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Integrating Multiple Professional Learning Frameworks to Assist Teachers' Reflective Inquiry

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Introduction

The purpose of this study was to determine whether teacher reflective inquiry facilitated by multiple professional learning frameworks resulted in teachers changing their dispositions about teaching and their teaching practice. By examining the relationship between teachers' beliefs and behaviors during a reflective inquiry process, this study provides insight about the support required for teachers to engage in meaningful reflection that leads to improved teaching and learning.

Review of Literature

Scholars argue that inquiry-based learning is more likely to lead to higher-order student thinking than traditional instruction (Gningue, Schroder, & Peach, 2014; Marshall and Horton 2011); however, teachers are not likely to promote inquiry-based learning unless they themselves are engaged in reflective inquiry about their own practice (Silm, Tiitsaar, Pedaste, Zacharia, & Papaevripidou, 2017). Gningue et al. (2014) argue, "helping teachers make such a fundamental shift in practice requires very powerful approaches to professional development" (p. 19).

Reflective inquiry is necessary for transformative learning because "learning can only be transformative if it involves fundamental questioning or reordering of how one thinks and acts" (Lyons, Halton, & Freidus, 2013, p. 173). For significant change in teaching behavior to occur, reflection on one's current teaching practice, potential change, and the change process itself is necessary, and such transformative learning requires both multiple modes of reflection and collaboration with colleagues (Lebak & Tinsley, 2010). Authentic inquiry requires that reflection and action be continuously linked (Bray, 2002). John Dewey (1910) believed that the purpose of reflection is to solve "problems faced in habitual ways of action" (p. 61), and he argued that we must draw conclusions by subjecting our beliefs to scrutiny. Osterman and Kottkamp (2004) contend, "Reflective practice seeks to identify, assess, and change the underlying beliefs and assumptions, the theories-in-use, which directly influence actions" (p. 16).

In this study, action research was the core framework for reflective inquiry, with the action research supported by a variety of other professional learning frameworks, including a critical friend, reflective writing, a collegial support group, and clinical supervision. Below we briefly review each of these frameworks.

Action Research

Kurt Lewin (1948), generally considered to be the father of action research, described action research as a recurring cycle of the following steps: (a) identify a general idea, (b) do fact finding concerning the idea, (c) design a tentative overall plan and first action step, (d) take first action step, (e) evaluate, (f) revise plan, (g) take second action step, and so on. Stephen Corey (1949), credited with applying action research to education, described three characteristics of action research. First, its purpose is to improve practice. Second, practitioners carry it out. Third, practitioners are more likely to be influenced by their own action research than by traditional research carried out by researchers outside of the practitioners' work setting. Gordon (2008) describes three ways in which action research integrates research and action: It integrates the investigation of a problem with the solving of that problem, the researcher with the practitioner, and the location of the research with its application. Four specific domains of reflection in action research described by Luttenburg, Oolbakkink-Marchand, and Meijer (2017) are scientific, artistic, moral, and technical. Teachers who participated in action research studied by Vaughn, Parsons, Kologi, & Saul (2014) viewed themselves as empowered as they "engaged in reflective thinking that propelled them forward in their view of themselves, their work, and their beliefs in what they could become" (p. 647). A range of benefits of action research reported by Sullivan and Glanz (2013) include empowering teachers, improving decision making, fostering reflection, promoting ongoing instructional improvement, and supporting professional learning.

Critical Friend

Although a variety of professional learning frameworks can support reflective inquiry, facilitation is critical (Lyons et al., 2013). One popular type of facilitation used in this study was the critical friend. Costa and Kallick (1993) describe a critical friend as "a trusted person who asks provocative questions, provides data to be examined through another lens, and offers critique of a person's work as a friend" (p. 50). Critical friends' partners, according to Wright and Amina (2015), "receive feedback and allow the critical friend to raise questions and judgments about their professional practice so they can reflect on their actions and thinking" (pp. 442–443). In action research, the critical friend assumes the role of "a research facilitator who helps novice researchers to begin their research projects, advises them how to proceed and promotes learning capacity of teacher researchers through reflective practice skills" (Juma, Lehtomäki, & Naukkarinen, 2017, p. 721). Trust is considered essential to the critical friendship by Costa and Kallick (1993), who recommend that the critical friend build trust by engaging in active listening, offering judgments only when asked by the client to do so, being honest when discussing the client's work, and advocating for the client's success.

Reflective Writing

Pereira, Parente, & da Silva (2016) describe reflective writing as a scaffold for teachers' reflection aimed at understanding and improving their practice. They argue that "writing about experience extends thinking, allowing thinking about thinking, and this meta-cognitive dimension of writing has a powerful heuristic force..." (p. 616). More specifically, reflective writing can help teachers make meaning out of action research in which they are engaged (Feldman & Bradley, 2019).

Christensen et al. (2004) focus specifically on journal writing, maintaining that it fosters reflective inquiry: "By keeping a journal, teachers have an avenue to explore reactions to experiences, readings, and personal interactions. The writing process ensures inquiry" (p. 34). Attard (2012) found that journal writing that analyzed professional experiences allowed teachers to observe their "own knowledge construction process" (p. 202) by tracking their thinking and learning over time.

A type of reflective writing originally promoted by Sergiovanni and Starratt (1983) involves the construction of an educational platform, "a floor of beliefs, opinions, values, and attitudes that provide a foundation for practice" (p. 70). Sergiovanni and Starratt suggest important considerations for writing a platform, including one's views on the aims of education, knowledge, the social significance of the student's learning, the learner, the curriculum, the teacher, preferred pedagogy, and preferred school climate. Writing an educational platform can not only clarify a teacher's beliefs but also promote the teacher's reflection on her or his teaching and serve as a guide for future growth. If a teacher's reflection on both his or her educational platform and teaching behaviors reveals that the teacher's beliefs and behaviors are inconsistent with each other, the teacher will experience the discomfort of cognitive dissonance, which in turn motivates the teacher to reduce that dissonance. The dissonance might be reduced by changing beliefs, trivializing the importance of the dissonance, or changing teaching behaviors (Festinger 1957; Walton, 2011). If the latter option is chosen, continued reflective inquiry is one pathway for the teacher to change teaching behaviors so that they become consistent with teacher beliefs (Golombeck & Johnson 2004).

Collegial Support Group

Hales (2017) describes the advantages of a collegial support group he studied over traditional professional development: "Instead of scripted, one-size-fits-all professional development, these educators held conversations, shared practice, and negotiated ways to challenge one another toward becoming better teachers" (p. 32). There are a variety of types of collegial support groups focused on the improvement of teaching and learning, with considerable overlap in the descriptions of these groups. The support used in this study most closely resembles a collegial group described by Keedy, Gordon, Winter, and Newton (2001). This type of group is "designed to maintain a tight focus on individual teacher instructional improvement" (p. 35). Teachers in the group establish a yearlong focus for instructional improvement and design "game plans" for meeting their improvement objectives. The teachers implement their game plans between group meetings, which occur every few weeks. At the group meetings, the teachers share their progress on game-plan implementation, and colleagues provide analysis and feedback to each other on their progress as well as suggestions for a revised game plan. Each teacher then formulates a new game plan to be implemented prior to the next group meeting. Keedy et al. reported that as a

result of this process, “teachers become analysts, problem-solvers, and action researchers of their classroom practice. They learn instructional strategies both individually from their experimentation cycle and collectively through group interaction” (p. 35).

Clinical Supervision

Clinical supervision, originally conceived by Morris Cogan (1973) and Robert Goldhammer (1969) at Harvard University, involves an instructional leader and teacher in an “ongoing cycle of systematic planning, observation, and critical analysis” (Ibara, 2013, p. 245). Unlike teacher evaluation, clinical supervision is “formative and reflective in nature and focused on the needs of the individual teacher” (McGhee & Stark, 2018, p. 727). Although a number of models of clinical supervision have been developed, they all include Garman’s (1990) basic stages of “establishing a relationship with the teacher, observing classroom teaching, analyzing classroom scenarios, and holding a conference with the teacher” (p. 423). Additionally, all of the approaches to clinical supervision that have evolved over time are “cyclic, systematic, and teacher-centered approaches. In all models, new understandings are formulated based on reflection and experience” (Farhat, 2016, p. 422).

Although clinical supervision of teaching has been with us for a half century, it remains a viable model for assisting teachers, and research on clinical supervision continues to yield positive results. For example, in a study by Farhat (2016), teachers involved in clinical supervision reported that they appreciated the collaborative nature of the process, learning new teaching strategies, and being allowed to freely express their opinions in dialogue with the supervisor. The teachers reported that the process had resulted in personal growth, improved teaching, and increased efficacy. Moreover, the teachers did not experience the anxiety typically associated with other types of supervision.

Integration of Professional Learning Frameworks

Zepeda (2011) argues that multiple professional learning frameworks should be job-embedded and integrated in a coherent manner. In this study, the various frameworks described above (action research, critical friend, reflective writing, collegial support group, and clinical supervision) were integrated around the concept of dialogic reflective inquiry, which Gordon (2016) proposes as the sine qua non of instructional improvement. Gordon notes that “inquiry, reflection, and dialogue are not the same thing, but when integrated, they become interwoven, interactive, and synergistic” (p. 27).

The Reflective Inquiry Project

The relationships among the five professional learning frameworks used in the project are illustrated in Figure 1. The process began with two individual meetings of the critical friend—who was one of the authors and an experienced educational leader from outside the school—with each of three teachers who participated in the study. The first round of individual meetings was aimed at starting the process of building a relationship with the teachers and gaining insight into their personal and professional contexts, providing an overview of the reflective inquiry process, explaining the concept of an educational platform, and asking the teachers to reflect on and

develop their platforms prior to the next individual meeting. In the second round of individual meetings, the teachers shared and discussed their educational platforms with the critical friend, and the critical friend and teachers discussed the action research process in depth. The critical friend asked the teachers to spend the next few weeks reflecting on their teaching in comparison with their educational platforms, recording those reflections in their journals, identifying a discrepancy between platform and teaching they wished to address, selecting an action research topic, and preparing an initial game plan for the action research.

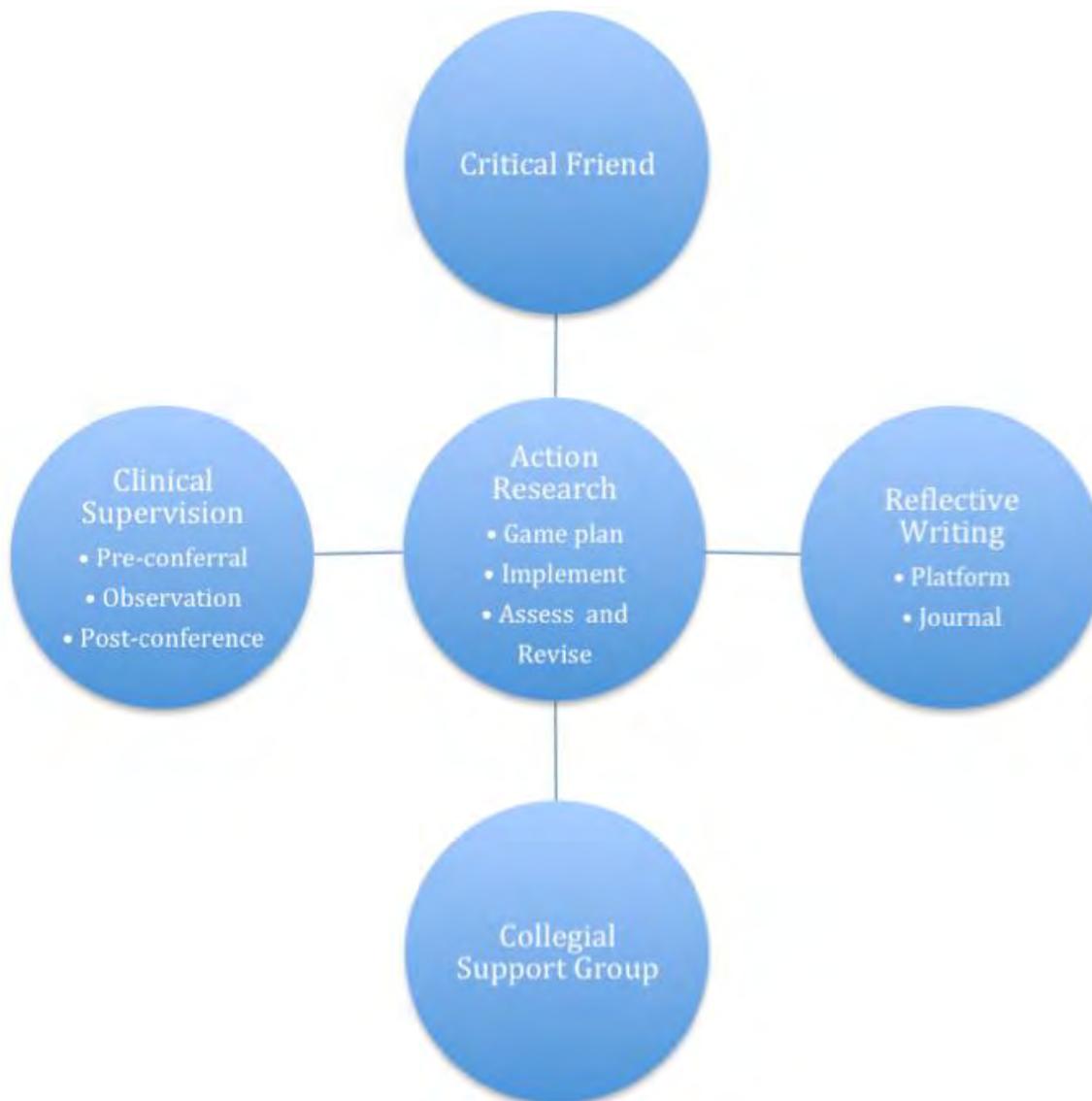


Figure 1. Professional development frameworks supporting teachers' reflective inquiry

In the first meeting of the collegial support group, the group discussed group norms and expectations and began building a culture of collegial learning. The teachers shared their platforms, journal reflections, discrepancies they wished to address, action research topics and

initial game plans. The critical friend and teachers engaged in active listening and reflective questioning. The teachers were asked to initiate their game plans and to reflect on and write about implementation, specifically about their teaching behaviors in relationship to their platforms during implementation. Each of the remaining two group meetings occurred at the end of a five to six-week action research cycle. The later group meetings began with each teacher sharing progress or issues concerning her or his action research project, often referring to their journal reflections. The teachers also shared findings from their comparison of their teaching behaviors with their platforms. Each teacher had the opportunity to express professional concerns arising from this work and elicit feedback. Toward the end of the second group meeting, the teachers shared a new game plan based on their progress to date and dialogue with the other teachers and the critical friend. At the end of the third and final group meeting, the teachers shared plans they had for self-directed continuation of their action research beyond the conclusion of the study.

Two clinical supervision cycles for each teacher were provided by the critical friend, one following the first meeting of the collegial support group and the initiation of initial action plans, and the second after the second group meeting and initiation of revised game plans. The clinical supervision consisted of pre-conferential on what behaviors the teacher wished the critical friend to observe and the specific data that would be gathered, a non-evaluative classroom observation during which the critical friend gathered the observation data agreed upon in the pre-conferential, and a post-conference during which the critical friend shared the observation data and both parties collaboratively interpreted those data. The observation data were focused on teacher decisions and classroom events related to the teacher's game plan for reducing dissonance between educational beliefs and teaching behaviors. Discussion of the observation data during the post-conference dovetailed with discussions about the teachers' latest entries in their reflective journals, the progress of the action research in general, and changes teachers could make in their game plans and teaching to move closer to their improvement goals. Clinical supervision also interacted with the collegial support group meetings, with ideas discussed during the group meetings leading to observation and conferential in clinical cycles, and data and discussions from the clinical supervision becoming sources of discussion in the second and third collegial support meetings.

The final round of individual meetings occurred the week following the last group meeting. The purpose of these meetings was to debrief regarding the teachers' perceptions of the various reflective processes employed during the project, the teachers' professional learning, and any changes in the teachers' beliefs and/or behaviors.

Research Question and Methods

This study addressed the following research question: How do teachers experience learning when they engage in ongoing reflective inquiry regarding their teaching beliefs, teaching behaviors, the comparison of those beliefs and behaviors, and efforts to make their beliefs and behaviors more congruent? The participants for this study were three Texas public school teachers from the same middle school, each with 5–20 years of teaching experience, who expressed interest in exploring their educational beliefs and reflecting on their teaching practices. The selected school had a principal who was willing to visit with the critical friend about his teaching staff, provided time

and a place for the critical friend to initially meet with the prospective participants, and professed support for the type of reflective practice and conversation that this study required. Data collected for the study included audio recordings of individual conversations with each teacher conducted by the critical friend, two post-observation conferences, and three collegial support group meetings. Each teacher also created an educational platform by responding to the following questions:

- What are the most important aims of education?
- What is the significance of school for students?
- What is the role of the student?
- What is the role of the teacher?
- What does it mean to teach?
- What does it mean to learn?
- What should be the content of the curriculum?
- What should be assessed or measured?
- How would you describe the ideal school?
- What should school embody?

Additional data included the teachers' action research game plans, classroom observation data and reflective journals. Table 1 reviews when different types of data were gathered in relationship to various activities during the inquiry project.

Table 1
Summary of Data Gathering in Relation to Inquiry Project Activities

Inquiry Project Activities	Data Gathered
Project initiation: critical friend and teacher discuss teacher's personal and professional context, reflective inquiry, and the concept of the educational platform; teacher is invited to develop platform	<ul style="list-style-type: none"> • Audio recordings of individual conversations with critical friend
Teachers develop their educational platforms	<ul style="list-style-type: none"> • Audio recordings of individual conversations with critical friend
Teacher presents educational platform to critical friend; in-depth discussion of inquiry project	<ul style="list-style-type: none"> • Audio recordings of individual conversations with critical friend • Teachers' educational platforms
Teachers individually reflect on platforms in relation to teaching behaviors, identify discrepancies, record reflections in journals, select action research topics, design initial game plans	<ul style="list-style-type: none"> • Email communications between individual teachers and critical friend

First collegial support group meeting	<ul style="list-style-type: none"> • Audio recordings of group meeting • Teachers' reflective journals • Action research topics and initial game plans
<ul style="list-style-type: none"> • Teachers initiate action research game plans • First round of clinical supervision cycles • Teacher reflection and reflective writing 	<ul style="list-style-type: none"> • Classroom observation data • Audio recordings from individual clinical conferences
Second collegial support group meeting	<ul style="list-style-type: none"> • Audio recordings of group meeting • Teachers' reflective journals • New game plans
<ul style="list-style-type: none"> • Teachers continue action research with new game plans • Second round of clinical supervision cycles 	<ul style="list-style-type: none"> • Classroom observation data • Audio recordings from individual clinical conferences
Third collegial support group meeting	<ul style="list-style-type: none"> • Audio recordings of group meeting • Teachers' reflective journals • New game plan for self-directed continuation of action research
Third round of individual meetings with critical friend	Audio recordings of individual meetings

Data analysis for each case began with several reviews of transcripts of audio recordings and other documents, including teachers' educational platforms, reflective journals, action research game plans, and classroom observation data from clinical supervision cycles. Analysis of transcripts included open coding of complete teacher thoughts and axial coding to identify categories and themes. Comparison of the different types of data gathered from individual teachers was critical to this study for two reasons. First, there was a need to see if perceptions expressed by a teacher across different data sources were consistent. Second, since the purpose of the teacher inquiry was teacher growth, data needed to be compared over time to assess whether such growth was occurring. To check for individual teacher consistency, several types of data were compared. Table 2 illustrates the various comparisons across data sources made for each teacher. To check for change over time, we compared different data sets from the same data sources. Data from (a) the critical friend's conversations with individual teachers; (b) different reflections over time in the teacher's journal; (c) the game plans from earlier and later in the project; (d) individual statements during the first, second, and third support group meetings; and (e) the two clinical supervision cycles were compared for indications of cognitive dissonance, changed beliefs, and teacher growth.

Table 2
Data Comparison for Individual Participants

	Individual Conversations	Platform	Reflective Journal	Game Plans	Support Group	Clinical Observation	Clinical Conferral
Individual Conversations		•	•	•	•	•	•
Platform	•		•	•	•	•	•
Reflective Journal	•	•		•	•	•	•
Game Plans	•	•	•		•	•	•
Support Group	•	•	•	•		•	•
Clinical Observation	•	•	•	•	•		•
Clinical Conferral	•	•	•	•	•	•	

Note. Marked cells indicate comparison of data from sources designated on vertical and horizontal axes. Data within each data source also were compared over time in order to identify changes in teacher beliefs and behaviors.

After individual teacher data were analyzed, we utilized original data, data displays, and analytic memos from the individual analyses in a cross-case comparison to determine both similarities and differences in the three teachers' journeys through the inquiry project.

Results

Lilian and Student Engagement

After serving three years of active duty in the U.S. Army and moving from job to job after leaving military service, Lilian took a job as a special education teaching assistant and eventually earned her degree in education. At the age of 35, she began her career as a public school teacher. At the time of the study, Lilian had been working as a math teacher and coach for seven years. Lilian's platform (summarized in Table 3) stated that the teacher's role is to build caring relationships with students, know what is going on in their lives and how it is impacting their behavior in school, guide them to learn responsibility and make good decisions, inspire them to

find their purpose in school, help them to become problem solvers, and “love them no matter what.” Additionally, Lilian believed that her role as a math teacher was to make the math curriculum relevant to students’ lives.

Table 3
Summary of Lilian’s Educational Platform

Aims of education	To inspire students to want to learn, support students to find their niche (what makes them happy), educate, and build confidence
The significance of school	To “open up doors” so that students can be happy, successful, and productive citizens
The role of the student	To learn to be responsible, and be willing to participate
The role of the teacher	To support students in learning their role, to guide them to make good decisions, to inspire, and to love them no matter what
To teach is to...	Help students become problem solvers
To learn is to...	Acquire information to make decisions with, be the best you can be, and be happy
The curriculum...	Should consist of learning how to read, write, and use arithmetic; inspire students to be interested in finding information; find students’ interests and go into depth with what they want to be; and connect all of the “subjects” in ways relevant to students’ interests that are useful and applicable to life
What should be assessed or measured?	Growth in learning, through projects and performance assessments
The ideal school...	Would start and end later; support teachers to share ideas and collaborate about best practices; function as a “village” working together to help children be successful; incorporate hands-on technology; and allow students the freedom to express themselves, find their interests, and be supported in building on those interests and finding their “awesomeness”
School should embody...	An enjoyable and professional learning culture, where students’ interests are sparked, and they gain confidence in themselves

In the first meeting of the collegial support group, Lilian admitted that comparing one’s educational platform to one’s teaching “is hard, when you look at yourself,” and that she was “anxious to see if what I believe is actually what I do.” Lilian shared with the group that, although she believed her teaching was generally consistent with her platform, she was

concerned that she sometimes lectured too much, and when she did so her students seemed bored. Lilian had decided that her action research would focus on increasing student engagement. Lilian's game plan called for making her lessons more interesting, placing more learning responsibility on the students, adjusting her discussion questions to support student participation, and facilitating more meaningful classroom interaction.

Data gathered by the critical friend in the classroom observation during the first clinical supervision cycle showed that Lilian had greeted each student at the classroom door, made the lesson's learning objective clear to the students, used multiple questioning techniques to engage students in the lesson, and provided varied forms of praise for student participation. All of these behaviors were consistent with Lilian's educational platform. In the post-observation conference, the critical friend shared the positive data with Lilian, but also pointed out that there were a few students in class who had low levels of participation. In response to this data, Lilian voiced a commitment to find new ways to encourage those students to participate:

I want them to participate in my class and be responsible and explain things to me so that I can see if they're getting it or not. Their role is to learn what I'm teaching them, but in a positive and engaging way. I want them to participate and not be lumps on a log. . . . And, so, when I ask them questions and they're looking at me like I've got six heads, then I need to change my question because it doesn't mean anything to them. So, my job is to make it meaningful, and their job is to participate.

During a discussion of the action research process in the second meeting of the collegial support group, Lilian shared that new instructional strategies she was trying, such as jigsaw and peer teaching, were assisting her to solve the problem that she had identified. Her students were more engaged in lessons, asking more thoughtful questions, gaining confidence, and becoming more self-directed in their learning. Lilian also expressed concern to her colleagues about the school's focus on the upcoming high-stakes achievement test. She desired a work environment where teachers are encouraged to reflect on their work and improve their teaching, rather than working under the threat of the test. Lilian shared with the group her plans to attend a professional development program on project-based learning as a vehicle for increasing student engagement.

Observation data from the second clinical cycle showed that Lilian interacted with each student at least once, and asked students questions that both connected to the students' personal lives and engaged them in the lesson. In the post-observation conference, the critical friend and Lilian agreed that the observation data indicated Lilian's teaching behaviors were consistent with her educational platform. One issue discussed in the conference related to the depth of the questions that Lilian had asked some of the students, and resulted in Lilian committing to asking more in-depth questions of those students in future lessons.

In the third meeting of the collegial support group, Lilian described math projects her students had been working on, and how the projects had kept the students engaged because they were both fun and challenging. Lilian expressed her belief that her recent teaching had been generally consistent with her educational platform, but that there still was room for improvement. For example, she had been pressed for time and had not done as much to prepare the student projects as she had intended to. Better preparation in the future would lead to deeper student learning.

When the group discussed the value of the reflective inquiry project, Lilian shared that she had benefitted particularly from the reflective writing and the collegial support group meetings.

Throughout the project, Lilian was open to suggestions, engaged in efforts at continuous improvement, asked for feedback on her efforts, made adjustments to her teaching practice, and reflected on the impact of those adjustments. In her final interview with the critical friend, Lilian stated that the project had helped her to reflect on her teaching practices and gain insight about her teaching. Lilian reported that she planned to continue with her reflective journal writing because it clarified her thoughts, allowing her to analyze her thinking at a particular moment in time, and helping her to remember things that she wanted to try, as well as lessons that went well and those that did not. Lilian also planned to apply the idea of reflective writing to her students by having them write weekly reflections about their learning. Lilian believed that, as a result of the project, her teaching behaviors had become more congruent with her educational platform, and she was elated by that outcome:

It lifted me up, lifted my spirits up, and I guess it proves that I'm doing what I believe in, and it's my passion, and I'm following my passion, which is what I try to teach my students. So, I'm walking the walk, so to speak.

Henry and Student Motivation.

In his first meeting with the critical friend, Henry shared that he had been an art teacher for 18 years, all but the first year at the same school. Prior to becoming a teacher, Henry worked for 10 years in the retail business until he realized that he was not really serving anyone in a manner that he considered valuable. Henry wanted to share his knowledge and make a difference in people's lives. With the understanding that "I know art," Henry went back to school to study art and earn a teaching certificate. When he was in college, one of Henry's professors stated that all learning is self-learning, and this greatly impacted Henry as a teacher. He agreed strongly that students must have a commitment to learning, but he also was adamant that a teacher must never stop trying to encourage that commitment. According to Henry, "if a student is unsuccessful, then the teacher is a failure also." Henry stated in his educational platform (summarized in Table 4) that the purpose of school is to teach students how to learn, which includes learning how to work to become a productive and successful adult, how to interact with other people and nurture healthy relationships, and how to develop a good work ethic and sense of responsibility. The teacher's role, according to Henry's platform, is to share an enthusiasm for learning and inspire a passion for learning.

Table 4
Summary of Henry's Educational Platform

Aims of education	To teach students how to learn, and to encourage lifelong learning
The significance of school	To become prepared to be productive and successful adults, learn how to work, learn how to interact with other people and have good relationships, and learn responsibility

The role of the student	To be prepared and committed to learning
The role of the teacher	To inspire a commitment to learning, and help and encourage students to discover their passion
To teach is to...	Share your knowledge, passion, and enthusiasm; and to open eyes and minds by sharing what you have and who you are
To learn is to...	Be able to do for yourself
The curriculum...	Should be well-rounded with core and creative subjects, students should be provided opportunities to find their passion, and the curricular focus should be on teaching students how to think and how to learn
What should be assessed or measured?	Work ethic, behavior, interaction with peers, and the final product
The ideal school...	Would consist of a safe environment that promotes learning in a challenging and productive manner, and that helps students find a path for a positive and productive future
School should embody...	A positive, encouraging culture

During the first meeting of the collegial support group, Henry stated that sometimes student behavior kept him from adhering to his platform. In particular, he was concerned with the lack of student motivation in his enrichment class, the only class he taught that was not an art class. A “handful” of students in that class did not work and were noncompliant and disruptive. Henry’s action research goal was to motivate students in the enrichment class. Observation data from the first cycle of clinical supervision showed that Henry spent much of his time redirecting a few students. Henry’s response to disruptive student behavior was to issue short directives (“sit down,” “we’re not here to talk,” “three times I’ve told you,” “stop it”). After sharing the observation data with Henry, the critical friend asked him to compare his responses to student behavior during the lesson with his platform belief that the role of a teacher is to inspire a commitment to learning. Henry responded that he had failed to live up to his belief and that he felt frustrated about that failure. While admitting the dissonance between his platform and teaching, Henry also believed that part of the problem was inadequate support from some parents and school counselors.

In the second meeting of the collegial support group, Henry discussed how he had tried to encourage positive student behavior and effort through both positive and negative reinforcement but he had observed minimal progress toward his goal. Henry admitted to his colleagues that he was frustrated with the continued student misbehavior and lack of effort in the enrichment class. Henry stated, “I don’t know what to do to get them motivated...I feel like I’m not meeting my responsibility. If they’re failing, I’m failing. They’re my kids, my students, and I feel like I

should be able to do something.” In addition to taking his share of responsibility for the lack of progress, Henry also cited a lack of support from other teachers who were not maintaining the school’s protocol for enrichment period. Henry decided that his next step would be to communicate with the parents of the unmotivated students. He was encouraged by the other teachers in the group to “stay the course.”

In the second clinical cycle, the critical friend gathered observation data on whether students were on task and on teacher-student interactions. On-task behavior varied, with few students on task at the beginning and near the end of class, most students on task during parts of the class, and up to half of the class off task during other time segments. In reaction to off-task behaviors, Henry had one student change seats, sent another student to the office, and gave verbal correctives to several other students. In the post-observation conference, Henry shared ideas for improving student conduct and motivation he had tried, including a three-way conference with a student and school counselor. Henry and the critical friend discussed barriers to improving student conduct and motivation.

During the third meeting of the collegial support group, Henry reported that some progress had been made in his action research: One student’s behavior had improved as a result of Henry’s meeting with the student’s parent and an administrator, and two other students had become more motivated to learn because of new interests they had developed. Henry also shared his realization that part of the problem he was having was related to larger issues inherent in the school culture, and that he had become committed to recognizing which issues were within his control and addressing those issues. The written reflections played a significant role in facilitating this mindset shift for Henry. By comparing his current thoughts to the educational platform he had created several months earlier, Henry was reminded of his belief that school should embody a positive and encouraging culture. This helped Henry understand that he was struggling within the current culture of his school, and he believed that this aspect of the problem was beyond his control.

Henry began his last individual meeting with the critical friend by discussing his intent to continue his reflective inquiry the following year, starting with conversations with the parents of students in his enrichment class. Henry had come to believe that increasing student motivation would require a collaborative effort by students, teachers, and parents, and ultimately would require a change in the school culture. Regarding the reflective inquiry project, Henry said that it “helped me reflect on me, think about me, about what I feel, where I stand, and what I need to do to improve. It put a light on me that I probably hadn’t had on me for a long time, because I was comfortable.” Henry said that he reflected constantly throughout the study. He commented, “You know what it did? It reminded me, not that I forgot, not entirely, but it reminded me why I got into education.” Henry entered the field of education because he wanted to make a difference, and he decided that he would focus on that thought the following school year. Henry said that he was going to share more of himself with his students, and he hoped that this would change their perception of him and “make things more positive.” Henry’s educational platform stated that to teach is to share one’s self and one’s enthusiasm for learning, and his game plan for the future was to realign his behaviors with this belief.

Elena and Assessment of Student Learning

During her first meeting with the critical friend, Elena recalled that she had discovered at a young age that she wanted to be a teacher. She often cared for her piano teacher's children, and it was during those times that Elena would teach the children how to do various things. The praise that Elena received from the children's mother helped her recognize that she was good at teaching. "I think it just grew from that, and then there's just literally nothing else I wanted to be." As a math teacher with 12 years of teaching experience, all at the same school, Elena believed in building rapport and mutually respectful relationships with students. Elena also felt that this year was the most difficult of her career, and she referred several times to being in survival mode. "These kids don't know how to sit in their seats, they're not learning, [and they] have zero patience for anything." Elena found herself managing behavior more than teaching, and she worried about whether or not she could have a significant impact on her students' lives.

Elena also sensed that drastic change was required in our system of public education. At the school level, Elena was frustrated by all of the "other things [that] get in the way of the actual planning and collaboration." Though she loved working with other teachers, rarely did her entire math department get together, and when they did, it was for "purely logistical things." Time was a barrier, as was the culture of the school: "It's not a learning environment at all." Elena's educational platform (summarized in Table 5) stated that the purpose of schooling is to teach students how to be good citizens, teach content to students, and teach students about social relationships. Elena professed that the role of the teacher is to create a safe environment where students are

able to take a deep breath and relax... a safe place for them to ask questions and to learn what relationships are; be a resource, facilitator, guide, and role model for student learning; and teach students how to be persistent in problem solving.

Table 5
Summary of Elena's Educational Platform

Aims of education	To teach content, how to be a good citizen, and about relationships
The significance of school	To learn how to act around people, and find interests for the future
The role of the student	To come to school and want to learn
The role of the teacher	To create a safe environment; be a resource, facilitator, guide, and role model; and instruct
To teach is to...	Allow students to explore, question, and discover; and to provide repetition and feedback
To learn is to...	Gain knowledge

The curriculum...	Should consist of “subject” content necessary for survival in the “real world,” as well as skills for solving problems and thinking logically
What should be assessed or measured?	The taught curriculum and persistence
The ideal school...	Would consist of eager students who want to learn
School should embody...	A safe, learning culture, and be a place where students feel comfortable to learn

During the first meeting of the collegial support group, Elena returned to the critique of the school environment that she had expressed to the critical friend in their first meeting. Elena lamented that the school’s focus on high-stakes testing had caused students to lose confidence and to stop trying. Elena also voiced concern that the school’s required format for lesson plans was not consistent with effective teaching practice. Elena’s action research topic was to develop methods for formative assessment of her students’ learning. Elena wanted to use formative assessment to know what her students knew and did not know before planning for the teaching of particular content, and to determine whether her students had learned the content she had taught in order to re-teach content that the students had not learned.

For the first clinical supervision cycle, Elena asked the critical friend to observe her attempts at formative assessment in a lesson on interpreting graphs and tables. Elena began the lesson with a quiz, presented a whole-group lesson and then assigned the students independent practice. In the post-observation conference, the critical friend asked Elena to describe what she meant by assessment, and Elena replied that she meant giving quizzes or tests and asking students questions. Elena also said that she tried to create an environment in which students felt free to ask questions that would reveal their level of understanding and their thinking process. Elena expressed her frustration with her lack of success with formative assessment:

I’m here to teach these kids and to make sure that they know stuff, but the thing is, I feel like they know things and then they get to the test and they don’t know anything. So, I don’t know what’s happening...So, then I think maybe I need to do different assessments.

In the second collegial support group meeting, Elena told her colleagues that she was having difficulty defining what she was trying to accomplish with her action research. Elena also reflected on her concern about the high-stakes achievement test and the environment that it had created in her school. She stated that the pressure she and the other teachers were under seemed to be contrary to the type of professional support she desired, and that she was receiving in the reflective inquiry project. As the department chair, Elena had decided to expand her game plan to include working with the other math teachers to re-institute the use of formative quizzes in the math department:

It will be my data—it will be our data—that will drive our instruction and make sure they learn. I actually feel like that will also keep the kids on track so we can do this fun and engaging activity, [and] then they're still responsible for the learning.

Elena believed that there would be strength in collaboration, and that the teachers' combined efforts would result in “one super teacher power.”

The critical friend observed questions Elena asked to assess student learning during the observation phase of the second clinical cycle. Elena asked questions fairly evenly divided between close-ended and open-ended questions, and directed formative questions to 10 of the 18 students in the class. In the post-observation conference, it became clear that, although Elena had specific learning objectives for the lesson, she did not have a specific plan for assessing learning relative to each objective; rather, she had gone into the lesson with a general plan to ask students questions to determine if they understood the lesson content. The post-observation conference also indicated that Elena was providing more formative feedback to her students in a timelier manner:

I have thought about making sure that these kids are learning what they're supposed to be learning, and I think it makes me better at giving them stuff, me looking it over and handing it back to them a little bit more, a little bit quicker, so then they know what they need to work on.

Elena also discussed the benefits she had received from the inquiry project up to that point:

The thing that I like best about this is, honestly, I feel like I don't get a lot of time talking to people who are educated on my profession. It's been so good for me to be able to talk to professionals and even realign myself, too. It's been nice for me to be, like, “Now I've got a purpose.”

Elena continued her reflections on the inquiry process during the third meeting of the collegial support group. She explained to the group that the earlier thoughts she had regarding formative assessment were related to the state-mandated test, and that “through talking with you, and our group meetings, it kind of opened my eyes and widened my definition of assessment back to where I think it should be.” Elena felt that she had “lost sight of the meaning of assessment, because we've been conditioned to just create assignments that, you know, you can put a grade on for the grade book.” Elena believed that the critical friend's reflective questions helped her to reconnect with her beliefs about assessment, and that, during the projects her students had recently been doing, she was able to assess student learning in more authentic and diverse ways. Elena's broadened view of assessment was now aligned with her educational platform.

Elena also told the group that she had lost focus on the true meaning of student assessment because of the external pressure to gather and analyze data related to the high-stakes achievement test. She believed that the school needed to move from a test-driven culture to a culture of learning, and that such a shift would result in improved student achievement. Elena shared that she had greatly appreciated the collegial support group, and that while she found the reflective writing that was part of the inquiry project difficult, she valued it because it revealed

her growth over time. Though Elena did not feel organized enough to use information from weekly journal reflections, she did find that doing a final reflection allowed her to see that most of her behaviors were congruent with her educational platform, and that “there were things [in the platform] that are not what I do.” Elena said that she likes to see change, and that when reflections are written daily, or even weekly, change can be hard to observe. Elena especially valued her relationship with the critical friend and the reflection that relationship had fostered:

... every time I talk with you, and I don't know if it's just you or any of these things, but it always makes me think back. Like I love to surround myself with other people who like to think and make themselves better because I love thinking about that. I want to make myself better.

In the final meeting with the critical friend, Elena said that the inquiry project had been a source of encouragement in what had been a very difficult year for her. She had widened her concept of assessment and was now teaching in a manner more congruent with her educational platform. Elena reported that she was now better able to reflect on her formative assessment of students and how to improve it. She planned to continue her inquiry on formative assessment the following school year.

Group Themes

Although the study examined three separate reflective inquiry projects, group themes also emerged from the cross-case comparison. All of the teachers reported that they placed high value on the development of their educational platforms and the comparison of their classroom behaviors to those platforms because the process validated much of what they espoused in their platforms and were actually doing, but also because the process revealed some inconsistencies between their platform and their behaviors that led to efforts to change their teaching practice.

All three teachers experienced cognitive dissonance, and this cognitive dissonance resulted not just from teachers reflecting on their platforms and behaviors, but also because of reflection during individual discussions with the critical friend, reflective writing, reflection on observation data during clinical supervision, and reflection with the other teachers and the critical friend during collegial support group meetings. The critical friend's facilitation of all of these processes appears to have been crucial. The dialogue among the teachers in the collegial support group also appears to have contributed greatly to the development of cognitive dissonance and the teachers' commitments to make their teaching behaviors more congruent with their educational platforms. All of the teachers reported that experiencing cognitive dissonance made them uncomfortable, but that their efforts to align platform and behaviors to overcome the dissonance led them to “reconnect” with their original reasons for becoming a teacher and to a sense of professional renewal.

Although all of the teachers admitted discrepancies between their educational platforms and teaching behaviors and the need to change their behaviors, all of the teachers also identified environmental factors as barriers to change. For Lilian, the barrier was the high-stakes achievement test and its negative effects on student confidence. Henry felt professionally isolated and believed that he and his students were not receiving the support they needed from

parents, school counselors, and other teachers. Elena described a school environment without opportunities for collaboration or time for professional growth, and a lesson plan format that was inconsistent with effective teaching. Also, like Lilian, Elena was concerned about the negative effects of the high-stakes test on students' confidence. All of the teachers stated that the school culture was not conducive to reflective inquiry. In contrast to their school culture, the participants described the various professional learning frameworks that were part of the reflective inquiry project as providing them with access to professional conversations which in turn enabled them to analyze their practices, assume a sense of responsibility for issues they had originally deemed beyond their control, develop new understandings, and make changes to their teaching practices.

Although the participants valued all of the professional learning frameworks, they reported that it was the collegial support group, and particularly the reflective dialogue that took place in that group, that they valued the most. One of the things that the participants considered essential to the success of the collegial support group was the trust that developed between the critical friend and the teachers, and among the teachers. The collegial support group served as a sounding board and source of encouragement for members as they articulated their educational platforms, compared their platforms to their teaching behaviors, experienced cognitive dissonance, and committed to change. The collaborative dialogue that characterized the group assisted the teachers as they implemented, assessed, and modified their game plans. Group members described teachers outside of the collegial support group as frustrated with the school culture, and suggested that the process the group had experienced would benefit the school as a whole. As a result of the reflective inquiry project, Lilian and Elena had begun to engage other teachers in dialogue and collaboration, and Henry had committed to begin conversations with school administrators and others about the need for cultural change.

Discussion

Interpretations

Creating an educational platform and using it as a lens to analyze their practices was the teachers' first experience with this type of reflection. By examining their beliefs about teaching and learning, the teachers were reminded of their purpose for being a teacher, something they had not consciously considered in a very long time. According to Sergiovanni and Starratt (1983), an educational platform outlines what a teacher believes "ought to" occur. For the participants in this study, the platform not only served as a reference for the teachers' preferred behaviors and outcomes, but also facilitated a sense of professional renewal for the teachers and motivated them to strive more intentionally toward their teaching ideals.

The sharing of personal beliefs about teaching and learning prompted teachers to examine their teaching behaviors, and all participants agreed that it was important to take this conscious, though sometimes difficult, look at themselves. Analyzing their beliefs and behaviors publicly, with the critical friend as well as colleagues, provided the discomfort needed to stimulate change. When the process became emotional for the participants, it was due to the realization that they had lost touch, to varying degrees, with their purpose and passion for their work. This type of personal sharing required trust between the critical friend and the teachers, and among

the teachers. It was established trust that allowed the critical friend to challenge the teachers' practices in relation to their espoused beliefs, and the teachers to recognize dissonance during group dialogue. In allowing others to help them clarify their beliefs, and to realize that their teaching behaviors had fallen short of those beliefs, the teachers felt a responsibility to resolve that dissonance.

Each teacher experienced both consistency and conflict between beliefs and behaviors, resulting in feelings of both validation and uneasiness. All three participants first tried to rationalize inconsistencies as they became aware of them, but eventually responded in other ways to rid themselves of the discomfort that ensued. Lilian soon interpreted the discrepancies as opportunities to learn and adjusted her practices to align with her beliefs, while Henry and Elena remained in the rationalizing phase much longer. Through cognitive dissonance, although the timing varied from teacher to teacher, all three participants eventually were motivated to make changes to beliefs and/or behaviors to achieve alignment.

The critical friend in this study found it necessary to provide support to the teachers that was appropriately challenging for each of them based on each teacher's readiness to accept new information. Lilian had a high level of readiness from the start and could use new information to make changes to her practice; Henry did not initially demonstrate readiness but began to by the end of the study; and Elena vacillated throughout the study between accepting and refusing new information. Additionally, discussion among colleagues during the group meetings fostered teacher learning only when it involved reflective questions and encouragement that supported self-reflection and inquiry rather than excuses and blame. Through dialogue facilitated by the critical friend, the participants, each at his/her own pace, increased awareness of their practices and made changes. The opportunity to engage in professional conversation was the component of the study that all participants said they appreciated the most.

Lastly, the combination of five professional development frameworks (action research, a critical friend, reflective writing, clinical supervision and the collegial support group) created synergy that enabled professional growth. Each of the frameworks supported the other frameworks, and all the frameworks in tandem facilitated the teachers' reflective inquiry. After their educational platforms had been created, the teachers did not achieve awareness of discrepancies on their own. It was the supports for reflective inquiry, such as the post-observation conferences with the critical friend and the collegial group discussions, that assisted the teachers to recognize and resolve cognitive dissonance.

Implications

The findings from this study have several implications. First, teacher reflective inquiry is essential for professional development. According to King and Kitchener (2004), progression from one stage of reflection to the next is typically a challenging and slow process because it requires a mental shift. The professional development frameworks used in this study assisted the teachers to engage in reflective inquiry that, in turn, enabled the teachers' awareness of discrepancies and prompted informed change.

Another implication is that informal discourse should be acknowledged and analyzed. Two of the participants, Elena and Henry, made comments during individual and group meetings that revealed beliefs that were impacting their teaching behaviors, yet they did not include those beliefs in their educational platforms, likely because the statements sounded unprofessional and uncaring. In accordance with Argyris' (1991) explanation of espoused theories of action and theories-in-use, Elena and Henry were often not aware that the way they wanted to behave and thought they behaved was inconsistent with the way they actually behaved. This study supports the claim that educational platforms can assist teachers to examine beliefs and behaviors; however, the study also found that a written platform may not be sufficiently complete or accurate, and that this needs to be addressed in relation to what teachers say informally. Once Elena and Henry became aware that oral statements they made did not align with their platform, they were able to begin addressing the conflict.

For teachers to engage in reflective inquiry most effectively, the school culture must be conducive to this practice. When reflective inquiry is not embedded in the culture, professional learning can be hindered. This project fostered reflection and reflective dialogue for the participants; however, their professional working environment was not aligned with this approach, causing the teachers to feel appreciative for the opportunity to engage in collegial dialogue, yet apprehensive about operating in a manner not typical in their school. Attard (2012) asserts that to partake in reflective writing and participate effectively in a community of practice it is necessary to have school structures that support those efforts. During the study, there was some reluctance, to different degrees for each participant, to write reflections and think about behaviors in relation to beliefs, especially when a discrepancy was being discovered. The teachers were not in the habit of engaging in reflective inquiry and sharing their reflections. Through the support of the critical friend and other professional development frameworks, however, the participants were able to analyze their practices and develop new understandings.

Another implication is that teachers experience learning differently and must be supported as individual learners with unique needs. Each teacher progresses in his/her own way toward an inquiring approach to teaching and learning, and teachers operate at different levels of reflection and have varying levels of knowledge about and practical experiences with reflective processes. This must be understood and effectively managed by educational leaders charged with facilitating teachers to engage in reflective inquiry. When thinking critically about their craft, teachers need support that accommodates their individual developmental levels and personal approaches to learning.

Lastly, reflective inquiry and specific vehicles for inquiry such as action research are complex processes that require a long-term commitment to become established as commonplace professional development practices that lead to a culture of learning. It takes time to establish the trust necessary for teachers to feel safe examining their beliefs, behaviors, and discourse and to share those reflections with others. It also takes time to develop inquiry skills and make progress toward an inquiry stance, especially in environments not accustomed to engaging in reflective inquiry. Since this level of reflective practice is not typically an intuitive practice for teachers, it requires educators to shift their thinking and adjust their practices.

Contributions of this Study to the Field

Unique aspects of this study's findings provide a number of contributions to the field, including the following:

- Teacher inquiry has its best chance of success if it takes place within a culture of learning; however, such a culture is not present in many schools. In schools that have not yet developed an inquiry stance, the presence of a critical friend and collegial support group to assist teachers through the inquiry process can provide the support teachers need to embrace reflective inquiry. The development of a trusting relationship between the critical friend and teachers and among members of the collegial support group is a critical factor in such support.
- In many descriptions of teacher inquiry, the first step discussed is the selection of a focus area. The results of this study indicate that teachers' reflection on their educational beliefs and comparison of those beliefs to their teaching behaviors should precede the selection of a focus for inquiry. Moreover, objective data on teaching behaviors and dialogue about those behaviors can inform such reflection.
- Reflective writing, reflective dialogue, action research, non-evaluative clinical supervision, and collegial support groups all have been described in the literature as vehicles for teacher inquiry. This study documented the power of combining all of these formats in a single inquiry project. In this "combination of ingredients," each format supported the other formats in changing teacher beliefs and behaviors.
- This research showed that teacher growth within the inquiry process, while greatly assisted by collaboration with others, is in many respects an individual journey. Teachers learn and change in different ways and at different paces, and thus those who support teacher inquiry must individualize their assistance to participating teachers.
- This research revealed an emotional dimension of teacher inquiry. Reflecting on their educational beliefs and comparing their current teaching practices to those beliefs led not only to cognitive dissonance and emotional discomfort regarding some practices, but also to a sense of pride regarding others. Both of these emotions led the teachers to a sense of professional renewal. The teachers both recommitted to practices consistent with their beliefs and committed to changing practices inconsistent with those beliefs.

Conclusion

Purposeful and systematic reflection in our schools is not the norm, yet such professional learning has a significant positive impact on teachers, enhancing their eagerness and ability to improve instruction for the sake of student learning. Our children deserve to be immersed in inspirational learning environments that recognize and support them as individual learners in a community of learners. However, for that to happen consistently for all students, our teachers also must have that type of inspirational learning environment.

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