Teacher Teams and Refined Praxis: an Investigation of Teacher Perceptions in Schools

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Teacher Teams and Refined Praxis: An Investigation of Teacher Perceptions in Schools

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For the Almighty G-d whose love allows all of us to transcend ourselves

wife, Marisa, you are the woman of my dreams and you have helped me create a better reality. You sacrificed all for me, and patiently and lovingly supported me. My children, Shoshana, Yaakov, Tzvia Rivka, Tamar, Devorah Leah and Baruch David -- you have had to put up with me for so many nights that I could not play with you and be with you. Thank you for your patience. I now look forward to playing Scrabble, Campaign Trails, Risk and all the games in the world you desire as well as being able to give you my time that you richly deserve.

Sixth, I would like to thank Carla Lillvik, our HGSE librarian. Although I was in New York City, Carla always made me feel connected and at home. There is no way I could have written this paper without your guidance and support.

Lastly but not least, I want to thank G-d! It is You who have been so patient with this imperfect creation. Your love and constant forgiveness have allowed me to think and produce this work. I hope it serves the ultimate purpose of creating a true heaven on earth with the revelation of Moshiach.

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Abstract

Two approaches have emerged to counteract isolation (Donaldson, et al., 2008; Little, 1990) and lack of structures for teachers to reflect and learn (Ash and Moore, 2002; Schön, 1983; Dewey, 1910, 1933): they are teaming (Troen & Boles, 2012) and reflective practice (Schön, 1983, 1987). In this paper, I research "refined praxis," a theoretical framework based on four foundational theorists of reflective practice: Dewey (1910, 1933), Freire (1970, 1974, 1985), Schön (1983, 1987) and Argyris (1974, 1982, 1990) (see also Argyris & Schön, 1974). Refined praxis combines collegial dialogue with reflective practice to offer a new approach to improving instructional practice.

This qualitative study utilizes constructivist grounded theory methodology (Charmaz, 2014) because refined praxis is a new theoretical framework that has not been studied before, and grounded theory is an appropriate tool when there is little to no existing empirical data (Charmaz, 2006, 2014; Glaser and Strauss, 1967; Strauss and Corbin, 1998; Willig, 2008).

This qualitative study focuses on the perceptions of teachers who are in teams engaged in refined praxis and contributes to researchers and practitioners interested in both teaming and reflection. Its goal is to provide rich descriptions of what happens in refined praxis teams, what teachers find most valuable, and an understanding of what types of factors contribute to whether, when, and under what conditions teachers find this type of learning to be effective.

Chapter 1: Introduction and purpose

Research for the last century has shown that K-12 teaching produces fact-recall learning and little else (Burstall, 1909; Colvin, 1919; Bloom, 1954; Bellack et al., 1966; Nystrand & Gamoran, 1991). The 2012 MET study from the Gates Foundation revealed that not much has changed from Burstall's 1909 study (Kane & Stainger, 2012): trained observers watched 7,491 videos of instruction by 1,333 teachers from six socio-economically and geographically diverse districts, and the vast majority of teachers were not teaching for critical thinking, but rather focused on fact-recall.

Secretary of Education Arne Duncan stated: "[T]he American dream is to get a great education, and a big piece of that … is not just doing the same thing over and over again" (Washington Post, February 9, 2015).

The Secretary's recent call to action was also made in 1983 by a bipartisan commission in *A Nation at Risk* (p. 5); "[T]he educational foundations of our society are presently being eroded by a rising tide of mediocrity that threatens our very future as a Nation and a people…" Since then, the nation has more than doubled spending in education from approximately $5,815 per pupil in 1971 to over $12,608 per pupil in 2012 (in constant 2012 dollars) (NCES, Digest of Education Statistics, 2012).

Despite a doubling of educational expenditures, our scores have flat-lined. The NAEP reading (1st year of testing, 1971) and math (1st year of testing, 1973) scores for 17 year-olds nationally were 285 and 304, respectively, on a scale score of 0-500; in 2012, they were 287 and 306. A two-point gain in both metrics on a 500-point scale is

"statistically insignificant" (NAEP, Long-term trend results, 2012). How is it that with such an increase of resources, the output has remained unchanged?

Unfortunately, two major aspects of traditional schooling help assure that teachers are "doing the same things over and over again": isolation of teachers (Donaldson, et al., 2008; Little, 1990) and lack of time and structure to reflect and learn (Ash and Moore, 2002; Schön, 1983; Dewey, 1910, 1933).

In recent years, two major approaches to changing teacher practice have emerged: teacher teams to address the isolation (Dieker, 2001; Friend et al., 2010; Gertsen, Morvant & Brengelman, 1995; Goor & Schwenn, 1997; Jung, 1998; Keefe & Moore, 2004; Murata, 2002; Niergarten, 2013; Nierengarten & Hughes, 2010; Reeve & Hallan, 1994; Seidel et al., 2011; Trent et al., 2003; Troen & Boles, 2012) and reflective practice to address the lack of learning about one's own instructional practice (Boud & Walker, 1998; Brookfield, 1987; Carlton, 2010; Chi Keung, 2009; Cochran-Smith, 2004; Darling-Hammond et al., 2002; Dewey, 1933; Freire, 1970, 1977; Hatton & Smith, 1994; LaBoskey, 1994; Loughran, 2002; Mezirow, 1990; Schon, 1983; Oakes & Lipman, 2002; Rayford, 2010; Villa, Thousand & Nevin, 2008).

Literature on teams suggests that teams should incorporate reflective practice because reflection on practice could help teachers improve their pedagogy when needed and in their particular area of need (Ashraf & Rarieya, 2008; Blase & Blase, 2000; DeMulder & Rigsby, 2003; Dufour et al., 2006; Harford & MacRuairc, 2008; York-Barr et al., 2006). However, there is little in the literature that shows the benefits of reflection in teams (Osterman & Kotkamp, 1993; York-Barr et al., 2006).

The purpose of this study is to address an existing gap in the literature by exploring teacher perceptions of teaching teams with on-going, systematic, dialogical reflective practice.

This study contributes to researchers and practitioners interested in both teaming and reflection. Using a constructivist grounded theory methodology, I provide rich descriptions of teachers' perspectives of what happens in refined praxis[1] teams; what they found most valuable; and an understanding of what types of factors contributed to whether, when, and under what conditions teachers find this type of learning to be effective. Future teacher teams utilizing this approach will be able to draw upon previous team experiences and have a greater awareness of how refined praxis was utilized, and the field will better understand its challenges and possible benefits.

Organization of the Dissertation

Chapter 2, "Conceptual Framework," provides the framework of four seminal thinkers' work on reflective practice. I analyze the ideas of John Dewey, Paulo Freire, Donald Schön and Chris Argyris and then synthesize them into the theory of refined praxis.

Chapter 3 focuses on my research questions, research methods and explains the site selection of three schools in New York City, the data collection and analysis as well as validity.

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[1] Refined praxis is a type of reflection that is explained in the theoretical framework of this study.
[2] This section of the dissertation was adapted from a much more extensive review of

Chapter 4, "Context of the Refined Praxis Experience," provides definitions, the general perspective that teachers have of refined praxis, and the rationale for the analysis of three teams out of the six studied.

Chapter 5, "Analysis of Individual Teacher Learning Within Teams," presents three teams and individually analyzes each teacher's single and/or double-loop learning. The individual teacher's belief about refined praxis and the team culture help explain the depth of learning the teacher experiences.

Chapter 6, "Analysis of Team Learning," presents the same three teams as in Chapter 5 and analyzes how teams, as a whole, can also utilize single and/or double-loop learning. The beliefs around refined praxis and the team culture are also analyzed in their learning experience.

Chapter 7 presents the findings of both individual and team experiences impacted by refined praxis and articulates implications for those teachers already engaged in refined praxis teams and those educators aspiring to establish refined praxis teams in their schools. Lastly, implications for further practice and research are shared.

Chapter 2: Conceptual Framework[2]

In order to address the stalled educational success of our students, we must begin by improving teacher performance, as teachers have been shown to be the single most influential factor in student achievement in schools (Rivkin, Hanushek & Kain, 2005; Rockoff, 2004; Sanders & Rivers, 1996). As touched on in the introduction, there are two major impediments[3] for improving teacher performance: isolation in the classroom and lack of shared reflection. Two proposed remedies are teaming and refined praxis.

Isolation and lack of shared reflection

Teachers in urban settings have little time to reflect, as the demands on them are enormous and they are isolated in their classrooms (Donaldson, Johnson, Kirkpatrick, Marinell, Steele, & Szczesiul, 2008; Little, 1990). School districts know that teaching practice needs to improve in order to produce better student outcomes, and they spend massive resources on professional development with little evidence that they are improving instructional practice (TNTP, 2015). Over 90 percent of teachers attend some form of professional development and most find it useless (Darling-Hammond, et al., 2009).

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[2] This section of the dissertation was adapted from a much more extensive review of the literature conducted for my qualifying paper, *Building a Theory of Reflective Practice: A Critical Review and Analysis of John Dewey, Paulo Freire and Donald Schön* (Waronker, 2013).

[3] There are many impediments to student achievement: length of day and school year, teacher compensation, racial and ethnic compositions of teachers in similar or different school communities, etc. This study only focuses on two impediments.

Teachers need to address their urgent problems with immediate responses (Jentz, 2007). They also need to solve their problems collaboratively (Garet, Porter, & Desimone, 2001; McLaughlin & Talbert, 2001).

Teaming and reflective practice

Troen & Boles (2012) make the case that teams of teachers counteract isolation -- one of the main impediments to teacher growth. Working collaboratively leads to more effective planning and implementation because there are more good minds working on common issues leading to better ideas for everyone. When teachers have common planning time (Dieker, 2001; Keefe & Moore, 2004), it allows for more effective communication (Reeve & Hallahan, 1994; Trent et al., 2003), critiquing and improving lesson planning (Professional Development Partnership, 2008) and is essential in a teaming model (Murata, 2002). Peer review (Goor & Schwenn, 1997) can enhance implementation of new practices (Brengelman, Gertsen & Morvant, 1995) and the setting of new joint professional goals (Villa, Thousand & Nevin, 2008). Peer review can include, for example, video recording and the study of each others' lessons to improve practice (Seidel et al., 2011).

Schön (1983) coined the term "reflective practice" as the remedy to both thoughtless action and to thoughtful inaction. He drew much inspiration from Dewey (1933) who made the case that the major problem in education was the lack of reflection in instructional practice.

In order for continuous teacher improvement (Tiller, 2006) to take place reflective practice requires sufficient trust among teachers (Cochran-Smith & Lytle, 1999;

Friedman, Galligan, & O'Connor, 2009). Trust creates enough safety for teachers to

question their own practice (Revans, 1982, 1984) that can impact both a teacher and

student beyond the classroom (Larrivee, 2008) and enhance instructional practice

(Barnett & O'Mahoney, 2006; Darling-Hammond & McLaughlin, 1995; Killeavy &

Moloney, 2010; Friedman & Schoen, 2009; Stigler & Hiebert, 1999).

Reflective Practice can be either a solo or group endeavor (York-Barr et al.,

1998). The table below shows some of the possible forms that reflective practice for

teachers may take either alone or with others:

Reflection Alone	Reflection with Others
➢ Journaling ➢ Analyzing and writing about case studies, stories, articles. ➢ Videotape analysis of own teaching, an experience, etc. ➢ Interactive or partner journals. * Portfolio approach	➢ Dialogue groups, study groups, inquiry groups, support groups. ➢ Cognitive coaching with a partner. ➢ Reflective questioning partners, interviewed by another. ➢ Action research group. ➢ Group discussion of a case study, videotape, portfolio, or articles. ➢ On-line chat groups.

Table taken from York-Barr, et al. (1998), p. 12. *Portfolio approach (Lyons, 2010).

Individual self-reflection (without a team) has been cited as the driver for

changing practice (Larrivee, 2000). Journaling (Bourner, 2003; Larrivee, 2000, 2008;

Valli, 1997), for instance, can help a teacher self-reflect. However, reflective practice

can be more effective when done in groups (Osterman, 1990; Osterman and Kotkamp,

1993; and York-Barr et al., 2006). "Reflective practice begins with the self, but it

achieves fruition when reflection leads to communication and collaboration" (Osterman,

1990, p. 144).

Mindich & Lieberman (2012) showed that schools face several challenges in

creating effective reflective groups: lack of common planning time for all teachers,

teachers feeling fatigued by other initiatives, teachers' fear of allowing others into their

classrooms, lack of a clearly defined purpose for team reflection, and using a process too

narrowly focused on a specific product.

Given the difficulties predictably faced in trying to implement reflective practice

in schools as described above, how can a review of the writings of core foundational

educational theorists help us better understand the ways in which teacher reflection in

groups might disrupt patterns of rote thinking, isolated teaching traditions and patterns of

unsuccessful repetitive practice?

While the refined praxis theoretical framework is not designed to address all the

challenges described above, it can provide a clearer sense of how reflective practice could

operate effectively in a team context.

Refined Praxis

"Refined praxis" is a framework wherein a person's practical application of a theory

is clarified or questioned through collegial dialogue (Waronker, 2013). Thus, praxis (a

practical application of a theory) undergoes a process of refinement (by being questioned or clarified with colleagues through dialogue).

Refined Praxis combines reflective practice with collegial dialogue (Waronker, 2013). I designed this framework after an analysis of the literature, utilizing and integrating foundational elements from four major thinkers in the field of reflection in education: John Dewey, Paulo Freire, Chris Argyris and Donald Schön.

Dewey posited that if a person is not reflecting on what he or she is doing, then that person is not thinking or learning. Dewey's theoretical framework is a cycle of problem, reflection, and action (Dewey, 1933).

Building on Dewey (1910, 1933), Freire (1970, 1974, 1985) added that learning must be dialogical in nature. One needs another person to help one learn, and that dialogue is not top-down as in a communiqué, but rather based on mutual empathy and trust (Freire, 1970).

Argyris argued that the most powerful reflection and learning goes beyond the problem solving mode (i.e., single-loop learning), when a person questions not only one's behavior but also one's beliefs and assumptions (i.e. "double-loop" learning) (Argyris, 1974; 1982; 1990).

Schön added another important focus for reflective work in highlighting its ability to reveal how one's idealized intentions (espoused theory) may be incongruent with one's actions (theory-in-use) (Schön, 1983).

My synthesis of all four elements provides a theoretical model, which I have called "Refined Praxis." This model (see Figure 1) takes Dewey's Problem, Reflection and Action Cycle and puts it into relationship with Freire's Axis of Dialogue ("praxis").

It simultaneously refines the congruence between Schön's espoused theory/theory-in-use and Argyris' double-loop learning ("refined praxis").

Refined praxis could be useful when person A (pA) observes the behavior of person B (pB) and sees a discrepancy between pB's espoused theory and theory-in-use. For instance, a teacher might espouse the value of parental input, but become quite defensive when parents actually ask questions or make suggestions, and so the teacher then rejects the parents' contributions. The teacher's theory in use seems to contradict the espoused theory. In a group context, colleague pB, (through empathetic dialogue full of trust) could question this perceived discrepancy. "While I know you value parents' input, I notice that you often complain about your interactions with parents. I wonder if you have noticed that?"   pB can see the inconsistency (or internal contradiction) that pA experiences and can make it available/visible for reflection.

Figure 1. Refined Praxis
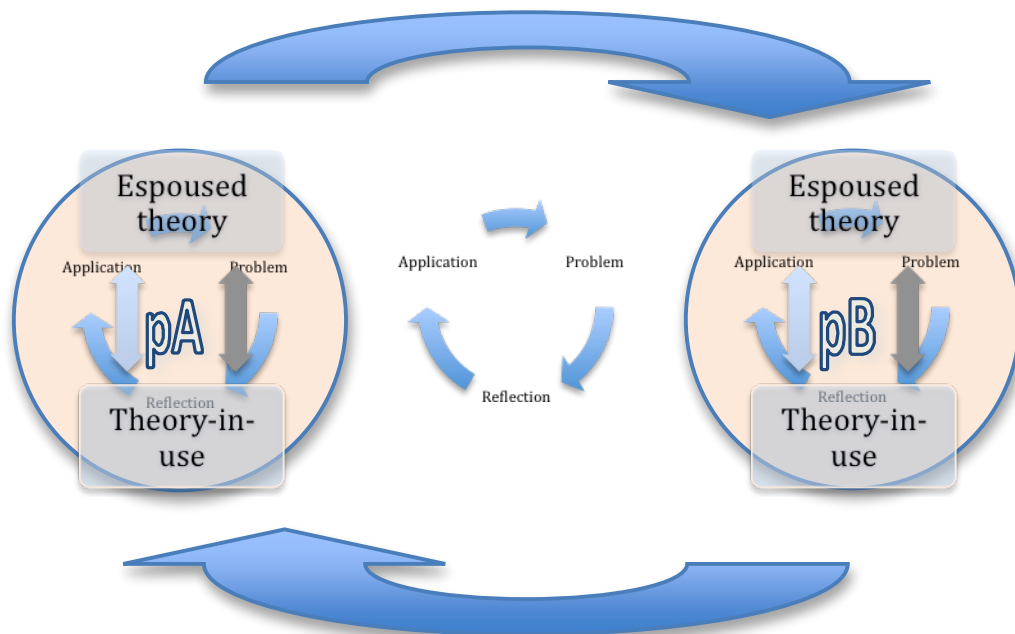
Refined praxis, then, is a particular kind of reflective practice – one that requires the another to help one reflect.

Reflective practice can be applied by an individual or in a group context (York-Barr, et al., 1998). Refined praxis, with its emphasis on dialogue among equals, is intended to be applied in a group setting.

Thus, refined praxis starts with a person's practical application of theory (Dewey's cycle of problem, reflection, action) which is clarified (Schön's aligning one's espoused theories with one's theories-in-use) or questioned (Argyris' single and double-loop learning) through collegial dialogue (Freire's dialogical theory of learning) (Waronker, 2013).

While there are many studies that look at various forms of reflective practice such as: using data to reflect on and inform decision-making (Boudett & Steele, 2007; Boudett, City & Murnane, 2008), or personal reflective practices such as journaling (Bourner, 2003; Larrivee, 2000, 2008; Valli, 1997), I am specifically focused on research that investigates the systematic integration of reflective practices in working teams of teachers in schools. Two studies are most closely related to my interests, although neither examined teachers working with reflective practice in teams.

Rayford (2010) studied elementary teachers' and principals' perceptions of reflective practice. In this study, 291 principals and 122 teachers in three Western states responded to surveys; three principals and three teachers had follow-up phone interviews. The study found that teachers liked to reflect through solo practices such as journaling.

They also found it useful to reflect on their lessons with fellow teachers on their lessons. Teachers had neither a protocol, nor a set of particular questions during reflection.

Carlton (2010) studied 11 teachers' perceptions of reflective practice in a school district in Tennessee. The district instituted two forms of reflective practice; a peer mentoring program for new teachers called Peer Assistance Leadership Support (PALS) and team teaching. Reflective practice seemed to be a useful approach to improving practice; however, teachers whose mentors were not effective, or teachers who were teamed with teachers whom they could not work with had little room to reflect and found the practice an impediment to their work.

While this review provides a framework, grounded in foundational theorists' contributions within the field of education, my intention was not only to validate it conceptually, but rather to explore its utility. My goal for the research that followed was to understand how teachers and teacher teams experienced a 'refined praxis' approach, if and how they found it useful, and if they perceived it had any connection to their instruction.

In the next Chapter, I share my research questions, as grounded in my goal for understanding teacher experience with refined praxis, and the methodology I employed to answer these questions.

Chapter 3: Research Questions, Methods and Validity

Because I wanted to know how teachers experience refined praxis as individuals and in teams and how they say it affects their instructional practice, I developed the following research questions to guide this study:

1) How do individual teachers who are grouped in teams that attempt to engage in refined praxis describe their own experience?

2) How do teams of teachers that attempt to engage in refined praxis describe their team experience?

3) How do teachers and teams describe the connections, if any, between refined praxis and their instruction?

There are multiple ways one can experience something (such as physically, spiritually, emotionally, subconsciously, levels of consciousness in developmental psychology, etc.). I began my analysis by simply reflecting on how teachers described their experiences with refined praxis. What emerged was that teachers and teams of teachers were open to learning, in a few cases, in powerful and meaningful ways. I then differentiated simple single-loop from the more profound double-loop learning (Argyris & Schon, 1978), that was taking place in teachers' refined praxis experiences.[4] My rationale for using single and double-loop learning as the lens for examining refined praxis was that it was directly aligned to the theoretical framework of refined praxis and it also allowed me to more deeply analyze the impact between refined praxis on individuals, teams and their instructional practice.

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[4] Single and double-loop learning will be explained in the conceptual framework.

Methods

I conducted a qualitative study utilizing constructivist grounded theory methodology (Charmaz, 2014) because refined praxis is a new theoretical framework which has not been studied before, and grounded theory is an appropriate tool when there is little to no existing empirical data on a given subject of study (Charmaz, 2006, 2014; Glaser and Strauss, 1967; Strauss and Corbin, 1998; Willig, 2008). In addition, the values, priorities and actions that affect the researcher's views form foundational assumptions that can be mitigated by constructivist grounded methodology (Charmaz, 2014), because the idea is to keep as close to the data as possible. Moreover, data analysis of participants' views - teacher perceptions in this study - require a grounding in the teacher's understanding of the situation or event that transpired (Charmaz, 2014). Thus, constructivist grounded theory allowed me as a researcher to reduce personal biases while simultaneously increasing an understanding of how the participants described their personal experience.

I gathered data through document collection, and individual and focus group (team of teachers) interviews from June through August of 2015.

Site Selection

I studied teacher teams that have been trained to engage in refined praxis. These teams are all located at three schools in New York City that are implementing The New American Academy Model (TNAA) which includes refined praxis as an integral part of the model.[5]

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[5] A public school in the Bronx, 504 students 30 teachers, 5 teams; a public school and a charter school in Brooklyn with 280 students, 18 teachers and 6 teams, and 180 students, 13 teachers and 3 teams, respectively; totaling 61 teachers and 14 teams.

The Schools' Design of Refined Praxis

The team members at these schools engage together in structured refined praxis weekly sessions for 1.5 hours.   Within these sessions, one "focus teacher" describes his or her own problem of practice, usually posed as a dilemma with which that teacher is wrestling. The focus teachers are free to choose any problem of practice to share. The problem may be pedagogical, organizational, or even personal (within a professional framework). The team then supports the focus teacher in probing more deeply the sets of assumptions he or she holds that underlie the problem, and how the focus teacher might come to better understand any contradictions amongst these assumptions or in applying them to practice. The teacher thus has deeper insight into him/herself. Each weekly reflection is documented with protocols that structure the discussion and next steps for the focus teacher to try before the next meeting. The protocol is shared with a refined praxis coach on a weekly basis. The following week, the team checks in with the teacher's progress in their problem of practice, and a new focus teacher's problem of practice is probed deeply.

After all the teachers have completed a cycle of reflection, with each teacher having the opportunity to be the focus teacher, the team meets for half a day with the refined praxis coach to discuss and analyze their reflections, insights, learning, and the resulting implications for practice for that cycle. The process is designed so teachers uncover their assumptions and possibly refine their beliefs, which ultimately may change their behavior/instruction.

Teachers were prepared for refined praxis during a five-week summer training course during which team members learned listening and communication skills, became familiar with refined praxis and also observed a refined praxis session. In the observation, teachers who were familiar with the process demonstrated (in a fishbowl structure) a refined praxis session.

I asked all fourteen teams in the three schools if they would like to participate in this study (Appendix A: Consent letter) and all agreed. Two processes were put in place to winnow the research to six teams (two from each school): a test for team continuity for at least two years and then random selection.

Continuity was critical because if teachers were no longer part of the team, my ability to interview them individually or as a team was reduced. Although the continuity of the team allowed for easier access to the team experience, the very selection may have built in a set of cohesive teams and some selection bias. Cohesion, though, did not necessarily translate into effective teams. Out of the fourteen teams, three were new and two were reconstituted which left nine teams for selection.

It was important to randomize teams selection in order to generate more wide-ranging data. In one school, only two teams had enough retention of team members so they were chosen automatically. In the second school, I drew two teams randomly from a group of three teams. In the third school, two teams were randomly drawn from four possible teams. The randomness happened by drawing team leader names from a hat.[6] Although random sampling is unusual in qualitative studies (Miles, Huberman and Saldana, 2014), the benefit to this study was that in lieu of examining teams chosen for a

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[6] The hat was a personal black Borsalino.

particular reason, such as perceived success as teams, and then exploring their reasoning through the lens of success, random selection allowed for a whole range of possibilities. In fact the teams selected in some cases revealed vastly different experiences from each other.

Data Collection

The Data Collection had three phases: document collection, interviews with individual teachers about their experiences and focus group interviews with teams:

Phase 1: Document collection

The document collection included refined praxis protocols, schedules, and summer preparation documents. The documents provided context and helped me understand both the structures and tools used to create a system of refined praxis system. I asked the following analytic questions based on Prior (2008): what the originators of the documents wanted to accomplish; the process of producing the documents; and how, what, when and to what extent were the documents used?

Phase 2: Individual interviews

Individual interviews: in order to answer Research Questions (RQs) 1 & 3, I conducted 26 individual interviews (including the teachers, the refined praxis coach, and teacher trainers) that were approximately 60-90 minutes to encourage story telling and to explore participants' experiences and allow for unanticipated possible areas of interest (Charmaz, 2014). The refined praxis coach gave me rich general contextual data that painted broad strokes as to the work in the three schools. The three summer trainers were those who had simulated a refined praxis session in the summer training session. Their interviews also enriched the context of the work because they described how they drew

from their own experiences to help distill the process to the new teachers (Appendix C: Refined Praxis Coach and Summer Teacher Trainer Protocol). Thereafter I interviewed every member of the six teams because I was interested in how different individuals on the same team experience refined praxis. I audio taped, with the interviewee's consent, and transcribed the data of the interviews. I asked them open-ended questions to describe their experience with refined praxis in their teams, as well as inquired into what they had found to enable or detract from their learning, illustrated with specific examples from their team meetings and their practice (Appendix D: Individual teacher interview protocol). I asked all interviewees if it would be possible to do a follow up interview if necessary. I refrained from using leading questions (Maxwell, 2012) and asked questions in the past tense (Weiss, 1995). In addition, a teacher was able to decline to answer any question if the teacher wished. Furthermore, I articulated that my intention was not to prove whether refined praxis was effective or not, but rather to understand their experiences and perceptions of refined praxis. After the interview and transcription were complete, I printed and gave teachers a copy of their individual transcripts.

Phase 3: Focus group

In order to answer RQs 2 & 3, I conducted focus group interviews. Focus groups helped spontaneous dialogue that was less influenced by the researcher than in individual interviews (Gaskell, 2000; Madriz, 2003). The focus group interview was approximately 90 minutes and explored how refined praxis was incorporated in their practice (Appendix E: Focus group interview protocol). I asked teams to describe specific examples to illustrate their answers. I video recorded (so that in reviewing the recording I could

determine who was speaking) and transcribed the interviews. I gave each team leader a copy of their focus group transcript.

Data Analysis

The unit of analysis was the perceptions teachers have of refined praxis, both individual and within their teams and its perceived connection, if any, to their instruction.

Immediately following document reviews, individual interviews with the refined praxis coach, summer trainers, and teachers, I took notes about emerging codes and wrote memos to document potential codes.

I then conducted line-by-line gerund coding on each individual interview (in chunks of six lines). Unlike coding for themes or topics, coding for gerunds (Charmaz, 2014; Glaser, 1978) allowed me to stay as close as possible to the perceptions of teachers' data by focusing on the actions in each line of a transcript. As I analyzed both the individual team members and team (focus group) transcript, I wrote a memo as to emerging patterns the data revealed. I then contrasted individual team member experiences within teams and then in context with their team. The contrast between what individual teachers said in private as opposed to the more public setting of the focus group was also analyzed. Finally I contrasted the different team experiences. At first I found that teachers seemed to all agree that they thought refined praxis was necessary for their learning. My ad hoc committee asked me to dig deeper as well as see if I found examples of double-loop learning. The analysis yielded startling discoveries.

Validity

I had access to these three schools due to my experience as a founding member, although I am no longer employed at TNAA. In consultation with my committee, I

identified additional steps to help mitigate potential bias due to my prior role and to ensure that this study yielded useful data.

Because my methods used the constructivist grounded theory model, I was vigilant about hastily forming my own interpretations instead of understanding the viewpoint of the teachers. I minimized this validity threat by using open-ended questions in the interviews (Maxwell, 2012) so that teachers could elaborate on their answers. I also checked my analysis with my interpretive community and ad hoc committee members, who looked over my codes and helped refine and possibly add other codes that I may have missed.

I strived to minimize researcher bias by randomizing (Miles, Huberman and Saldana, 2014) the teams selected to participate in this study as well as having some standard protocol questions for all participants and avoiding asking leading questions (Maxwell, 2012).

In order to minimize theory validity threat, I wrote analytic memos during the data collection and analysis phases of this study (DeLyser, 2008). The analytic memos noted (a) my reflections on the interviews, (b) how my personal experiences may have influenced my analysis (Creswell, 2009) and (c) the extent that my experiences could enter the study's findings (Creswell, 2009). I shared the analytic memos with my interpretive community to compare my impressions with the actual transcripts. I also deliberately looked to develop multiple, contrasting interpretations of the data (Yin, 2009).

Finally, in order to help interviewees feel safe and free to be honest, I was explicit in regards to my role as Research Fellow in the recruitment letter (Appendices A & B). I

reminded the interviewees that I was neither judging nor evaluating their efforts but rather was interested in their perspectives of which aspects of refined praxis were effective or ineffective. I ensured confidentiality through pseudonyms of participants and the destruction of documents, recordings and videos from the study upon its completion and acceptance. In addition, I made sure that potential participants knew that staff members and other team members could be able to identify teachers, despite my best attempts at confidentiality.

Chapter 4: Context of the Refined Praxis Experience

In this chapter, I describe the context of the study: first, I define three terms that are critical to understanding the analysis in chapters 5 & 6 -- governing variable, single and double-loop learning; second, I explain the differences between Model I and II behaviors; and third, I explain why and how I chose three of the six teams studied to highlight their learning.

Governing variable, single and double-loop learning

How teachers experience refined praxis as individuals and in teams and how they say it affects their instructional practice is the focal point of this study. In my analysis, I looked for three specific aspects of teachers' experiences of refined praxis: the existence of a "governing variable," as well as of "single and double-loop learning." These features of teachers' experiences allowed me to address my third research question, focused on the connection between refined praxis in teams and instruction.

According to Argyris and Schön (1974, 1978), a governing variable is an assumption, belief or value a person or group holds to be true. It is a given by which a person's actions flows. Two kinds of learning are then possible; single and double-loop. Single-loop is, generally speaking, problem solving or trial and error. A problem arises and we try different strategies to solve the problem with the expectation of different results. This is the most common type of learning. In single-loop learning, we are seeking a better means of operating with our governing variable. Double-loop learning takes place when instead of just trying different action strategies, one starts to identify

and examine one's governing variables, potentially altering them. These alterations may also alter one's actions.

Diagram 1
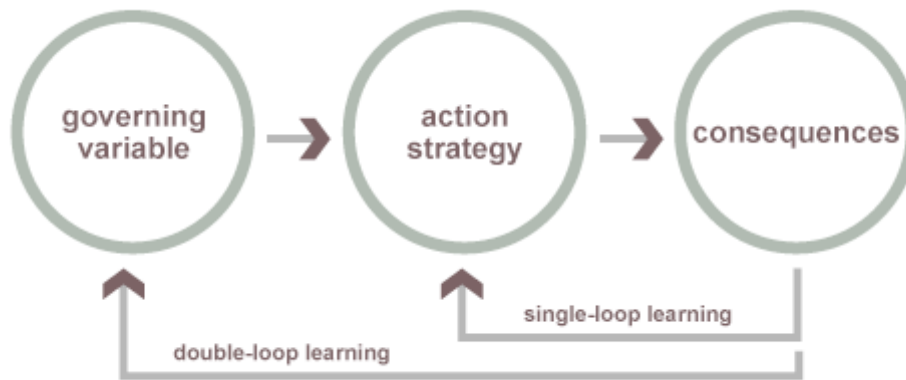
In Diagram 1 above, single-loop learning looks at the action strategy and its consequences without reflecting on the governing variable:

> In single-loop learning, we learn to maintain the field of constancy by learning to
> design actions that satisfy existing governing variables. In double-loop learning,
> we learn to change the field of constancy itself. (Argyris and Schön, 1974, p.19)

For instance, one of the respondents found difficulty with classroom management. Other teachers helped by giving the teacher additional classroom strategies, such as transition techniques and her classroom management improved (single-loop learning). Another teacher also had classroom management problems. However, he was confused, because he was a highly experienced teacher and had experienced success in a different school. He tried different classroom management techniques (single-loop learning), but they didn't seem to work. As his colleagues questioned him, he realized that he was really good at teaching math and interdisciplinary studies and the same children were having

success in those content areas; whereas when he was teaching English Language Arts (ELA), he was having little success. What he realized was that his governing variable was that he was a good teacher of all subjects, and yet the different classroom management strategies he tried were unsuccessful. He then questioned his governing variable. "Maybe I'm not a good ELA teacher." At that point he revised his governing variable and decided he needed to learn more of the craft of teaching ELA (double-loop learning). He totally changed his approach to the problem and became a better teacher because he questioned his underlying assumption ("I am a good teacher") and came to the realization ("I am not a good ELA teacher") as a result "I need to improve my knowledge of early childhood literacy."

Double-loop learning is a more rare form of learning than single-loop. It is not often that a person questions their assumptions, beliefs or values. It is especially important then, to understand the type of learning culture that are conducive to double-loop learning, a culture that both allows and encourages questioning oneself or others. Argyris and Schön divide learning cultures into two types: Those exhibiting Model I behaviors and those exhibiting Model II behaviors are more likely to lead members to move beyond single-loop learning to double-loop learning.

Models I & II behaviors[7]

Models I and II behaviors identify the underlying conditions for single and double-loop learning.

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[7] Explanation taken from Waronker (2013). *Building a theory of reflective practice: A critical review and analysis of John Dewey, Paulo Freire and Donald Schön.* Qualifying Paper. HGSE.

There are four governing variables for Model I behavior that occur when an individual is engaged in single-loop learning: first, the individual looks to achieve the purposes as he or she already perceives them (Argyris and Schön observed that "participants rarely tried to develop with others a mutual definition of purposes nor did they seem open to being influenced to alter their perception of the task"). Second, individuals look to maximize winning and minimize losing ("participants felt that once they had decided on their goals, changing them would be a sign of weakness"). Third, individuals strive to minimize eliciting negative feelings ("participants were almost unanimous that generating negative feelings or helping others to express their feelings tended to be seen as ineptness, incompetence, or lack of diplomacy"). Fourth, individuals seek to be rational and minimize emotionality ("be objective, intellectual, suppress your feelings and do not become emotional") (Argyris and Schön, 1974, p. 66-67). The table below shows the full characteristics of Model I.

Model I Behaviors

Governing Variables for Action	Action Strategies for Actor	Consequences for Actor and His Associates	Consequences for learning	Effectiveness
Achieve the purposes as I perceive them	Design and manage environment so that actor is in control over	Actor seen as defensive	Self-sealing	Decreased

	factors relevant to me			
Maximize winning and minimize losing	Own and control the task	Defensive interpersonal and group relationships	Single-loop learning	
Minimize eliciting negative feelings	Unilaterally protect self	Defensive norms	Little public testing of theories	
Be rational and minimize emotionality	Unilaterally protect others from being hurt	Low freedom of choice, internal commitment, and risk taking		

(Argyris and Schön, 1974, p. 68-9)

Model I behaviors are associated with learning that preserves the person's existing belief system, which does not undergo change in this model. In other words, when an individual (or team) operates with Model I behaviors, single-loop learning results. For instance, person A (pA) is a teacher who always does a round robin approach to students answering questions. Person B (pB) comes along and says, "I'm wondering if

you noticed how after you called on a student, he knew he wasn't going to be called upon again for a while, and thus began to play under the table. Why don't you call on students at random, instead of round robin?" At which point pA says, "Don't micromanage me. This is the way I've always done it. I get great results from my students." pB is hurt that he is being accused of being a "micromanager" and leaves pA alone. pA is seen as defensive and his/her learning is both self-sealing (meaning not open to other people's ideas), and single-loop.

Model II behaviors, which occur in double-loop learning, have three governing variables. First, the individual seeks valid information about another individual or situation ("the actor provides others with directly observable data and correct reports so they may make valid attributions about the actor"). Second, the individual experiences that he or she can make a free and informed choice ("the more an individual is aware of the values of the variables relevant to his decision, the more likely he is to make an informed choice. A choice is free to the degree to which the individual making it can: define his own objectives; define how to achieve these objectives; define objectives that are within his capacities; and relate his objectives to central personal needs whose fulfillment does not involve defense mechanisms beyond his control."). Third, the individual makes an internal commitment to the choice and constantly monitors the implementation ("The individual is committed to an action because it is intrinsically satisfying – not, as in the case of Model I, committed because someone is rewarding or penalizing him to be committed … Individuals who feel responsible for their decisions will tend to monitor them to see that they are being implemented effectively, will tend to

seek feedback to correct errors and to detect unintended consequences, and will therefore tend to obtain valid information.") (Argyris and Schön, 1974, p. 86-89).

Model II Behaviors

Governing Variables for Action	Action Strategies for Actor	Consequences for Actor and His Associates	Consequences for learning	Effectiveness
Valid information	Design situations or encounters where participants can experience high personal causation	Actor seen as minimally defensive	Testable processes	Increased
Free and informed choice	Task is controlled jointly	Minimally defensive interpersonal relations and group dynamics	Double-loop learning	
Internal commitment to the choice and constant	Protection of self is a joint enterprise, oriented toward	Learning oriented norms	Frequent public testing of theories	

monitoring of the implementation	growth			
Bilateral protection of others		High freedom of choice, internal commitment and risk-taking		

(Argyris and Schön, 1974, p. 89)

Let's return to the teacher example given above: person A (pA) is a teacher who always does a round robin approach to students answering questions. Person B (pB) comes along and says, "I'm wondering if you noticed how after you called on a student, he knew he wasn't going to be called upon again for a while, and thus began to play under the table. Why don't you call on students at random, instead of round robin?" At which point pA says, "Wow! I never noticed that before. I thought the structure of round robin built consistency and control, but come to think of it, you are right! Some students are not paying attention after they are called on. I guess my fear is losing control of the class. Let me try questioning at random and see if I can get the whole class' attention all the time. Maybe I'll have more control as a result."

pA, in Model II, is seen as learning-oriented and is not seen as defensive. There is a public testing of pB's theory of questioning students at random instead of round robin and double-loop learning is given an opportunity to happen as pA acknowledges his/her fear and is willing to share valid information without fear of being perceived negatively.

Rationale of analysis of three teams out of six studied

I found that not all individuals or teams benefited from refined praxis in the same way. Initial analysis revealed that Argyris and Schön's schema of single and double-loop learning aptly illuminated various forms of teacher learning.

In at least one team, all members of the team experienced both single and double-loop learning. In others, all members of the team experience single-loop but not double-loop learning. And in some other teams, members were mixed in terms of single and double-loop learning. Thus, in selecting which teams to write about, I chose a team that represented each category of possible learning. In Team Alpha, every member demonstrated single and double-loop learning. In Team Bravo, members only described single-loop learning. Team Charlie included a mixture of both single and double-loop learning experiences.

Identifying where the single-loop and double-loop learning was demonstrated allowed me to compare the instances of learning with individual and team behavior. I began to notice patterns similar to those Argyris and Schön identified for the types of cultures and behaviors that align with and support double-loop learning, as well as those that might work against it.

The beliefs around refined praxis that teachers or teams held helped determine the level of learning experienced. In the next two chapters I will describe how Argyris and Schön's conceptualization of single and double-loop learning manifested itself in my data, first with individual teacher analysis in Chapter 5 and then in team analysis in Chapter 6.

Chapter 5: Analysis of individual teacher learning within teams

As discussed in Chapter 4, one can learn either in a single or double-loop manner or both (Argyris & Schön, 1974). In single-loop, one's governing variables (i.e. beliefs, values or assumptions) are not questioned, but rather taken as givens. The most common types of single-loop learning are trial and error and problem solving. In double-loop learning, one's governing variables or assumptions are questioned. This type of learning is not common, as people don't generally question their governing variables. In order to create the conditions for double-loop learning Argyris and Schön (1974, p. 181) note the importance of a Model II environment and these environments are rare. "Designing Model II learning environments is a very complex task, about which we know pitifully little. Moreover, it is so easy to fall into the trap of designing learning environments that are opposite to or oscillating, within a Model I world."

Due to the isolation of teachers (Donaldson, et al., 2008) and the ineffectiveness of professional development (Darling-Hammond, et al., 2009), many teachers are limited in the type of learning experiences they typically have in schools. In some schools teachers do have coaches or administrators who give feedback to improve their instruction; however, as one teacher in this study explained, a simple problem-solving mentality permeated in schools in which she previously worked, "You get positive feedback first and then you give them their next steps. It's all about 'I'm going to tell you what I saw that was good. I'm going to tell you what you need to fix, and now I'm going to tell you how to fix it.'" This kind of learning is single-loop as it does not surface any governing variables or prompt reflection on them.

Most professional development for teachers is not currently designed for double-loop learning, but rather for single-loop learning. Teachers are given either scripted curricula or prescribed methodologies (Darling-Hammond, 2009), and most of the learning in the classroom is trial and error as teachers try out the curricula or methodologies with varying degrees of success. TNAA's adoption of refined praxis allows for the possibility of teachers' to experience double-loop learning.

Within this research, some teachers in TNAA only describe single-loop learning and some describe double-loop. Why? Do teachers have certain orientations towards knowing and self that limit their learning experience? As I delved into the data, I considered that perhaps teachers were limited in their ability to reflect based on their adult developmental stage (Kegan & Lahey, 2009). However, as a grounded theory study, I did not use a measurement tool to determine a teacher's developmental level. Therefore, in this study I explored the beliefs that teachers have verbalized surrounding the refined praxis experience and the ways in which those beliefs influenced their learning.

In this chapter, I analyze each individual teacher's backgrounds, beliefs around refined praxis, learning experiences and whether the teacher demonstrated single or double-loop learning. At the end of the chapter I compare and contrast the learning across the teams of teachers based on the individual learning and connect their learning to the types of behaviors (Model I and/or Model II demonstrated).

One particular problem of practice is ascribed to each teacher. Most problems of practice appear to happen during an insightful moment, however, these insights or

realizations took months to unfold. The learning experience was not an instantaneous

insight, but a more gradual unfolding – a coming to know something differently.

Team Alpha[8]

Individual teacher description

Olivia

Olivia's background

Olivia has more than ten years of teaching experience at several schools and is

Alpha's team leader. According to Olivia, her last school was called the "conveyor belt."

She described how students had to walk the hallway, "They would have the students walk

along the perimeter of the hallway to get to each class. So if my classroom was directly

across the hall … eight feet was the width, however, man, but – I had to walk the students

all the way around…" Olivia found that the schools that she had worked in valued rules

and a discipline that seemed stifling. She was ready to quit the profession when she came

to TNAA.

Olivia's belief around refined praxis

Olivia defined refined praxis as, "a process of group reflection and empowering

others so that they are not just individuals, but working together as a team they can give

and receive feedback in order to improve their own professional practices." Olivia

believed that the most important element of refined praxis was "objective listening"

which meant not jumping to conclusions or problem-solving, but rather letting the teacher

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[8] Pseudonyms have been assigned to all study participants (including team
designations) in order to preserve anonymity.

"talk through [an issue] and try to figure it out on their own." As a team leader, her vision of refined praxis was, in effect, an inquiry stance that allowed teachers to generate their own solutions.

Olivia's learning experience

She described a time when she told her team that she felt "overwhelmed." She felt her work was never ending and she kept working harder and harder. As her teammates questioned her during refined praxis, they said that the tasks that she was doing were things they wanted to do. She thought the tasks would be burdensome on the teachers, but the teachers said that she was not sharing the responsibilities of the team. Olivia remarked, "That was an awakening for me." She realized that she thought she had been helping the team, and the team actually felt that they weren't empowered enough and wanted some of the responsibilities.

Olivia's single and double-loop learning

Olivia saw her team leader role as one of helping others. Olivia thought helping the team was doing all the support and "menial" work. As needs for support arose, she worked harder and harder to help her team (single-loop) to the point that she was overwhelmed. At that point the team revealed that her assumption of what it meant to help the team was not their assumption. For them, helping really meant empowering by allowing her teammates to share the work and the responsibilities so that they could be further developed as teachers. Her "awakening" was as a result of realizing that her assumption of helping others needed to shift from taking care of them by doing things for

the team to empowering them to help themselves. Olivia's teammates exhibited Model II behaviors as they expressed a willingness to accept responsibility for Olivia's predicament by assuming some of her workload. In addition, each team member exhibited minimal defensiveness and assumed best intentions from each other.

Leah

Leah's background

Leah was a veteran Special Education teacher who had the respect of her school community prior to coming to TNAA. She said that she was comfortable where she was because she was working in her comfort zone. However, she felt she wasn't learning. She wanted a schooling experience that would challenge her and help improve her practice and was happy to join TNAA and come to New York City.

Leah's belief around refined praxis

Leah described refined praxis as "making sure that the way we think we're teaching matches the way we want to be teaching-" in essence, matching her espoused theories with her theories-in-use. In order to ensure that what a teacher thought and what she did was aligned, her belief around refined praxis was "openness." She posited that openness meant "receiving all types of feedback" whether positive, or constructive and maintaining a stance of "neutrality" wherein one was not "defensive," but rather "letting your guard down, being willing to hear it."

Leah's learning experience

Leah shared with her team that her management of her class was not good and she was feeling "ineffective." She was teaching a general education class and felt that all her techniques that had worked in her experience as a special education teacher were no longer working in this new environment. She was having a hard time reconciling the fact that she had been a "good" teacher in her previous experience and was now not feeling the same. She couldn't understand how another teacher, Mia, was having success with the same students she was teaching. During refined praxis, Olivia and Mia began to help her with discreet aspects of becoming a writing teacher, and she started to see improvement. For instance, as a Special Education teacher she was used to having nothing on the walls of her classroom. This technique had allowed her to keep the students less distracted. Olivia began to question Leah's assumption that what worked in a Special education classroom (bare walls to minimize distractions) would also work in a General education setting. Olivia directed Leah to observe Mia's practice in teaching writing. Mia both modeled and guided Leah in the art of teaching writing and explained to her that students needed visual aids like anchor charts. She started to put up anchor charts, word walls – all in an "intentional" manner. Having individual writing folders instead of baskets, different types of writing paper laid out for students, pencils for each table instead of a giant bucket, made the students more independent and not as reliant on her. As she started putting better systems in place, she found that she "actually had the time to conference and to pull small groups and wasn't running myself ragged every class period."

Leah's single and double-loop learning

She described the shift she experienced as one wherein she came to understand it wasn't that she was a bad teacher because she was ineffective, but rather she was inexperienced as a writing teacher.

This is akin to a "fixed" vs. a "malleable" understanding of capacity (Dweck, 2006). A fixed mindset is one that defines a limit to the intellectual capacity of the individual (i.e. the Intelligence Quotient – IQ). A malleable mindset is one that believes that an individual can have a growth mindset. For instance, a growth mindset would posit that children who have been diagnosed with autism, down syndrome or mental retardation to the extent that their IQ would make reading and writing a nearly impossible task, can not only accomplish those aforementioned tasks, but much more (Feuerstein, 2010).

Leah had a governing variable that defined teachers in two "fixed" categories; good or bad. She had been a good teacher in her previous school. She was confused as to how she now was not a good teacher. She was frustrated that another teacher had success with the same students. She was stuck in a single-loop of using all the techniques that had worked for her in the past and found them still lacking. What her colleagues helped her see was that a teacher could become better (malleable). Her double-loop learning was a shift of the governing variable from a fixed to a malleable assumption of what a teacher could be. Her new assumption that she was a malleable teacher who could improve allowed her to realize that she had to learn the craft of becoming a better writing instructor; as a result, her instruction and classroom management improved. She said that this next year after improving in her writing instruction, she was now becoming a reading

teacher, because she didn't want to feel "comfortable," meaning she didn't want to remain static in her skills.

Leah's team demonstrated Model II behaviors as both Olivia and Mia engaged Leah by giving her valid information around best literacy practices and Leah accepted responsibility for her growth as a teacher. Once again, there was little defensiveness exhibited by the team as in Olivia's case.

Kelley

Kelley's background

Kelley had worked in school settings as an after-school teacher. Two years ago she worked as an assistant teacher. When a teacher in the team had to be absent for a month, Kelley was given the opportunity to step up to the plate and teach. At first she wasn't sure she could do it, but found herself enjoying teaching. She enrolled in a certification program and started out as an apprentice teacher at TNAA last year.

Kelley's belief around refined praxis

Kelley defined refined praxis as "working in a team" that "reflects" on practice in order to "constantly get better." Kelley's belief was that refined praxis necessitated the concept that "you're not going to be perfect." Without this sentiment a person's arrogance or sense of ego gets in the way of reflection.

Kelley's learning experience

She described one experience wherein she was having difficulty with one particular class. Her assumption was her difficulty with that particular class was due to her relative inexperience as a first year teacher. She believed there was little she could do during the first year to change the dynamics. At best, she would muddle through using trial and error to improve the situation. She explained how difficult it was for her to teach the concept of number sense with adding two digits, "I was stuck between just pushing them on and going over it again and again and again. [We] used counters, we used timelines … we used whiteboards. I'm just like, 'they still can't get this concept, they don't know what to do.'"

During a refined praxis session, she shared her challenge with that class, and her assumption was tested when she discovered that all her experienced teammates were having difficulty with the same class. As the math teacher in the group Kelley recounted, "They're getting behind in reading too; they're getting behind in writing. I was like, 'oh okay. I thought it was just me. I thought, I'm the new teacher here and I'm not doing things right.' They're like, 'No, it's something we've all experienced.'"

Her assumption that "it was just me" was no longer valid. She was then able to listen to a suggestion from Olivia, "that's when I got the idea from [Olivia] my master teacher to do the anchor chart outlining each step. I don't know why I didn't think about that before." Once she implemented the anchor chart so that every step of a process was clearly outlined and could serve as an easy visual reference for the students in the classroom, she experienced success, "Even though the entire class didn't get the concept -- that anchor chart -- just in one lesson I would say about 60% of the class got it."

Kelley went on to explain, "It was just helpful to know we're all struggling."

This insight allowed her to do away with her more limited view that her lack of success with her students was because she was simply new, and as a result the team thought more deeply as to why this particular group of students were not being successful. They theorized that this group of students was more visual and also needed clear processes that could be used as reference points throughout the day according to Olivia. Kelley changed her practice to meet the students' needs.

Kelley's single and double-loop learning

Kelley was stuck in single-loop at first. She at first assumed she could be effective and tried a variety of strategies and unfortunately remained ineffective with that particular group of students. She attributed her lack of success to the only factor she could think of, the fact that she was a new teacher. During refined praxis, the shift occurred when she realized she was not the only teacher experiencing difficulty with this group of students. At that point she realized that she could improve the situation just like all the other teachers on her team. This is a similar shift that Leah had. Kelley's view of being a new teacher was that a new teacher is supposed to be ineffective (fixed) and therefore there was little to be done while a person remained new. Her understanding shifted when she learned all the teachers in her team (and all of them were veterans) were also struggling. Now it was possible for her to become more malleable in the sense that she could learn better practice (i.e. anchor charts), in order to improve outcomes. As her governing variable changed from a fixed view of new teachers to a malleable view of all

teachers, she was able to experience double-loop learning that helped her introduce new practices which yielded positive outcomes.

Both Kelley and her team exhibited Model II behaviors as instead of being defensive, they took responsibility for the lack of learning of a group of students and chose to take steps to help the students based on valid information.

Mia

Mia's background

Mia had three years of teaching experience at a charter school prior to becoming a teacher at TNAA. She felt she was not learning, "I felt like I was really just lacking, had some holes in my knowledge." She went to graduate school and heard about TNAA as a place where she could develop herself as a pedagogue and as a leader.

Mia's belief around refined praxis

Mia defined refined praxis as an "opportunity to reflect on my teaching" with team members where she felt "safe." Her belief around safety was that the team had "the best interests at heart and they want to see me grow as a teacher." Thus, she felt that whether one gave or received feedback, it was coming from a good place and was welcomed.

Mia's learning experience

Mia reflected that she had a student who was small for his age and "borderline intellectually disabled." He was friendless and she worried about his future: "What is his

life going to be like? What is he capable of? … What kind of job is he going to have in the future? Can he live on his own?" During refined praxis, her assumptions were questioned by her team:

> Listening to my team, and creating that space really allowed me to realize that I had some preconceived notions of what it meant to be borderline intellectually disabled.

The team questioned her "preconceived notions" about special education students. Mia realized her biases were lowering her expectations of what he could do. Olivia and Leah shared with her that what was written in the Individual Education Plan (IEP) for the student was not the determining factor in his life, and that change was possible. They questioned why she did not push the child. Mia remarked that "it really shifted my mindset." She started to have higher expectations for him, began to point him out to other students as a potential playmate, and he began succeeding both academically and socially. "He was still behind, but ended first grade a year behind, versus a year plus that he could have possibly been behind had I not been setting the bar higher and higher for him … [and] He's definitely one of the most popular kids because I really highlighted him."

Mia's single and double-loop learning

Mia had a fixed mindset about her student's abilities and potential because of what was written on the IEP. Once her teammates helped her question her governing variable and adopt the belief that a mind was malleable, she totally shifted her approach and saw him blossom.

Mia and her team demonstrated Model II behaviors as her team allowed her to choose to see her student differently. Mia took ownership over the child's development and created a win-win scenario (typical of Model II behaviors). Again, as in the previous examples, Mia exhibited little defensiveness, but an intense desire to learn how to help her student.

Individual learning of team Alpha

All of the teachers in team Alpha experienced double-loop learning. The below table shows a brief summary of team Alpha's individual teacher learning:

	Belief around refined praxis	Single-loop learning and its outcome	Governing variable shift	Double-loop learning and its outcome
Olivia	She believed in inquiry stance that allowed teachers to figure things out on their own.	As a team leader she worked harder and harder to protect teachers from additional duties; as a result she became overwhelmed.	From role of leader to do as much as possible for the team (protective) to role of leader to distribute leadership (empower)	As she distributed leadership responsibilities to her team members, she built their capacity and became more effective.
Leah	She believed in having her espoused theories and	As she had been a successful teacher before, she was confused as to why	From fixed mindset of a teacher either being good or bad to a malleable	She was not a good writing teacher and as she learned better practices for writing instruction she

	theories-in-use had to be congruent, as well as taking an open, non-defensive stance to feedback.	she struggled with classroom management at TNAA. She was stuck because a "bad" teacher struggles with classroom management, and now she despaired as being a "bad" one.	mindset that a teacher can improve	gained successful classroom management.
Kelley	She believed that reflection in a team requires that arrogance or a sense of ego be limited.	She tried things again and again in a repetitive fashion. She felt helpless with this group of students, because they were still not learning.	From a fixed mindset of a new teacher is supposed to be ineffective to a malleable mindset that all teachers can struggle and improve	She no longer felt helpless and applied a new technique (anchor charts) that helped 60% of the students understand a lesson on number sense.
Mia	She believed that in order for refined praxis to work one needed to believe that all	She had low expectations for a student with disabilities and he struggled academically and	From a fixed mindset that a student with disabilities will suffer in life to a malleable mindset	She raised her expectations and changed his outcomes both academically and socially. He blossomed.

	team members have each other's best interests at heart.	socially.	that all students can improve	

Aside from Olivia, whose double-loop learning had to do with her governing variable of her role as a team leader, all her teachers had a fixed mindset about either their own abilities as a teacher (Leah's good vs. bad teachers and Kelley's new teachers are not effective vs. experienced teacher are effective) or about the abilities of a student (Mia's fixed mindset that a child with disabilities will lead a tragic life). Through double-loop learning, they challenged their governing variable about the fixed nature of ability to adopt a stance that ability is malleable in terms of being able to improve themselves or their students.

The question, though, is how did their understanding and use of refined praxis allow them to engage in double-loop learning?

A team leader can set the tone in a team, so one possibility is that Olivia's leadership had established a team culture that valued double-loop learning. She had a clear belief toward being non-judgmental ("objective listening"), and the team's role was not to problem-solve, but rather allow each teacher to figure things out on her own. She defined refined praxis as both giving and receiving feedback with a team to improve instruction. She had a very clear idea in her mind as to what refined praxis should do for her team.

Leah and Kelley also shared a view that one needed to be open to other ideas and not have one's guard up or let one's ego get in the way. In order to let go of one's guard, one generally assumes best intentions from their colleagues. Mia made it clear that she assumed best intentions from her teammates.

Thus, it could be that Olivia began with a more neutral stance of "objective listening" in order to create safety, and the comfort level that all the teachers felt was supported by their beliefs that each team mate had best intentions for them, otherwise it would be difficult to let down one's guard.

This assumption about each other's 'best intentions' gave team Alpha a foundation wherein teachers could give helpful feedback and were open to receive it simultaneously. It was not surprising then that every team Alpha member, from novice teacher to team leader, experienced double-loop learning in the refined praxis sessions.

It should be noted that three Model II behaviors were all in clear evidence: minimal defensiveness, learning oriented norms (of malleable and growth mindsets), and strong internal commitments to changing their practice coupled with risk taking.

Team Bravo

Individual teacher description

Bella

Bella's background

Bella taught in a couple of different cities and had about 10 years of teaching experience prior to joining TNAA. She served as Bravo team leader.

Bella's belief around refined praxis

She described the refined praxis experience as one wherein everyone can "have different ideas," "everybody is listening" and giving "feedback in a safe place." The word "safe" is critical to understanding Bella's understanding of refined praxis. Oftentimes one thinks of a "safe" place as one wherein a person can be vulnerable. Safe, according to Bella, is a place where one's ego is not hurt, but rather protected. To protect her teammates' egos, feedback is tempered.

Bella's learning experience

According to Bella, Bravo team had a lot of classroom management issues. Two teachers in her team were struggling: Carla and Sylvia.

As part of an assignment to all team leaders in the network, Bella had to bring lesson plans from her teaching team. She printed them out, and when she was about to distribute them to all the other team leaders, she noticed that Carla's lesson plans were only shells and had no content. Bella brought this up during a refined praxis session and she exclaimed, "I had so much trust in my team that I didn't think twice. I just printed it [the lesson plan to share with other master teachers of other schools] and I didn't even read it. Then I was going to distribute it, and I was like, 'Wait, you have to give that back to me.'" Bella said that it was no wonder teachers were having difficulty with classroom management because of the lack of planning. Bella, however, did not mention during the refined praxis session which of the teachers had not written out her lesson plan.

After the session, Carla knew that Bella was talking about her and apologized. Bella let her know that just like they rely on her, she relied on them – it's a "two-way

street." Bella used the session to address the issue, but did not address the specific teammate who had not written her lesson plans. Thus, refined praxis was "safe" in the sense that Bella did not point out that the deficiency was Carla's during the refined praxis session.

Sylvia was another teacher who was having difficulty with classroom management. When Sylvia shared how she was struggling, Bella let her know that she "was being hard on herself" and assured her that she was making improvements. Bella was quite forthcoming that Sylvia was struggling in our private interview; however, during the refined praxis session, Bella seemed to be trying to protect Sylvia from feeling any ineffectiveness.

In addition, Bella, herself, related how during refined praxis she shared how "ineffective" she was feeling about her support for the team. She was in the classrooms coaching, "helping," yet nothing seemed to be working in regards to classroom management. She admitted to the team that she was hard on herself and the team affirmed that Bella was being hard on herself. Her team disagreed with her in terms of her feeling of "ineffectiveness." They pointed out that she was helping them. She took some of the most difficult children and motivated them in the morning, and checked in with how the students behaved in the afternoon. Teachers saw improvement in the students' behavior in the classroom as a result. The compliments helped Bella feel more balanced.

Just like Bella protected the feelings of her teammates, they, in turn, protected her feelings. Thus, Bella felt "safe" in sharing her thoughts, but instead of getting helpful feedback on how to improve, she received only affirmation.

Bella's single-loop learning

My interpretation of how this team functioned is that Bella's governing variable of a "safe" refined praxis session led to single-loop learning. Bella learned through her team members' reassurance that the support she gave was effective (namely the pulling of students to reinforce positive behaviors). Carla and Sylvia spoke about how Bella was being helpful by reinforcing positive behavior in a group of students every day; however, they never spoke about whether Bella's coaching was effective or not.

Bella's belief in safety may also have limited Carla and Sylvia's learning because Bella protected their feelings in the group setting. She did not point out their areas of weakness so that the team could help them reflect and learn.

Bella used refined praxis as a "safe" place, but only got (and gave) affirming feedback and thus did not experience any shift in governing variables.

Bella seems to have established Model I norms that minimized emotions during meetings. By protecting the feelings of others, the team couldn't probe inadequacies in a deep manner.

Deliah

Deliah's background

Deliah was a novice teacher at TNAA, who was experiencing more success in classroom management than her teammates were. However, she felt that she didn't really know what she was doing in the classroom.

Deliah's belief around refined praxis

Deliah felt that in order to give or receive feedback there needed to be a "relationship." The longer she worked with a teacher, the more she felt that she could receive feedback from that teacher. She described how "strong" her relationship was with Bella and how her relationship with Carla has also developed. However, she said that her relationship with Sylvia was developing.

Deliah's learning experience

Deliah related that she videotaped a lesson that didn't go well. The team comments were "all positive but it was almost ... because it was so bad that they didn't want to say anything bad." She added, "It was bad. I'm just getting this empty feedback." Deliah, however, did not tell her team how useless their feedback was, how they "sugarcoated" the lesson. She said that they were trying to be "helpful" by protecting her feelings.

To Deliah, the reason why her teammates did not give her the feedback she needed was because "we didn't have a relationship yet."

She did point out that a teammate did help her with math journals and explained her thinking behind the journals. She found this very valuable and it had a positive impact on her classroom.

Deliah's single-loop learning

Although Deliah was ready to receive feedback on a "bad" lesson, her team was self-sealed and did not share with her either the deficiencies of the lesson or the action

steps necessary in order to improve. Deliah, however, did not share her frustration with her team, because she had a governing variable of "relationships" need time for trust to be able to build. She assumed the relationships were not yet sufficiently well established in order to have the dialogue necessary to build her practice.

She did learn a better action strategy in the classroom in terms of developing math journals for her students. This action strategy was in the realm of single-loop learning, where she learned without a shift in her thinking.

Deliah experienced Model I behaviors as her team was self-sealed – none offered her feedback she needed in her lesson. She too was self-sealed as she did not let them know how frustrating it was for her to not receive meaningful feedback. As long as the team felt that protecting members' feelings was a norm, the team held back the learning potential.

Carla

Carla's background

Carla was a veteran teacher who taught at two other schools for several years. She felt that she had been an effective teacher prior to working in TNAA. After joining TNAA, though, her classroom management suffered and she could not figure out why.

Carla's belief around refined praxis

Carla believed it was "fortunate" that "interpersonal" issues were never discussed in refined praxis sessions. She said that the team was "pretty good about just going and speaking to people one-on-one and listening and trying to fix it." Other team members

acted accordingly. For example, Bella had her difficult conversation with Carla about the missing lesson plans outside of refined praxis time. Carla believed that interpersonal issues should be handled one-on-one. It would be unfortunate if the whole team would need to be involved in the matter.

Carla's learning experience

Carla had difficulty sharing with her team her classroom management woes because she had experienced success prior to coming to TNAA. She described how her team helped her in terms of action strategies such as better transition techniques. In addition, her team helped her understand that she could control her own feeling of happiness. She could make a choice to feel either happy or miserable, but since the team was supportive, she should feel happy. She felt that even though she was not being as effective as she hoped, she still had the support of her team. This was similar to Bella's experience in the sense that her team was trying to make her feel better, but the "ineffectiveness" remained. There was no shift in terms of helping her create different outcomes.

Carla's single-loop learning

Carla engaged in single-loop wherein she learned better action strategies in her classroom (better transitions). However, her level of effectiveness remained the same. There was no deep exploration as to why she was not experiencing success at TNAA. The focus was either on developing an action strategy such as better transitions or her attitude in terms of happiness, but not on the possible root causes that prevented her from

gaining effectiveness. Instead of being questioned by her team, she was reassured and supported during refined praxis.

At a glance, though, a free choice (happy vs. frustrated) seems to indicate a type of double-loop learning in a Model II environment. However, the team was encouraging her to feel happy and in so doing, took away her choice to feel frustrated that she was not improving fast enough – they minimized her feelings – a clear Model I norm.

Sylvia

Sylvia's background

Sylvia had six years of teaching experience prior to working in TNAA. At the end of her sixth year she wasn't sure she wanted to continue teaching. A friend of hers shared her excitement about TNAA and Sylvia successfully passed the interview process. However, like Carla, Sylvia had difficulty with classroom management.

Sylvia's belief around refined praxis

Sylvia said that refined praxis worked when people were not "judging" each other. She expounded that she was her own "harshest critic," and that her team then balanced her by saying, "Oh, you're actually doing a really great job." Thus, her belief was that if one were to judge oneself harshly, then the team had to give a countervailing positive argument in order to be balanced as a "non-judgmental stance."

Sylvia's learning experience

Sylvia said that her greatest challenge was classroom management. The team tried to help with different techniques. "As a team we talked about different moves here and there to do with the kids, like trying to prevent flare ups before they happened, removing students who were being completely out of control from the room." But classroom management, she concluded, "remained a challenge for me."

Sylvia's single-loop learning

Sylvia also displayed single-loop learning as she was learning techniques (action strategies) such as identifying triggers (in terms of behavior) to prevent flare-ups and methods of removing students from the classroom. However, her underlying assumptions as to why she was unable to become more effective were never addressed. Her governing variable of non-negative judgments from her teammates and statements like she was "doing great," were helpful emotionally but not pedagogically.

Sylvia was caught in the web of Model I behaviors established by the team. The team endeavored to minimize negative feelings, especially if a teammate, like Sylvia, was being "hard on herself" they strove to suppress those feelings of inadequacy.

Individual learning of team Bravo

All teachers in team Bravo experienced single-loop learning. None of them, however, described any experiences of double-loop learning. Below is a brief table detailing team Bravo's learning.

	Belief around refined praxis	Single-loop learning and its outcome

Bella	"Safe" environment for feedback protected the ego of teammates during refined praxis sessions.	She saw that her teachers were struggling with classroom management and she tried to help them through coaching and doing positive reinforcement with some of the most difficult children. Although she felt ineffective, her teachers told her that she was being effective.
Deliah	"Relationships" were necessary to receive feedback. Where there were no developed relationships it was difficult to give feedback.	She described an action strategy of learning math journaling as helping her instruction. She also described how her team failed to give her any meaningful feedback to a videoed lesson.
Carla	Refined praxis was not the preferable time to give feedback as it was public. Giving feedback on one-on-ones was preferable.	She also described an action strategy of handling better transitions as helping her instruction.
Sylvia	Non-judgmental was interpreted as not giving critical feedback to a teacher who was already "harshly" critical of herself, but rather the team behaved in an emotionally supportive manner.	She described learning action strategies for preventing flare-ups and how to remove students from the classroom, but shared that she was still struggling with classroom management.

Team Bravo seemed to share a common emphasis of "safety," which originated from the team leader, Bella, who preferred to address difficult issues in private and not

during a more public encounter in refined praxis. Carla agreed that it was "fortunate" that they never got into interpersonal issues during refined praxis. Deliah added that unless the relationships were developed enough, it was not possible to give such critical feedback during refined praxis. Sylvia added a nuance to the concept of being non-judgmental in the sense that no critique would be offered by the team. She also accepted her team leader's comment that she too was a harsh critic of herself. Therefore, the team functioned by saying soothing things to each other such as you were "really great," or "effective;" even though that was not the case.

A belief around refined praxis that the team must protect teachers' feelings seemed to limit possible questioning that could be perceived as hurtful and limited the potential for engaging in double-loop learning.

Why was this team unable to move beyond single-loop learning? The distinction between Model I and Model II types of behaviors and culture can be useful here. Model I behaviors were in evidence: teachers were protecting themselves and each other from getting their feelings hurt. The quest for safety led to self-sealing behaviors (for instance, Deliah had a terrible lesson and no one gave her constructive feedback, in addition, she self-sealed herself from asking the team why they could not help her, beyond the platitudes of how wonderful she was). In order for Model II behaviors to have been experienced, they would have tested ideas even if they had hurt a team member's feelings.

Team Charlie

Individual teacher description

Nancy

Nancy's background

        Nancy was a seven-year veteran teacher and served as team Charlie's leader. The headmaster appointed Nancy as Charlie team leader without any training and development as a leader. Nancy felt overwhelmed by all the tasks that kept piling up as a team leader and struggled in her role.

Nancy's belief around refined praxis

        Nancy viewed refined praxis as a way of "being able to openly talk about your struggle in your practice and the problem that you're having" by having others listening and not giving answers, but rather asking "guiding questions" to "push your thinking." Nancy added that refined praxis holds a teacher "accountable for what you said you were going to do," because the team checks on your progress weekly. Thus, Nancy saw two beliefs in regards to refined praxis: first, the team asked "guiding questions" and did not give answers; and second, the team held the teacher accountable.

Nancy's learning experience

        Nancy described a learning experience that she had over several refined praxis sessions with her team. The Department of Education mandated that students spend two hours and six minutes of "free center time" every day, wherein students could work at whatever center they'd like to do. Teachers were also mandated to do small group instruction at a center. Nancy found, though, that some students never selected her reading center and so she wasn't able to help those students with their reading. She felt

stuck and wondered how she could get the kid who liked to play with "blocks" to come to her instead of staying with the blocks. She tried different techniques to make her center more attractive, but some students still did not come to her. During one refined praxis section, her team "pushed" her thinking. They questioned her assumption that the kids needed to come to her, "Why can't you teach the skill in the block center?" She could be the block center. She would need to do the small group instruction in that center and modify her guided reading group so that it incorporated blocks for that particular student.

Nancy's single and double-loop learning

Nancy's two beliefs around refined praxis of "openly discussing" her problem of practice and having the team become accountable were on display in her shift of assumptions. At first her governing variable around her problem of practice was that students must decide to come to her reading center. The different action strategies she used in connection with this first assumption (single-loop learning) didn't manage to attract some students, who were still selecting the "block center." Her team questioned her over several refined praxis sessions, and she eventually came to the realization she could become the block center. This shift in her governing variable demonstrated double-loop learning as she shifted her underlying assumption from "the students must come to me," to "I could go to the students."

Nancy experienced little defensiveness, took ownership over her learning and changed her practice – typical Model II behaviors.

Connie

Connie's background

Connie was a veteran teacher with approximately 6 years under her belt. She described her practice as "fiercely independent," and maintained that no matter who came into her classroom, she was confident in her pedagogy.

Connie's belief around refined praxis

Connie contrasted learning alone where a teacher had a problem and had possible solutions "spinning around" in his/her "head," to a refined praxis experience wherein others were probing and questioning the teacher's problem of practice and helping clarify the teacher's thinking. She made an "admission" that even though a teacher was "supposed to know everything" it's "not true." Overcoming her "fear" of putting herself "out there" was a "liberating" and "empowering" experience. In essence, Connie's belief around refined praxis was a synthesis of two competing commitments; that she could be both "fierce" in her independence and pride that she was a professional and that she could share her struggles with others through refined praxis to learn and grow as a professional. The result in practice was that Connie took problem solving that she usually did in her head to a group level, where she received help with her problems of practice.

Connie's learning experience

She described her typical learning experience as "trial and error." She, for instance, had a student who stuttered in her class. She reflected with her team, reviewed videos, and kept thinking of how to help the child. She worked with her until the student

"gained more confidence in public speaking." She was ready to "fall on my face," until she helped the student.

Finally, she announced the wonderful outcome that she helped her student overcome the stuttering deficiency.

Connie's single-loop learning

Connie learned through "single-loop" to help the child who stuttered. She described an action strategy of "trial and error," which was the classic single-loop approach. Her belief around refined praxis as problem solving in a group level allowed her to share her problem and get help with different strategies until she was able to help the child's stuttering.

What was fascinating about Connie was the competition between her commitment to being a highly independent, professional teacher and her commitment to the value of refined praxis to undo the façade of professional knowledge. Her conflict led her to take problem solving from an individual level to a group level. Problem solving at a group level allowed her to learn from her team by discussing her issue, but did not allow her yet to enter more uncomfortable zones as she remained in single-loop territory.

Connie's example of single-loop learning reveals that this too is an important type of learning – she helped a child overcome his stuttering as a result of getting her team to help solve her problem of practice. However, Connie exhibited Model I behaviors as she felt herself a professional beyond reproach (a level of defensiveness regarding her practice).

Grace

Grace's background

Grace was a six-year veteran teacher. She described herself as gregarious and talkative but at the same time, "slow" to understand what was going on. She also had to take notes during meetings to remind herself of what had been discussed. Her teammates shared that this aspect of Grace was helpful for the team as her notes helped everyone recall what actually happened.

Grace's belief around refined praxis

Grace's belief around refined praxis was similar to Connie's. She saw refined praxis as problem solving at a group level: "Maybe if this didn't work, why don't we do this? Why don't you try this?"

Grace's learning experience

Grace shared her learning experience with a student who had "a lot of behavior issues." The child's "home" was also not supportive. Halfway through the year, she finally told her team that she felt she had tried "different methods" and now she knew nothing worked. Her team helped her with an individual behavior chart just for this child with stickers for positive reinforcement. She described that technique as "helpful." Although the chart did not completely alter the child, it did lessen the behavior issues.

Grace's single-loop learning

Grace, like Connie, demonstrated "single-loop" learning in modifying the behavior of a child through an action strategy ("individual behavior chart"). Her governing variable of problem solving at a group level of refined praxis was evident in her learning experience. First, she tried to solve the problem on her own. When that didn't work, she brought her problem to the team and her team began to help her with different possible techniques that she could use to improve her practice.

Grace exhibited Model I behaviors as she kept her cards close to her chest. Her teammates let me know that she was undergoing deeply troubling issues at home, but Grace minimized her feelings and did not share her difficulties. This is not to say that Grace had any obligations to share; however, her teammates were more willing to share than her.

Mary

Mary's background

Mary was a novice teacher who was excited to join TNAA because the team approach allowed so many "minds" to question and analyze something together.

Mary's belief around refined praxis

Mary's belief around refined praxis was to not be "judgmental." Her own definition of what it meant to be judgmental was different than team Bravo's definition. Team Bravo defined being judgmental as being critical, especially in situations when a teacher was already his/her own harshest critic. For Mary, judgmental meant only looking

at the negatives and not the positives. In addition, as long as she considered the positives, she believed it was also important to see the negatives:

> You can't be judging I think. That's a big one. That's something I had to be understanding about. I mean judging of yourself as well. Not of other people. I always look at, not for other people but me, I'm very hard on myself. So I'm watching the video or we're discussing my reflection and I'm like, "Well, I could've done this differently. I should've done this. I should've done this. It would just be better." You can't go straight to all the negatives and you can't be so negative on yourself. You need to look at, "I always feel like ..." Yes. You're talking about this horrible day or you're reflecting on something that went really wrong. Look at some of the positives that was okay and you wouldn't change or something that was good because you can't focus all on the negative or the things that went wrong.

Mary said, in effect, one had to judge oneself in a balanced way both positively and negatively. In her mind, she created a non-judgmental space by being both positive and negative about herself. She did not need teammates to balance her with positivity (as in Team Bravo).

Mary's learning experience

Mary discussed a video of her practice with her team. She noticed that after asking students a question, she put her fingers over her mouth. Nancy noticed too and asked her, "Why do you that?" Mary responded that she was giving herself wait time. She realized it was "weird," because in the act of holding herself from speaking, she was

inadvertently giving a signal to students not to speak – so the wait time increased! Mary initially felt she couldn't change her behavior, and her teammates did not tell her "just keep your hands out of your mouth." Mary said she needed to do something with her hands. She credited Nancy's questioning that finally helped her come up with a solution. Because she was very "sensory" she started to touch her thumb to each finger and this way kept her hand off her mouth.

Mary's single and double-loop learning

Mary's beliefs around refined praxis of identifying both the negative and positive aspects of her practice was evident in her description of her videotaped lesson. First, she said that her hand motion was for a positive purpose of "wait time." However, she acknowledged that it was "weird," (a fairly negative perspective) because she realized the negative effect it was having on her students' understanding that she wanted them to answer.

She was able to then experience a shift in her thinking. Her assumption was that she needed to give students wait time by preventing herself from speaking. Thus, she put her hand over her mouth to prevent herself from speaking.

She was experiencing the world from her own perspective and only through the video and teachers on her team pointing out her hand gesture did she become aware that her action was having an unintended consequence. Her shift in perspective was how her hand motion was perceived by her students. This shift could be double-loop learning, as her own governing variable around her problem of practice seemed to shift from her perspective of what she needed to do to provide wait time for students to what the

students needed to see in order to have wait time. One could argue that this example may also be single-loop learning as she learned a different strategy of doing wait-time. For instance, she shared her challenge that she was very sensory and needed to do something with her hands. Nancy helped her think through possible alternate strategies. Mary came up with touching her thumb to each finger as a "sensory crutch," that allowed her to count seconds and kept her hand off her mouth.

I tilt towards double-loop learning in this case as Mary exhibited Model II behaviors. She took ownership over her learning, had minimal defensiveness, and relied on valid information about herself.

Individual learning of team Charlie

Team Charlie has a mixture of single and double-loop learning. Nancy and Mary both experienced double-loop learning while Connie and Grace remained in single-loop. The below table shows a brief summary of team Charlie's individual teacher learning:

	Belief around refined praxis	Single-loop learning and its outcome	Governing variable shift	Double-loop learning and its outcome
Nancy	She believed in an inquiry approach to help push the thinking	Action strategies that had students come to her small group instruction that were largely unsuccessful.	Assumption of being teacher-centered to being student-centered	Through her team questioning her practice over several refined praxis sessions she shifted her

	of the teacher and also held the teacher accountable for the results.			governing variable. Instead of creating a separate center that tried to pull the students away from the centers they liked, she became part of the centers and met the students where they were. She had to adjust her lesson planning to include the activity from the center.
Connie	Problem solving at a group level	Action strategies of trial and error to help a student who stuttered. She was happy that she succeeded.	N/A	N/A
Grace	Problem-solving at a group level	She learned an action strategy (individual behavior chart) to help with a student who was having behavior issues. The strategy helped	N/A	N/A

		lessen the negative behaviors.		
Mary	She believed that one had to judge oneself both positively and negatively in order to receive both kinds of feedback.	In order to give students wait time she placed her hand over her own mouth. She was trying to quiet herself in order to allow students time to think.	Her governing variable was teacher-centered and she shifted to student centered.	Her team helped her see herself from the children's perspective. She realized that a strategy that was helping her with wait time, was not helping her students. She saw her action through the students' eyes. Thus, instead of putting her hand over her mouth for wait time, she touched each finger to her thumb as a sensory "crutch."

Individual teachers in team Charlie experienced different levels of learning. This may be a little over-simplified (but has enough substance): Nancy and Mary both experienced shifts in terms of their governing variable from being teacher to student-centered. Whereas they both were self-focused (Nancy thought the students needed to come to her and Mary thought she needed to place her hand over her mouth to produce wait time), their team helped them see the same thing from the students' perspective

(Nancy went to where her students liked to be and Mary altered her hand motions to send a totally different signal to her students). Their belief around refined praxis was described differently. Nancy was focused on the external dimension of how the team pushes thinking, whereas Mary was focused on her internal mechanism to be balanced in terms of judging herself in order to receive feedback.

Connie and Grace believed that refined praxis was an opportunity to problem solve at a group level. They both learned in single-loop through trial and error and problem solving with their teams (Connie with the stuttering student and Grace with the child who misbehaved).

Both single and double-loop learning could take place in a team setting. In the case of team Charlie, their own belief around refined praxis set in motion how deep the learning would be. For Connie and Grace, they believed that the purpose of refined praxis was to problem solve at a group level and their learning reflected their belief.

The team culture and behavior again helps illustrate how both single and double-loop learning are possible on this team. Team Charlie exhibits both Model I and Model II behaviors. On the one hand, Model I behaviors included a belief that the group serves as a tool for problem solving by two team members (and in both cases showed a modicum of defensiveness – one on a professional level, another on a personal level). On the other hand, Model II behaviors were exhibited by the team leader who believed that refined praxis was an opportunity for inquiry (similar to Olivia) with a high degree of accountability, as well a colleague who tried to internally be open to feedback: for example, both Nancy and Mary displayed little defensiveness.

Compare and contrast the three teams

The three teams represented a range of learning: all teachers in team Alpha described experiences of double-loop learning; team Bravo had none; and in team Charlie it was mixed.

Team Alpha and Bravo had coherence in terms of their belief around refined praxis. Team Alpha members shared a belief that they should assume each team member had best intentions. Thus, team Alpha could go into highly uncomfortable discussions and uncover deep assumptions as to their particular practice. Some teachers had an assumption that adults have "fixed" ability, while some others had a similar assumption as related to students. Team Alpha's members in their exploration of their own learning came to individual conclusions around the "malleability" of both adults and children alike. Team Bravo had a governing variable that refined praxis was non-judgmental. By non-judgmental the teachers meant that refined praxis was a place for teachers to be their "own harshest critics" and did become vulnerable to their teammates; however, the team then reassured the teacher as to how effective or great they really were. That balanced safety – protection really – limited their ability to enter double-loop learning and all the teachers remained in single-loop territory.

Team Charlie had a mixture of learning both in single and double-loop learning, depending on their individual beliefs around refined praxis. Two teachers who defined refined praxis as problem solving in a group setting only experienced single-loop. The other two teachers had different beliefs that helped them enter double-loop learning. Mary, a novice teacher, presented a different perspective.

Mary said, in effect, one has to be balanced in approaching one's practice both in a negative and positive way in order to be able to learn from others. Team Bravo had to compensate by having all the teammates say positive things to the teacher to counterbalance the negative criticism the teacher gave herself. Mary's view of being non-judgmental also unsettled me. When I think of non-judgmental, I think that a person should be neither positive nor negative. When analyzing team Bravo, it seemed at first glance that their belief of compensating for negativity with positivity yielded a net zero, so to speak, and as a result team Bravo seemed stuck in single-loop. Mary, however, allowed me to understand that it is inherently difficult to not lay any judgment on oneself. I began to see her point that the important thing is to be balanced and aware of both positives and negatives in order to allow for deep learning to take place.

There seems to be two views of refined praxis: a place where feedback is given and/or where questioning takes place.

Feedback can be either positive or negative. Team Bravo chose to take a stance of "non-judgmental" in terms of feedback. If a teacher gave herself negative feedback, then the team had to balance her negativity with positivity in order to have the balance become "non-judgmental."

Teachers in team Alpha and team Charlie's Nancy saw refined praxis as a place for inquiry. It's about helping a teacher clarify his or her thinking. The questioning created the shifts in perspective.

In the next chapter, I explore how team beliefs around refined praxis affect the learning experience of teachers.

Chapter 6: Analysis of team learning

In this chapter, I continue the journey of analysis from the previous chapter by now focusing on the team aspect of learning. There are four sections of analysis per team: a description of the team dynamics; the belief the team may have in regards to refined praxis; the learning experience; and the scope of learning (either single or double-loop). At the end of this chapter I will compare the three teams' learning.

Analysis of three teams

Team Alpha

Team Alpha's interpersonal dynamics

Team Alpha describes their team dynamics as a "love fest." They are friends inside school and also hang out with each other on weekends. Olivia gives them all a ride home after work.

Team Alpha's belief in regards to refined praxis

As described in Chapter 5, team Alpha's belief around refined praxis is assuming best intentions. For a team that is experiencing a "love fest" it seems natural to have those best intentions.

Team Alpha's learning experience

Team Alpha's love fest was disturbed by a new student who was "defiant, disrespectful and aggressive." When the team approached the mother, they felt she "butted heads with all of us." They let her know that they were trying to benefit her

child. They were trying to figure out how to get the mom to understand that they were not "out to get him." Yet she fought them every step of the way. The mother said that the teachers didn't want him in the school. Olivia, who was Black, took it personally when the mother compared the teachers to the police who are killing black boys in the street.

The teachers felt that the situation with the boy worsened because the mother undermined them. They asked that Lucy (a refined praxis coach) help them during refined praxis to reflect on this situation. They described how upset and frustrated they were. Lucy asked them if they had ever considered looking at the situation from the mother's point of view. Kelley shared how she too had a son and he sometimes got in trouble and how she felt the school was not supportive of her and her son. All of a sudden she began to feel more empathy for the mother. Mia remarked that a "shift" occurred by having Lucy's point of view, because "we were all like, 'this mom, this mom, this mom.' She [Lucy] was like, 'think about how mom feels. She's like, this school, these teachers, they're all …'" Once the empathy began to set in, Olivia remarked that they internalized that conversation and began to approach the mom differently. They allowed her son to go to field day at the end of the year. This privilege was not given to all students. Olivia got a voicemail with a very "disturbing message" from the mom that her son had not been allowed to attend field day. Olivia texted her pictures of her son participating in field day. When the mom did not respond, Olivia said that it was like "adding insult to injury." However, over two months later during the new school year, the mom came to the school and apologized for her behavior as well as her son's and thanked the team for not giving up on them. The whole team agreed that without Lucy they would have remained stuck.

Team Alpha's single or double-loop learning

The team had a governing variable that the mom was the problem ("the mom, the mom, the mom"). She not only wasn't helpful, she also butted heads with them. In their estimation, they were stuck with a difficult parent who felt that the team wanted to get rid of her son.

While team Alpha had a belief of assumed the best intentions from each other, they experienced the opposite from mom; she was adversarial, hurtful and they could not see her best intentions.

Thus, the mom was perceived as a problem and they did not assume she had best intentions when dealing with them. They were stuck in a single-loop cycle of learning that only helped reinforce their assumptions.
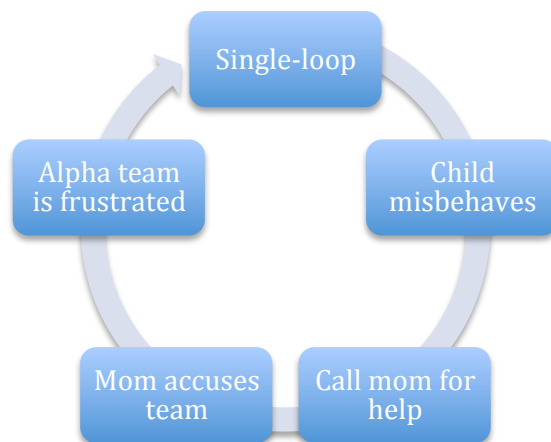

Only through the help of a third party (Lucy as the refined praxis coach) could they begin to see things from a totally different perspective – a mom's perspective.

Importantly, the team perceived Lucy as non-judgmental and as having their best interests at heart. As Leah related, referring to her experience with Lucy, "no one was seen as judgmental during the whole thing [refined praxis time]. At no point did I feel attacked." Mia added, "I prefer meeting with Lucy [than meeting with only the team] … she really makes you feel comfortable. She really structures the conversation in a nice way to kind of feel like someone is being heard … It's nice to have that outside person there to guide you. It's hard to do sometimes when it's just the four of you, just your team."

Lucy was not perceived as being either adversarial or butting heads with them. On the contrary, she was a respected outside member who questioned the team about their perspective toward another outsider – the mom. A trusted third party was able to help the team see things from mom's perspective, so they could consider the possibility that the mom did indeed have best intentions for her son. She was trying to fight for her son's education, and it was important that the team understood her perspective.

The team consensus was that Lucy made them more empathetic to the student's mom. This empathy translated into a non-adversarial attitude from the team, and this helped the relationship with the mother. The shift in their governing variable about the mother constituted double-loop learning.
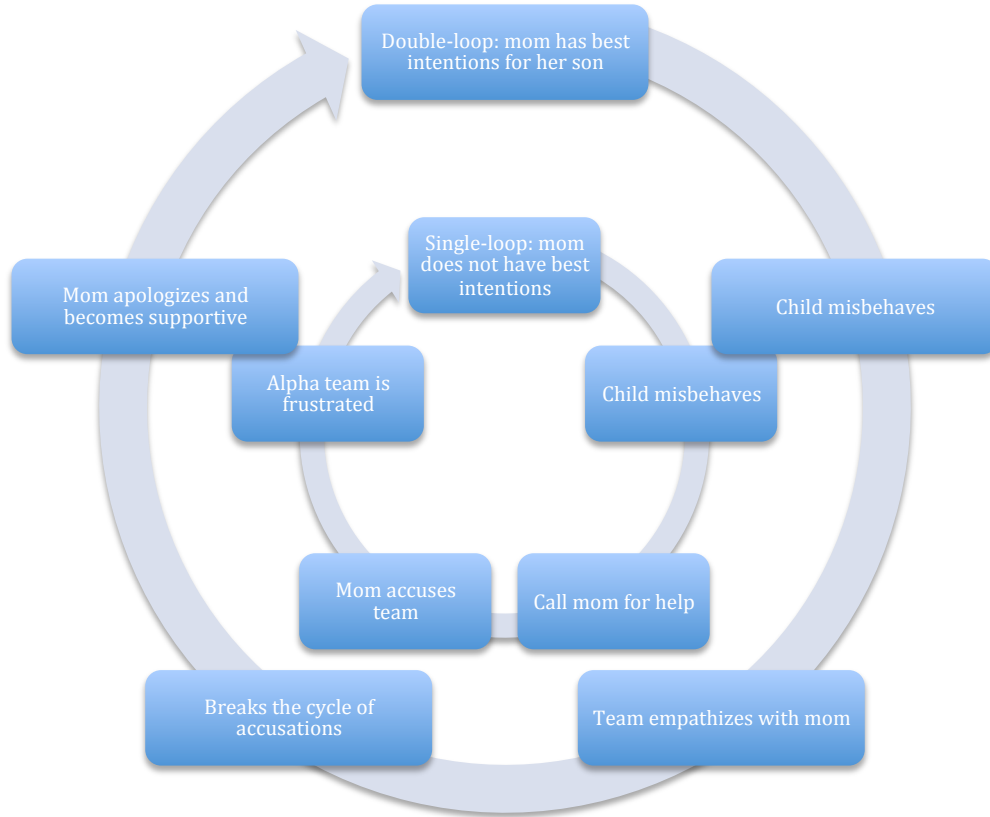
There is congruence on the team between the types of learning that are possible and the specific behaviors and team culture demonstrated. Team Alpha at first demonstrated Model I behavior. They were defensive with mom and felt they were in a win-lose situation with her son. After being coached by the refined praxis coach, they began to show Model II behavior as they assumed best intentions from Lucy. Through Lucy's questioning, they had a shift in perspective and realized that mom had the best intentions for her son. As a result they empathized with her and overcame their defensiveness.

Although Lucy helped, team Alpha's culture of Model II behaviors seems to have laid the foundation for their learning. The team was able to notice their own shortcomings in their inability at first to see the mom's perspective. They realized that they did not assume best intentions regarding mom, and this was counter to their values as a team. Once they related to mom as an equal, so to speak, who also possessed best intentions for her son, they were able to escape the cycle of frustration.

Team Bravo

Team Bravo's interpersonal dynamics

When asked to describe their team dynamics in the group interview, Deliah said that they were collegial. Carla posited that they were developing and "absolutely professional" wherein "everyone gets along … we are a good team." Bella affirmed that that's "how the team works together" in getting along.

However, when each teammate was interviewed separately, their responses were different. Deliah, for instance, had a real challenge with Sylvia as she did not perceive her as a team player. "She's only thinking of herself," Deliah explained. However, when Sylvia opened up in a team meeting and shared that she was indeed not a good team player, Bella told her she was being hard on herself. Bella began to point out to her how helpful she really was and explained "that's when we had to go around and we had to assure her that she is a valuable team member." Deliah remained silent.

Team Bravo's belief in regards to refined praxis

Team Bravo's collective belief about refined praxis was revealed in Chapter 5 to be that team members should be non-judgmental. What that meant was that if a teacher criticized herself, then the team had to balance the teacher by giving positive feedback in order for the teacher to feel supported. The same governing variable that applied to pedagogic issues also applied to team learning dynamics as described above. Sylvia revealed during a refined praxis meeting that she did not feel she was a good team player (negative perception). The team came to her rescue and assured Sylvia that she was indeed a good team player (positive perception), even though Deliah had mentioned in private that Sylvia was not perceived as a team player by both herself and the rest of the team.

Bella, as a team leader, admitted that refined praxis sessions were "superficial." She was concerned that perhaps there was something festering in her team, but her team was not complaining and everyone seemed to get along. Team Bravo's interpersonal dynamics were a kind of bubble wherein teammates had festering issues that were not brought to the surface and when they were, they were quickly suppressed.

Team Bravo's learning experience

Team Bravo shared a learning experience wherein they were changing their lesson planning practice. Their model for developing lesson plans was each teacher wrote lesson plans for a particular subject throughout the year, and the team vetted the lessons in a weekly process. They decided to change the process because they felt that they were not planning together but rather were simply vetting. Bella explained, "I think one of the driving forces in this was the TC [Teachers College] curriculum because one

of our team members has never done TC before. One of them hasn't taught reading

before. When you're going through the TC curriculum sometimes it's not really clear.

We get to talk it out and we get to plan it together." Because the curriculum wasn't clear

to all team members, a more collaborative approach to lesson planning made better sense

for the team.

Team Bravo's single-loop learning

Team Bravo was trying a new approach to their learning, wherein they were

collaborating in developing lessons. This was a problem solving approach to a

curriculum which some of the team members were unfamiliar with and needed help,

because the curriculum was not "really clear." This type of problem solving

demonstrates standard single-loop learning.

Team Bravo's belief of being non-judgmental and providing only positive

feedback to a teacher who was being critical of herself might be perhaps preventing any

double-loop learning. In fact, this non-judgmental approach formed the basis of their

assumption that theirs was a good team (as will be explained).

Sylvia had opened up and said that she didn't feel like she was being a good team

player. The team quickly disagreed with her, even though Deliah verbalized that

sentiment about Sylvia in private. There was a kind of self-censorship taking place

wherein Deliah hid her concerns about Sylvia from the team and from Sylvia herself.

Bella tried to convince Sylvia that she was doing a great job.

Carla said that the team got along and was a good team. Of course if her

definition of good was that the team cared for the feelings of the teammates, she was

correct. However, if the definition of good was helping each other to learn the most they could to be more effective in the classroom, then she was perhaps incorrect. This may be why Bella felt that her team had taken a "superficial" approach to refined praxis. As long as each teacher appeared to be his/her "own harshest critic," they would be protected from any form of criticism. They were also prevented from going deeper into the values, assumptions and beliefs (the governing variable). In the end, there was also an illusion of unanimity. When Carla repeated in front of the team how they all got along, Deliah dared not dispel that illusion in the group interview.

Bella had set the standard that one did not give direct feedback in a team setting (e.g. when Carla did not do proper lesson plans). Instead of taking the opportunity to address Deliah's ineffective lesson, the team chose to "sugarcoat." Instead of using Sylvia's admission of not being a good team player as a learning moment, Bella chose to tell her how "great" she was at her job.

Carla provided some insight into how the team viewed refined praxis, as she said that she was "fortunate" to be part of a team that never discussed interpersonal issues during refined praxis. She believed her teammates were "pretty good" at going directly to each other and addressing their concerns.
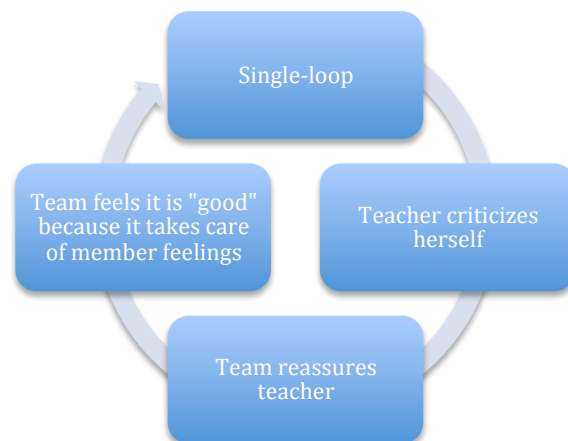
Team Bravo seemed to have a shared belief that a "good" team was one that got along. A "good" team wouldn't hurt each other's feelings (especially in a group setting) -- a classic Model I behavior trait. However, the inability to go into the uncomfortable zone where a teacher's governing variables were questioned prevented both the individual and the team from double-loop learning. Thus, Bravo team exhibited only single-loop learning both as individuals and as a team.

Team Charlie

Team Charlie's interpersonal dynamics

When asked to describe the team dynamics in a range from challenging to developing to collegial to love-fest, the team began by saying that any or all of those descriptors fit, depending on the day. Nancy agreed with the team that it depended on the day, but then mentioned that others ask her, "Why do you guys like each other so much?" Mary then added that it was like a "family" and "definitely a love-fest." Just like a family, team members annoyed each other at times but were also still supportive of each other. Connie elaborated that the love-fest was becoming more apparent, because teammates were much more understanding of each other's feelings. Grace shared, "Oh my G-d, like they really know me! In a year, how do they know me so well? Have I been that open? That's why I said when I had the one-on-one, they're not my colleagues, they're like family. I feel like they know me sometimes even more than my family."

The team defined "family" as a group where they feel known, annoyed, understood, and loved. Granted, not all families have this dynamic (e.g. some are abusive), but in the minds of Charlie team, theirs is like a family wherein they can have conflict (such as annoyance) and then still have bonds that overcome the conflict. So the "love fest" was used by two teams, but understood somewhat differently. Team Alpha understood "love fest" as a type of friendship, whereas team Charlie perceived it as akin to a family.

Team Charlie's belief in regards to refined praxis

Team Charlie had a belief around refined praxis that was mixed. The team leader believed that team inquiry would lead to individual learning. Another colleague shared that the individual had to be open. Two teammates believed though that refined praxis was a tool for problem solving. However, there is a sentiment in the team that they have best intentions for each other as an idealized family, so to speak. Assuming best intentions is a sentiment found in Model II behaviors.

Team Charlie's learning experience

Team Charlie described how, at one point, Nancy was behaving in a way that no one appreciated. Grace said that she was upset but held her feelings in, because she tended to be "passive" and "quiet." However, Grace's feelings were shared by the rest of the team and during a refined praxis session, Mary stated how upset she was that the team was hurting. She addressed Nancy and said that Nancy was stressed out, "snapping" and "shutting down," and she was the reason why the team was feeling hurt. Grace was

offended that Nancy had not said good morning to her and shared that she felt that was very negative of Nancy. Nancy denied that and said that she did say good morning. Connie then told her that Nancy wasn't saying good morning to her either, and Nancy said that she was. Nancy said that she really thought she had said it, but then realized maybe she said it in her "head." She didn't want to show her stress to the team and was preoccupied. She realized that she was not being present in the moment.

Mary asked her, "What's going on?" Nancy "opened up" that she had taken on many responsibilities, maintaining a teaching load, having a team, trying to learn how to be a leader without the training, as well as being in charge of hiring for the school. She was overwhelmed.

The team empathized, and immediately each team member asked her which responsibility they could take in order to lessen the burden on Nancy. Each team member took on additional responsibilities.

During a half-day session of refined praxis, they asked Lucy how they should approach the headmaster, Peter, in order to help Nancy. They wanted to protect her from all of Peter's demands and were very emotional. Lucy helped them deal with their emotions and let them know that this didn't need to be a confrontation. Rather, they could approach Peter to share information and seek his help.

They scheduled a conversation with Peter and to their happiness met with a headmaster who listened and was very supportive to their needs.

Team Charlie's single and double-loop learning

According to team Charlie, their team was like a family. Families, in their view, may have their fights, but ultimately the individual members have each other's best interests at heart. Nancy was acting atypically and it bothered them.

At first they seemed to be not learning, as they shut down and said nothing. However, they were stuck in single-loop. They were learning to deal with an upsetting team leader. Nancy was not saying greetings, was snappy and was hurting them (inadvertently). They were keeping it in and learning to deal with the situation, but their resentment and anger grew.
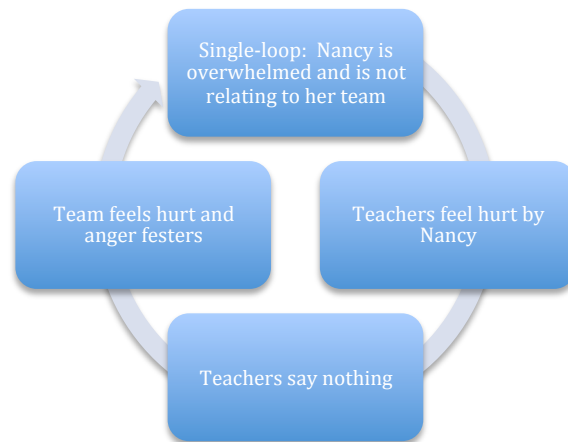
It exploded with everyone shared their data with Nancy; she didn't say good morning, she was snappy, she was shutting down. Nancy realized she was overwhelmed. She was taking on all the responsibilities without question and didn't want to bother her team. She realized that she wasn't able to accomplish the role assigned to her.

The belief that they were a family that could handle frustration and still support each other -- allowed the team to do two things: first, they shared the data with Nancy;

and second, they became empathetic and took off some of the load from Nancy onto their shoulders.

The "family" belief of assuming best intentions allowed the team to engage in double-loop learning. In single-loop they were stuck with feeling hurt with each other and in a negative cycle of not saying good morning, or shutting down. They began to question if they were behaving like a family. The self-sealing Model I behaviors they
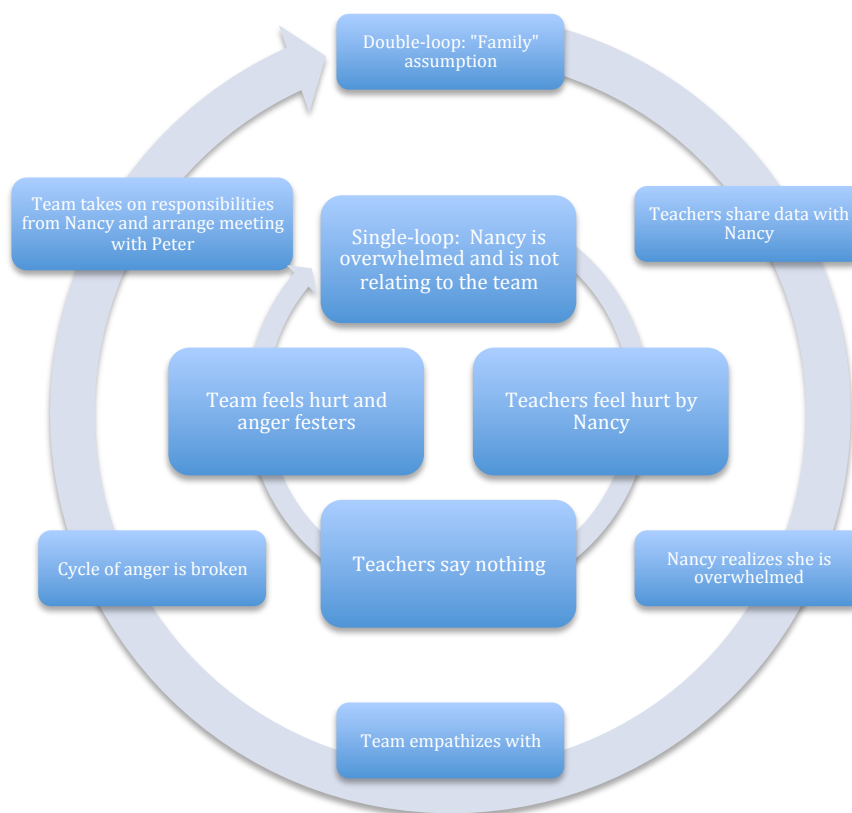
showed while in single loop, were removed as they all tested their data in the public setting of the team as they moved towards Model II behavior. They hashed out that instead of Nancy operating under the assumption that a team leader had to take on all the responsibilities, the team leader had to distribute leadership. This is similar to Olivia's personal learning in Alpha team.

The "family" belief also created the empathy to take on some of Nancy's load. They even decided to face the headmaster to help protect Nancy from the overwhelming load he was giving her.

What is fascinating is that in this case, the team leader was not demonstrating leadership in the sense of helping the team reflect, but was withdrawn and had a lower capacity to connect with her teammates. The refined praxis coach was not involved in the initial conversation that led to their shift, but only afterwards in terms of how to approach Peter. Grace, Connie and Mary rose up and confronted Nancy trying to understand what was happening to her. They were upset and angry, yet still maintained a love-connection with her and wanted to help. Thus, the cultural Model II behaviors of empathy, testing theories in public, and assuming best intentions ultimately overcame a team leader's incongruence with their espoused theory of familial feelings as the norm for the team.

Comparing the three teams

It appears that Argyris and Schon's (1974) understanding of how Model I and II behaviors help determine the kind of learning that is possible is accurate.

Model I behavior has three effects on learning; self-sealing (meaning not revealing what is in the person's head), single-loop and little public testing of theories. Team Bravo has the classic Model I characteristics. Deliah, for instance, did not share her beliefs about Sylvia's lack of being a good team player. When Sylvia publicly stated

she felt like she was not a good team player, the rest of the team gave her no constructive feedback. Thus, team learning was limited to single-loop mode of learning.

Model II behavior has three effects on learning; openness, double-loop learning and frequent public testing of theories. Argyris and Schon (1974, p.91) describe Model II behavior:

> Defensiveness in interpersonal and group relationships will tend to decrease, and people will tend to help others, have more open discussions, exhibit reciprocity, and feel free to explore different views and express risky ideas. Moreover, group norms will tend away from defensiveness and toward growth and double-loop learning; for example, trust, individuality, power-sharing, and cooperation will tend to become norms, with competition being confronted when it becomes dysfunctional.

Both team Alpha and Charlie experienced the above kind of learning.

Team Alpha was open in regards to their struggle with the mom. They began to see things from her perspective and publicly tested their ideas in refined praxis with their coach. Team Charlie opened their feelings, were able to learn the reason for Nancy's troubles and tested their theories both internally as a team, and externally with their coach and headmaster.

Although team Charlie had two teachers who defined refined praxis as "problem solving in a group setting" that limited their ability to learn (as individuals); nonetheless the Model II behavior of the team allowed deeper and more powerful learning as a team.

It appears that a collective mind, in this case team Charlie, can transcend the individual minds on a team as long as there exists a culture of Model II behaviors as a team.

Chapter 7: Conclusions and implications

The three teams selected encompassed a range of possible learning; one team experienced double-loop learning both on an individual as well as a team level, another team only experienced single-loop learning both on an individual and team level, and the last team demonstrated mixed learning at an individual level. By choosing this specific range, it seems that the underlying reasons why teams had such different learning outcomes varied from both their beliefs about refined praxis and the type of culture established in their teams.

In the conclusion, I connect how Model I and II behaviors as reflected by the teachers' beliefs around refined praxis directly impact both individual and team learning (RQ 1 & 2). Then I illustrate how teachers perceive refined praxis to be useful for their instructional practice with the caveat that only upon deeper study can one learn the extent of the real learning that took place (RQ 3). In the end, I share my surprises and implications for practitioners and researchers.

Conclusion

TNAA schools have made a substantial commitment to use a reflective practice tool called refined praxis. They have devoted summer training, dedicated weekly sessions throughout the year, and provided a refined praxis coach to help guide their learning for the year.

Even with considerable training and support, some teams cannot progress beyond Model I behaviors. Some Model I behaviors are characterized by teachers not sharing 'data' with each other, lack of a common language around key concepts such as non-judgmental engagement, and differing understandings of practice refined praxis.

While disappointing, it is not altogether surprising as Argyris and Schön (1974) mention how difficult it is to design organizations that enable double-loop learning, where Model II behavior is prevalent: "Designing Model II learning environments is a very complex task, about which we know pitifully little. Moreover, it is so easy to fall into the trap of designing learning environments that are opposite to or oscillating within a Model I world." (p. 181).

The design of refined praxis (in this study) did yield one team that had consistent double-loop learning both at an individual and team level. This team's leader believed refined praxis to be a stance of inquiry taken in order to help individual teachers solve dilemmas for themselves but not by themselves. In addition, the team had a belief of assuming best intentions from each member. As a result, refined praxis supported team members in making substantial shifts in their beliefs. Teachers, who previously had be limited by fixed mindsets, were able to acknowledge that the mind is "malleable" (Dweck, 2006) in both student and teacher examples.

Another team had a mixed understanding of refined praxis. This team leader, like in the previous team, understood refined praxis as a tool for inquiry to help push a teacher's thinking. Another teacher in the team understood it to require "openness" on the part of the teacher to hear and understand multiple perspectives, in addition to one's own. Two other teachers, though, perceived refined praxis as a tool for problem solving. Their beliefs around refined praxis seemed to impact their individual learning. The former two teachers experienced double-loop learning in their individual practice and the latter two teachers, who stayed in the problem-solving mode, only experienced single-loop learning. However, as a team, they achieved double-loop learning. It is possible

their shared underlying belief of all holding best intentions, created an environment in which they could learn to overcome difficult interpersonal dynamics.

There are two similarities in teams that achieved double-loop learning as teams: first, they had team leaders who perceive refined praxis as a reflective tool for inquiry; and second, they displayed Model II behavior of assuming best intentions.

Refined praxis' perceived effectiveness by teachers

In my first round of analysis, I wanted to dipstick just how necessary teachers felt that refined praxis was to their learning.

I asked all 26 teachers in this study if they believe that refined praxis is necessary, helpful, not helpful or unnecessary to help improve one's instructional practice. Out of twenty-six teachers, 100% of them said that it was either necessary or helpful. Twenty-five teachers said it was necessary in some form and one said it was helpful. The table below shows how they responded.

Response	Number of Teachers
Necessary	14
Necessary and Helpful	5
Necessary or Helpful	2
Necessary for Himself or Herself	2
Necessary in this School	1
Necessary at times	1
Helpful	1
Total	26

Three themes emerged as to why teachers felt refined praxis was needed or helpful: 1) a single person's reflection can be limited whereas in a group setting they get multiple perspectives; 2) their specific issues are addressed regularly; and 3) they are accountable for their learning.

A twenty-five year veteran teacher who spent most of her career in typical district schools in New York City explained:

> …The beauty of refined praxis is it's not one-on-one. It's a team. It's one thing to get feedback from one person, but when you're doing refined praxis and you're getting feedback or questions to push your thinking as a team, it's multiple perspectives at the same time. You're getting more help ... And it's more efficient, because you provide a structure where you can get this help weekly and you have three other people in the room with you and you're getting different perspectives on a regular basis.

Unlike an observation done by a principal or assistant principal ("one-on-one"), one gets "multiple perspectives" simultaneously. Also unlike administrative observations that may happen once a year, the help is weekly on a "regular" basis.

In addition, there is a sense of ownership over one's learning. A ten-year veteran teacher explained:

> I think my biggest fear is to become stagnant and this is why I think it's necessary. Nobody's telling you, you're realizing it, you're… people are saying things and you're like "oh, I can learn this from this and this is where I wanna go." You drive it. Which is def…. it's… it's just like when we're with a kid, if you are always telling the kid, when does it become intrinsic? Rather than, "here I'm

taking control of my learning as a teacher and my progress as a teacher." So that's

why I think it's necessary having that space to grow.

This teacher shared her particular problem of practice, and thereby took "control" of her

learning. Her professional development was driven by her own "intrinsic" desire.

Refined praxis was not perceived as a cookie cutter professional development for

teachers, but rather each teacher was getting what he or she needed in real time.

All twenty-six respondents identified a particular instructional practice which was

improved through refined praxis, whether it was classroom management, data analysis,

how to compute standard deviations, language development, small group instruction,

differentiation, backwards-end design, curriculum development, transitions, etc.

The above data may be seen as impressive especially in the context that most

professional development is perceived as useless or not helpful (Darling-Hammond, et

al., 2009). However, upon further inspection, individual learning was mostly single-loop

learning.

Although single-loop learning is useful and meaningful (for instance, getting

technical support from her team to help a child overcome stuttering issues), it is not as

profound in terms of implications as double-loop learning. Double-loop learning has at

its core a shift in a belief, value or assumption. As a result of the learning, either an

individual (or a team) may totally alter their modus operandi. For example, a team found

that its assumption about a parent (as antagonistic) was counter to their belief system of

best intentions. When they empathized with the parent, they were able to resolve their

issues. This change of thought affected how they dealt with other parents and how they

viewed themselves.

Double-loop learning required a clear understanding of the purpose of refined praxis (at the very least by the team leader) and Model II behaviors such as assuming best intentions. Teams still functioned and learned, but missed many opportunities for meaningful learning.

The implications for future practitioners of refined praxis who wish to shift from Model I to Model II behaviors and those who want to study the outcomes is essential for meaningful and impactful learning and its resulting instructional outcome.

Implications for practitioners and researchers

"Refined praxis" is a framework wherein a person's dilemma of practice is examined, clarified or questioned through collegial dialogue aimed at uncovering limiting beliefs or assumptions and thus presenting the opportunity for double-loop learning (Waronker, 2013).

The above definition was developed in a purely theoretical sphere. The purpose of this dissertation was to explore its usage in practice. To be used most effectively, practitioners need to have a clear understanding of what refined praxis is: It is primarily a tool for clarification and inquiry in a setting where collegiality denotes an assumption of best intentions.

Refined praxis was originally designed to help improve individual teacher practice. The fact that teams could learn through this tool as a collective intelligence was surprising.

This study's implications for practitioners of refined praxis and the field of education are worth noting. The training of refined praxis teams will require greater

clarity around what (a) "safety" and (b) "assuming best intentions" means, (c) leadership should be distributed, (d) what cultural norms set apart Model I from Model II behaviors, (e) the three components of refined praxis and (f) the importance of double-loop learning.

(a) Safety means, in the context of learning, is that an individual will experience a learning experience without fear. Pain could happen, but neither the giver nor receiver is afraid. As a giver, one feels "safe" sharing information knowing that the receiver will not use it to damage the relationship. As a receiver, one feels "safe" receiving because there is an assumption of best intentions. This is akin to the safety one feels in placing oneself in the safe hands of a surgeon. Although, the medical practitioner will be cutting and inflicting pain (if done without anesthesia), the patient willingly undergoes the process because he or she feels safe and assumes best intentions of the medical professional.

(b) Assuming best intentions, though, needs to be contrasted with trust (as a lot of teams seem to use these terms interchangeably). Assuming best intentions is not trust, nor vice versa. One may share very deep personal knowledge of oneself to a total stranger in a plane trip, because one assumes this person will never use that knowledge against oneself -- this is an assumption of best intentions. Trust is far deeper and goes into the realm of loyalty. Trust is akin to two buddies in a foxhole protecting each other's backs. Trust may be valuable, but an assumption of best intentions seems to be necessary for deeper learning. For instance, team Charlie's trust in their leadership seemed broken. They could not understand how the team leader could treat them so poorly. However, they assumed best intentions and managed to repair and rebuild their team dynamics.

(c) Team leaders also seem to take a lot on themselves in order to relieve teachers of many onerous duties. However, the end result is that the leaders become overwhelmed and lose team efficacy. Team leaders need more training in distributed leadership.

(d) Refined praxis teams also need greater training in identifying and creating Model II behavior type cultures in their teams. The culture can help the learning process when there is little defensiveness, but rather an openness to test theories, to give and receive feedback and a willingness to accept responsibility. Practitioners of refined praxis teams should be able to diagnose the cultural behaviors in their teams. Teams that are honest enough to realize that their behaviors fit into Model I behaviors will need to take the steps necessary to transition to Model II behaviors.

(e) Practitioners need to examine the structure of refined praxis and understand it well. The dialogue begins, continues and ends with a keen social awareness of the feelings of each team member (not knowing or caring to know how another feels may be disastrous in a team setting). Thereafter, refined praxis has inquiry: for example, why did the teacher say or do a particular act? One needs to try to get into the individual's head in order to minimize one's own assumptions. Inquiry may be all a teacher needs, as the teacher could realize through that dialogue what they could have done better on their own. However, if a teacher does not realize yet (after inquiry) how they could improve, then the team can certainly provide constructive feedback.

(f) Finally, teachers in this study described their learning experiences in the following ways: "I'm a good teacher or a bad teacher;" "student can or can't, will or won't;" and "mom is an enemy or a friend." When individuals or teams face these dilemmas, they have a potential for double-loop learning. As teachers developed either

empathy or a shift in perspective they began to realize that there are no fixed traits either in themselves or in others. What they learned is that each situation is contextual or situational and there are opportunities for real change to take place. Double-loop learning could transform teaching practice of schools that practice refined praxis or not. The question for educators without refined praxis teams is how they will achieve double-loop learning in their schooling communities?

The implications for further research include horizontal, vertical, in-depth and longitudinal studies. By horizontal, I would propose studying more than six teams of educators (with only three in-depth). Thus, sampling size and different possibilities of experience can be studied with greater numbers of teachers. By vertical, I mean conducting research beyond the individual and team levels and extending into the school, network and district levels. How can the refined praxis framework help the learning of those in positions of leadership who often find themselves isolated, and in turn how those leaders are learning from the experience of individual teachers and teams of teachers? By in-depth, I mean studying particular teams with more precise instruments such as measures of collective efficacy, adult developmental indicators such a Kegan's Subject-Object Inventory, Myers-Briggs team compositions, etc. Rich understandings of how what elements are more helpful than others could lead to improved team composition and training. Finally, longitudinal studies could help map out how teams learn and grow within the refined praxis framework over the years. Mapping out how teams can accelerate their developmental learning could be very exciting but time consuming.

More importantly, though, how does the framework of refined praxis impact student achievement? Although it is important that we have tools for adults to learn, the

tools are for the purpose of ensuring that our future generations have the opportunity to

live in a better world than the one we have.

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Appendix A: Informed Consent Form for Teachers

Teacher Teams and Refined Praxis: An Investigation of Teacher Perceptions
Shimon Waronker

Please consider this information carefully before deciding whether to participate in this research.

Purpose of the research: To learn the perceptions of teachers who are in teams within a framework of refined praxis.

What you will do in this research: If you decide to volunteer, you will be asked to participate in individual and team interviews.

During the interviews you will be asked several questions regarding how you perceive how refined praxis works for you or your team both as an individual and as a team. I am neither evaluating nor judging your efforts, but rather I am interested in your perceptions of what works and doesn't work, because both will provide depth of understanding about teaming and refined praxis.

Individual interviews allow a teacher's unique perspective, whereas the team interviews allow for a setting wherein more spontaneous conversation can occur that is not driven solely by the researcher. With your permission, we will record the interviews. During the team interview, we will video record so I can determine who is speaking for the purpose of writing the transcripts.

Time required: Individual interviews 60 – 90 minutes

Team interviews approximately 90 minutes long

Please check the following two boxes:

☐ I understand that I will be audio taped during the individual interview.

☐ I understand that I will be video taped during the team interview.

Confidentiality: Your individual interviews will be kept confidential. At no time will your actual identity be revealed. You will be assigned a pseudonym. Anyone who helps me transcribe responses will only know you by this pseudonym. Both audio and video recordings will be kept by me and the transcriber and no one else. The computer will be kept under lock and key in my house. The audio and video recordings will be erased or deleted when my dissertation has been accepted, no later than June 2017. The transcript, without your name, will be kept until the research is complete.

In regards to team interviews, although we will ask all participants in team interviews not to reveal what was discussed, we are not able to guarantee confidentiality.

Teacher Teams and Refined Praxis: An Investigation of Teacher Perceptions

The key code linking your name with your pseudonym will be kept by me, and no one else will have access to it. It will be destroyed when my dissertation is accepted, no later than June 2017. The data you give me will be used for my dissertation and may be used as the basis for articles or presentations in the future. I won't use your name or information that would identify you in any publications or presentations.

Risks: No major risks are anticipated. However, though I will be using pseudonyms, potential participants may be able to be identified by fellow teachers and/or staff members after reading the study.

Benefits: First, this is an opportunity for you to tell your story about your lived experiences with refined praxis. Second, researchers may benefit, because there is a gap in the literature regarding teachers' perceptions of refined praxis that is particular to teams and may encourage further research around teaming and refined praxis. Third, teaching teams in other schools may become more aware of the benefits and challenges that refined praxis teams experience.

Participation and withdrawal: Your participation is completely voluntary, and you may withdraw from the study at any time. You may withdraw by informing me that you no longer wish to participate (no questions will be asked). You may decline to answer any question during the interview or answer without the tape or video recorder on, and continue to participate in the rest of the study.

To Contact the Researcher: If you have questions or concerns about this research, please contact:

Shimon Waronker,
Phone: (347) 585-7803,
Address: 1241 Eastern Parkway, Brooklyn, NY 11213.
Email: uspwaronker@gmail.com

Whom to contact about your rights in this research, for questions, concerns, suggestions, or complaints that are not being addressed by the researcher, or research-related harm: Harvard University Committee on the Use of Human Subjects in Research, 1414 Massachusetts Avenue, Second Floor, Cambridge,   MA 02138. Phone: 617-496-2847. E-mail: cuhs@fas.harvard.edu

Agreement:

The nature and purpose of this research have been sufficiently explained and I agree to participate in this study. I understand that I am free to withdraw at any time, and the tape recorder may be turned off at any time at my request.

Signature: _____Date: _____

Name (print): _____

Appendix B: Informed Consent Form for Refined Praxis Coach and Summer

Teacher Trainers

Teacher Teams and Refined Praxis: An Investigation of Teacher Perceptions

Please consider this information carefully before deciding whether to participate in this research.

Purpose of the research: To learn the perceptions of teachers who are in teams within a framework of refined praxis.

What you will do in this research: If you decide to volunteer, you will be asked to participate in individual interviews.

During the interviews you will be asked several questions regarding how you perceive how refined praxis works for you and how you are attempting to transfer your knowledge of this practice for other teachers. Your descriptions will help provide context to the study, in order to understand how teachers are trained and sustained in their work as refined praxis teams. I am neither evaluating nor judging your efforts, but rather I am interested in your perceptions of what works and doesn't work, because both will provide depth of understanding about teaming and refined praxis.

With your permission, we will audio record the interviews.

Please check the following box:

☐ I understand that I will be audio taped during the individual interview.

Time required: Individual interviews 60 – 90 minutes

Confidentiality: Your interviews will be kept confidential. At no time will your actual identity be revealed. You will be assigned a pseudonym. Anyone who helps me transcribe responses will only know you by this pseudonym. Both audio and video recordings will be kept by me and the transcriber and no one else. The computer will be kept under lock and key in my house. The audio and video recordings will be erased or deleted when my dissertation has been accepted, no later than June 2017. The transcript, without your name, will be kept until the research is complete.

The key code linking your name with your pseudonym will be kept by me, and no one else will have access to it. It will be destroyed when my dissertation is accepted, no later than June 2017. The data you give me will be used for my dissertation and may be used as the basis for articles or presentations in the future. I won't use your name or information that would identify you in any publications or presentations.

Risks: No major risks are anticipated. However, though I will be using pseudonyms, potential participants may be able to be identified by fellow teachers and/or staff members after reading the study.

Teacher Teams and Refined Praxis: An Investigation of Teacher Perceptions

Benefits: First, this is an opportunity for you to tell your story about your lived experiences with refined praxis. Second, researchers may benefit, because there is a gap in the literature regarding teachers' perceptions of refined praxis that is particular to teams and may encourage further research around teaming and refined praxis. Third, teaching teams in other schools may become more aware of the benefits and challenges that refined praxis teams experience.

Participation and withdrawal: Your participation is completely voluntary, and you may withdraw from the study at any time. You may withdraw by informing me that you no longer wish to participate (no questions will be asked). You may decline to answer any question during the interview or answer without the tape recorder on, and continue to participate in the rest of the study.

To Contact the Researcher: If you have questions or concerns about this research, please contact:

Shimon Waronker,
Phone: (347) 585-7803,
Address: 1241 Eastern Parkway, Brooklyn, NY 11213.
Email: uspwaronker@gmail.com

Whom to contact about your rights in this research, for questions, concerns, suggestions, or complaints that are not being addressed by the researcher, or research-related harm: Harvard University Committee on the Use of Human Subjects in Research, 1414 Massachusetts Avenue, Second Floor, Cambridge, MA 02138. Phone: 617-496-2847. E-mail: cuhs@fas.harvard.edu

Agreement:

The nature and purpose of this research have been sufficiently explained and I agree to participate in this study. I understand that I am free to withdraw at any time, and the tape recorder may be turned off at any time at my request.

Signature: _____Date: _____

Name (print): _____

Appendix C: Refined Praxis Coach and Summer Teacher Trainer Protocol

Thank you for agreeing to be part of this study. This interview will help me provide context to what teachers experience. As discussed previously, I'm exploring teacher perceptions around refined praxis. I'll ask some questions to help learn about your perceptions as a teacher, not the work in general. My questions are general prompts, so if I'm missing something important please feel you can direct our conversation towards issues you feel are important. The interview will be about 60-90 minutes long, and as I mentioned earlier, I'll audio record the interview. Is that okay? At any point you may ask to turn it off and also choose not to answer a question if you choose. Do you have any questions before we begin? If you have any questions at any point, please feel free to ask.

Questions:

Is it okay if we begin with a few questions about your background first in order so I can have context about your educational journey?
- ➢ Could you tell me about your educational journey as a teacher prior to coming to this school?
- ➢ How would you describe the teacher you were then?
- ➢ What made you choose this type of school?
  - o What were you looking for in a school?
    - ▪ For yourself?
    - ▪ For a vision?
    - ▪ For students?

Now I'd like to focus on your experience at this school.
- ➢ Could you describe your onboarding experience?
  - o How was the interview process like?
    - ▪ Did any piece make you reflect?
    - ▪ What struck you?
      - • Reword: Was there a moment that you could describe that made a big impression on you?
  - o Tell me about summer training …
    - ▪ How would you describe summer training to someone who never went through it?
    - ▪ Did any piece make you reflect?
      - • Could you tell me about one (or more) reflective experiences that impressed you?
  - o Could you describe in your own words what refined praxis means?
  - o Could you tell me a story wherein refined praxis helped you?

- Or did not help you?
    - How is refined praxis hard?

How do you help transfer the concept of refined praxis to the teachers in your school?
- ➤ During the summer?
    - Could you describe what happens in the summer?
    - What thought processes did you want to help acculturate teachers for refined praxis?
- ➤ (for refined praxis coach only) During the year?
    - Please tell me about refined praxis time?
        - What happens during this time?
        - Could you describe how refined praxis time is potentially both helpful and unhelpful for teacher teams?
        - What are the challenges teams face with refined praxis?
            - Could you share a story of a particular challenge that comes to mind (while maintaining confidentiality)?
        - What are the benefits teams gain with refined praxis?
            - Could you share a story of a particular benefit that comes to mind (while maintaining confidentiality)?
    - Could you tell me a bit about the elements you think are necessary to have successful refined praxis?
        - What do you think is most important?
- ➤ Instructional practice …
    - What relationship, if any, do you see between refined praxis and classroom instruction?
    - Do you think refined praxis is necessary or helpful, not helpful or unnecessary to help improve one's instructional practice?
        - Would you mind sharing your thinking around what you believe?
        - Rewording: You said it was unhelpful (for instance) … could you share your thinking around this perception?

In order to conclude our meeting …
- ➤ How, if at all, has the knowledge and actual practice of refined praxis impacted you?
- ➤ Is there anything that you might not have thought about before that occurred to you during this interview?
- ➤ Is there anything I missed that you would like to tell me about? Is there anything you would like to ask me?

I'd like to close by asking you if you have any questions about my research or anything else we've discussed today. I will transcribe our interview for research purposes. Would you like a copy of the transcript? I just want to make sure that you know that our interview will not be used for any other purpose than this dissertation and that you will have a pseudonym and your participation is confidential. Do you have any questions or concerns? Thank you so much for your time and valuable information that you have shared today.

Appendix D: Individual Teacher Protocol

Thank you for agreeing to be part of this study. As discussed previously, I'm exploring teacher perceptions around refined praxis. I'll ask some questions to help learn about your perceptions as a teacher, not the work in general. My questions are general prompts, so if I'm missing something important please feel you can direct our conversation towards issues you feel are important. The interview will be about 60-90 minutes long, and as I mentioned earlier, I'll audio record the interview. Is that okay? At any point you may ask to turn it off and also choose not to answer a question if you choose. Do you have any questions before we begin? If you have any questions at any point, please feel free to ask.

Questions:

Is it okay if we begin with a few questions about your background first in order so I can have context about your educational journey?
- Could you tell me about your educational journey as a teacher prior to coming to this school?
  - How would you describe the teacher you were then?
- What made you choose this type of school?
  - What were you looking for in a school?
    - For yourself?
    - For a vision?
    - For students?

Now I'd like to focus on your experience at this school.
- Could you describe your onboarding experience?
  - What was the interview process like?
    - What struck you?
      - Potential follow-up: Was there a moment that you could describe that made a big impression on you?
    - Did any piece make you reflect?
  - Tell me about summer training …
    - How would you describe summer training to someone who never went through it?
    - In what ways, if at all, did you experience something similar in prior orientations? How was it different? What was the primary learning you left with after the training? In what ways might you have been confused? What were you looking forward to or dreading?
  - Could you describe in your own words what refined praxis means to you?

Please tell me about refined praxis time?
- What happens during this time?
- Could you describe how refined praxis time is either helpful or not for you?
  - This could be about your instructional practice
  - Or it could be about your interpersonal relations
  - Or it could be about work/life balance

- o (I am open to any aspect you feel that I may not have mentioned as well)
- o Would you mind sharing with me a story or instance that impressed you either positively or negatively, or both?
➢ Would you mind sharing how refined praxis may happen outside of refined praxis time?
➢ Do you think there is evidence of refined praxis during collaborative time or any other setting?
➢ Could you describe a personal story of what happened where …
- o There was a problem of practice?
- o Double loop learning took place?
- o Or espoused theories and theories-in-use were incongruent and someone or the team helped you?
➢ Could you tell me a bit about the elements you think are necessary to have successful refined praxis for yourself?
- o What do you think is most important?
- o Could you describe a time when either you or the team showed those elements?
- o Could you tell me a bit about what makes successful refined praxis challenging?
  - ▪ Could you describe a situation where it was challenging for you to engage in refined praxis?
    - • Or for the team?
➢ Teaming …
- o Could you describe how the team-based structure helps you or not in your instructional practice?
  - ▪ Could you describe a time or experience where the team has helped you?
  - ▪ Could you describe a particular day when you needed support – what happened, how did others support you, what were the particular things they did and said, how did you experience that, how did that impact your teaching, etc.?
- o How do you see refined praxis in the context of a team? What role, if any, does the team aspect play?
  - ▪ In what ways does the team support or enhance your refined praxis experience?
  - ▪ In what ways does the team hinder your refined praxis experience?
➢ Do you think refined praxis is necessary or helpful, not helpful or unnecessary to help improve one's instructional practice?
- o Would you mind sharing your thinking around what you believe?
  - ▪ Rewording: You said it was unhelpful (for instance) … could you share your thinking around this perception?

In order to conclude our meeting …
➢ How have you experienced refined praxis as a teacher? How have you experienced it as a human being? How have you experienced it as a team member?

- ➢ Is there anything that you might not have thought about before that occurred to you during this interview?
- ➢ Is there anything I missed that you would like to tell me about? Is there anything you would like to ask me?

I'd like to close by asking you if you have any questions about my research or anything else we've discussed today. I will transcribe our interview for research purposes. Would you like a copy of the transcript? I just want to make sure that you know that our interview will not be used for any other purpose than this dissertation and that you will have a pseudonym and your participation is confidential. Do you have any questions or concerns? Thank you so much for your time and valuable information that you have shared today.

Appendix E: Focus Group Teacher Team Protocol

Thank you for agreeing to be part of this group discussion. As discussed previously, I'm exploring teacher perceptions around refined praxis which I'm defining as reflective practice that is done with collegial dialogue. I'll ask some questions to help learn about your perceptions of refined praxis as a teacher, not the work in general. My questions are general prompts, so if I'm missing something important please feel you can direct our conversation towards issues you feel are important. In regards to confidentiality, although we will ask all participants in team interviews not to reveal what was discussed, we are not able to guarantee confidentiality. The interview will be about 90 minutes long, and as I mentioned earlier, I'll video record the interview in order to help me identify you during the transcript. Is that okay? At any point you may ask to turn it off and also choose not to answer a question if you choose. Do you have any questions before we begin? If you have any questions at any point, please feel free to ask.

Questions:

Could you talk about how you work as a team? How you learn as a team?

How would you describe your team dynamics?
> ➤ Prompt: challenging, developing, collegial, a love fest?

In prior schools …

What are the benefits of refined praxis in your opinion?
> ➤ Is there a story that shows a benefit that you'd like to share?

What are the challenges of refined praxis in your opinion?
> ➤ Is there a story that shows a challenge that you'd like to share?

What does the coach bring to the conversation?

In what ways do people within the team experience this differently?

How do those differences affect the team?

Could you share a story of when your instructional practice was impacted by your team and refined praxis?

What attributes or attitudes do you feel are necessary for refined praxis to be effective?

What cautions or worries do you have about refined praxis? What does a team need to be aware of before engaging in this type of work?

How if at all has the team changed since using refined praxis?

Did you experience teams before without refined praxis … what was the difference?

How, if at all, has instructional practice been impacted by both teaming and refined praxis?

What do you value most about your team? What would you change about your team?

Is there anything that you might not have thought about before that occurred to you during this interview?

Is there anything you would like to ask me?

I'd like to close by asking you if you have any questions about my research or anything else we've discussed today. I will transcribe our interview for research purposes. Would you like a copy of the transcript? I just want to make sure that you know that our interview will not be used for any other purpose than this dissertation and that you will have a pseudonym and your participation is confidential. I also request that this conversation stay within this room and be held confidential within the team. Do you have any questions or concerns? Thank you so much for your time and valuable information that you have shared today.