feel the formative assessment professional development has impacted your classroom practice?

II. Formative Assessment PD Training & Learning Support in Classroom Pr...

Please select the best response or type your responses into the box following each open-ended question.

***6. Approximately how often have you been observed by your coach or trainer for formative assessment behaviors in your classroom?**

- ☐ daily
- ☐ one time per week
- ☐ more than one time per week
- ☐ once a month
- ☐ less than once a month
- ☐ not yet

Other (please specify)

***7. I have been observed for formative assessment behaviors based on the following criteria (please check all that apply)**

- ☐ Learning Goals
- ☐ Success Criteria
- ☐ Formative Assessment Strategies
- ☐ A teacher eliciting evidence from students
- ☐ A teacher changing instruction based on evidence
- ☐ A teacher providing specific feedback that moves learning forward
- ☐ Opportunities for student self assessment
- ☐ Opportunities for peer to peer assessment
- ☐ I have not used the formative assessment criteria yet

Questionnaire-Teachers

***8. My trainer or coach has modeled formative assessment strategies in my classroom.**

- ◯ yes
- ◯ not yet

9. In what other ways has your coach/trainer supported you in your implementation of the Formative Assessment process in your classrooms?

***10. My school administrator supports the implementation of formative assessment professional development in our classrooms.**

	Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree
Please select one	◯	◯	◯	◯	◯

***11. My administrator observes each teacher's classrooms for formative assessment behaviors:**

- ☐ daily
- ☐ one time per week
- ☐ more than one time per week
- ☐ once a month
- ☐ less than once a month
- ☐ not yet

Other (please specify)

APPENDIX I

INSTITUTIONAL REVIEW BOARD APPROVAL

ASU Knowledge Enterprise Development

Office of Research Integrity and Assurance

To:	Oscar Jimenez-Castellanos
From:	Mark Roosa, Chair Soc Beh IRB
Date:	08/05/2011
Committee Action:	**Exemption Granted**
IRB Action Date:	08/05/2011
IRB Protocol #:	1108006715
Study Title:	Implementing a K12 Train the Trainer Professional Development Model

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.