Online Reflections in a Blended Collaborative Inquiry for Faculty Development of Community College Professors

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Dedication

I dedicate this dissertation to my wonderful wife, *Brenda*, who deserves a PhD more than I. She has put in as much work on this project as I have, and in some ways, more. While I was busy reading, researching, and writing, Brenda had to pick up the slack on parenting duties, household chores, and numerous other responsibilities. During times of self-doubt and confusion she steadfastly supported and encouraged me. While I had to attend classes, read, and study to learn what collaboration, dialogue and supporting reflection meant, *Brenda* lives those ideals naturally. Although the song has now made it cliché, she has been and always will be the wind beneath my wings.

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Abstract

Blended approaches to collaborative faculty development have the potential for stimulating critical reflection, but the process of online reflection by faculty members has not been fully explored in the literature. The purpose of this qualitative action research case study was to examine a blended approach to collaborative inquiry for professional development with a particular interest in the reflections that occurred online. This study had two focal points. First, to explore the relationship between the online reflections and the overall development of the participants and second, to more closely examine the levels of reflection that occurred within the online aspect of this blended collaborative inquiry.

This dissertation employed the case study method to examine the experience of seven community college faculty members. Interviews and online discussion transcripts were used to identify themes and this study developed a rubric for identifying levels of online reflection.

This study identified six major themes as follows: (a) discussions with other faculty members create a supporting atmosphere that is beneficial to learning about teaching, (b) the online reflections can be challenging, (c) the online reflections allow the discussion to continue and allow participants to keep up while missing a meeting, (d) the online reflections allow for more immediate idea sharing and for more in-depth reflection, (e) the convenience of the course management system facilitated reflection, (f) the lack of incentives to participate and the complicated structure of the discussion boards inhibited reflection.

This study identified five levels online reflections occur as: (a) non-reflective, (b) contemplative, (c) problem/content, (d) process/product and (e) premise. This study also identified several patterns of premise level reflections.

Based on these findings, this study provides greater insight into the best practices for organizing and conducting blended collaborative faculty development and facilitating critical faculty reflection in online venues.

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Chapter One: Introduction

Organization of This Chapter

This dissertation studies a blended faculty development project with a particular interest in online participant reflections. In this chapter, I describe the broad theoretical context of this study including the need for faculty development and a description of various types of faculty development programs. I then describe the purpose of this study and my research questions. I also provide the practical context of this study in terms of my practice and the general organization of the faculty development project being studied. This first chapter also includes delimitations, limitations and definitions related to this dissertation.

Theoretical Context of the Study

College professors are required to teach, but we rarely have formal training in educational processes. Because of this, we tend to teach as we are taught, learn as we go and rely on professional development activities to provide insight into pedagogy (Louie, Drevdahl, Purdy, & Stackman, 2003; Travis, 1995). However, we are not completely inexperienced when we start teaching. Professors are professionals with advanced degrees in our fields and over 18 years of experience in the world of teaching and learning at least as students and quite often as graduate teaching assistants (Bergeron & McHargue, 2002). Thus, we bring with us a wealth of useful experience in what we like (or dislike) about teaching (Brookfield, 2002), even as we have gaps in our understanding (French, 2006). Faculty development programs need to take advantage of the experience

and expertise we already have while helping to fill these gaps and further equip us for the "complex enterprises of teaching" (Gittens, 2007, p. 1).

The need for faculty development.

Teachers require engaging, quality professional development that is suited for their needs because "one-size-fits-all approaches" don't work (Goodnough, 2005). These needs tend to be either external forces that are exerted on the faculty or intrinsic forces derived from faculty desires (Pill, 2005). The external forces include the increasing "call for accountability" on the part of colleges to improve their teaching (Watts & Hammons, 2002, p. 5), the increased percentage of underprepared students to be taught (Bautsch, 2011) and the increasing complexity of the role of a college teacher (Gittens, 2007; Ouellett, 2010). Intrinsically, many professors see the need to improve their teaching and thus are motivated to improve, but they often face barriers to that improvement.

The barriers to improving teaching include faculty isolation, under-prepared students and inadequate professional development resources (Cox, 2004; Outcalt, 2000; 2002). These barriers and the forces on faculty can be re-organized into the following three needs for faculty development: (a) Learning about pedagogy (b) adapting to the changing nature of our practice, and (c) overcoming academic inertia. Each of these needs will be elaborated below.

Learning about pedagogy.

As mentioned above, most college faculty members don't receive formal training in the art of teaching. Preparation for the professoriate involves attaining a graduate degree within a discipline and this degree is typically research focused (Boyer, 1990).

While there are a growing number of graduate programs that include some pedagogical courses, most of them don't (Kreber, 2005a; Ouellett, 2010).

As faculty members work to improve their teaching and increase their knowledge of pedagogy, they are engaging in the scholarship of teaching and learning (SOTL) whether they know it or not (Hutchings, 2010). SOTL is a movement that encourages faculty members to study their practice, improve their pedagogy, improve student learning, and report the results to others (Huber & Hutchings, 2006). In fact, Ouellett (2010) suggested that the terms *faculty development* and *scholarship of teaching and learning* are interchangeable and refer to a wide range of activities used to improve college teaching.

Adapting to changes.

Faculty members need professional development to help them adapt to the changing nature of college teaching (Gittens, 2007). As Adams (2009) noted, "the composition of university classrooms and the goals of the university teaching have changed dramatically over the past two decades." (p.1). Our students are changing, technology is changing, and our pedagogy must change to keep up. The changes in our students include a continuing increase in enrollment along with a steady decline in student preparedness (Bautsch, 2011). Adelman (2006) reported that nearly half (47%) of all college students must take remedial courses. Even those students who don't specifically need remediation often arrive with deficient academic skills and with little ability to organize their own learning (Schrum, Burbank, Engle, Chambers, and Glassett., 2005).

Along with the declining quality and increasing quantity of our students there are continual changes to technology with increasing use of Internet based teaching tools. The increased numbers of students and other pressures have forced colleges to offer more courses and use different delivery means, including online and blended courses (Power, 2008; Schrum, et al, 2005). As Power (2008) pointed out, "University administrators are now turning *en masse* to information and communication technologies" to create blended courses to deal with increased enrollment while "decreasing costs" (p. 504). This increased use of technology produces a challenge for higher education faculty to work to catch up to their students. As Douglas-Faraci (2010) pointed out, today's college students "have had access to technology tools and the Internet since an early age." (p. 760). Ironically, the more experienced faculty members may be the least prepared to address these technological challenges (Schrum, et al., 2005). As the nature of our students change and technology changes, our approaches to teaching must change as well if we are to be successful. As Schrum et al. (2005) pointed out, there have been increasing calls for "more constructivist and active learning in the college classrooms and there is an increasing need to integrate technology" into our teaching (p. 280).

Overcoming academic inertia.

In addition to increasing our knowledge of pedagogy and keeping up with changes, college teachers need faculty development to overcome academic inertia. Academic inertia is my term for the net result of external barriers (especially those mentioned above) coupled with the human tendency to not fix what is not overtly broken. What has worked well enough in the past should be good enough for the future. Schön

related this concept to organizations being “dynamically conservative” (1983, p. 328), while Jarvis called this “ritualism” (1999, p. 54). As we move from being novices to becoming experts, we become comfortable with ourselves and our practice as teachers. But there is a fine line between *being in the groove* and *being stuck in a rut* as a teacher. Being too comfortable can result in complacency and we may stop considering the current situation for what it is. For community college professors this is especially problematic because we often get to teach the same topics every semester and only get feedback when things go terribly wrong. As Jarvis (1999) pointed, out, it is easy to lose our reflexivity and enter a “non-learning position” (p.38). Thus, in many ways teaching that is “good enough” can end up becoming an obstacle to teaching that is great.

Teaching excellence requires that we continuously improve our practice. As professionals, we need to focus not only on improving what we know went wrong, but also on understanding what went right and why (Schön, 1983, 1987). If veteran faculty members become complacent, it will take a very strong internal change to cause them to want to change their practice (Pill, 2005). This internal change is best produced by deep reflection on our methods and, more importantly, on our underlying assumptions about teaching and learning (Kreber & Cranton, 2000; Lyons, 2006; McAlpine & Weston, 2000). This reflection on our assumption and subsequent changes can lead to transformative learning of faculty members (Kreber & Cranton, 2000; Mezirow, 1991, 2000). Nelson and Slavit (2008) suggested that collaborative faculty development projects provide the support needed to attain the critical reflection required for these

kinds of changes in practice. In order to understand collaborative forms of faculty development we need to first explore the general field of faculty development.

What is Faculty Development?

Institutional support for faculty development programs.

Institutional support for faculty development programs are widely varied (Ouellett, 2010). At several of the larger universities there are fully staffed faculty development departments that provide a wide range of services to their schools (McAlpine & Saroyan, 2004). While smaller colleges may have some form of a teaching center, most community colleges organize their faculty development programs by a committee or even an individual faculty member on a part-time basis and some have no program at all (Oullette, 2011; Outcalt, 2000, 2002).

At my college we have an Instructional Development Committee (IDC) and a Faculty Development Committee (FDC). The IDC funds a variety of faculty initiated innovative projects to improve teaching and student success, some of which are faculty development activities. In addition, there are funds available for faculty development activities such as travel to workshops and conferences. The FDC helps to plan our annual faculty in-service events at the beginning of fall semester and offers various short term workshops on teaching throughout the year. Those events are a mixed bag of activities that serve a range of purposes from informing the faculty about school-wide projects to short workshops on various aspects of teaching and learning. The bottom line at my college is that faculty development is a highly individualized process. Each faculty member engages in whatever activities they consider needed at that time. Faculty

development is reported as part of our annual self-evaluation/supervisor evaluation process in which each professor justifies to themselves and their department head whether it has been sufficient.

Traditional forms of faculty development.

As illustrated by the situation at my school, most teaching improvement activities tend to be short in-service workshops that are overly broad in scope and difficult to put into practice (Erklenz-Watts, Westbay, & Lynd-Balta, 2006). Even if faculty are inspired to change based on these limited activities, they will then face numerous barriers to implementing any changes. These barriers include isolation and lack of support (Cox, 2004; Erklenz-Watts et al., 2006; Outcalt, 2000), lack of time (Hubball, Collins, & Pratt, 2005) and the academic inertia I described above. Even the "Great Teachers Seminars" (Bergeron & McHargue, 2002, p. 76) tend to be short duration events of 2 to 5 days. While collaboration, which they called "well facilitated shop talk" (p. 77), is valued the short duration may not lead to real change. Real change requires a sustained focus, a supporting environment and reflection on assumptions about teaching (Brookfield, 2002; Kreber & Cranton, 2000)

Collaborative forms of faculty development.

Cox (2004) described how faculty members are isolated and that "faculty learning communities (FLC)" can serve to reduce that isolation and create a sense of community (p.5). As Cox stated, "Creating a faculty learning community program is one approach that engages community in the causes of student and faculty learning and of transforming our institutions of higher education into learning organizations" (p. 5). Sherer, Shea, and

Kristensen (2003) described FLCs as communities of practice and suggested that they are also "referred to as 'faculty learning groups', 'faculty inquiry groups', 'faculty study groups', or 'teaching circles'"(p. 185).

There is a wide diversity of FLCs and other collaborative faculty development projects. They exist in a variety of forms that range from fairly informal "learning circles" (Erklenz-Watts, Westbay, & Lynd-Balta, 2006; Levine et al., 2007; Lynd-Balta, Erklenz-Watts, Freeman, & Westbay, 2006) and teaching teams (Casey, 1996; Dunbar, 1996; Ludwig & Taymans, 2005) to formal, institutionally organized faculty certificate programs (Fitzgibbon& Jones, 2004; Hubball et al 2005; Koch et al., 2002; Milner-Bolotin, 2007; Pill, 2005). Some collaborative programs focused on self-study and personal growth (Bair & Bair, 2008; Johnson et al., 2003; Louie et al., 2003) while others focused on course or institutional improvement (Bray, 2002; Casey, 1996; Dunbar, 1996; Goodnough, 2005; Kasl & Yorks, 2002). Richlin and Essington (2004) reported over 200 different ongoing faculty development projects across multiple colleges and universities that could be counted as some form of FLC and that many of them specifically stated that their goals related to SOTL.

Each of these collaborative approaches has some degree of overlap with the others. Their distinctions are based on the make-up of the group (cross-disciplinary or not), the focus of study (single course, individual reflection, community building, or special topic) and the duration of their collaboration (one semester to multi-year). Even with this diversity, there was a consistent finding that the collaboration between peers was one of the most beneficial and rewarding aspects of their projects and they all

emphasized some aspect of reflection. Based on the degree of overlap in form, Ellis and Ortquist-Arhens (2010) suggested that the terms faculty learning communities (FLC), teaching circles and communities of practice "are used somewhat interchangeably to represent group structures that support in-depth development over time" (p. 120).

The concept of group development and the focus on improving practice suggests that collaborative forms of faculty development may function as action research (Heron & Reason, 2001; Mills, 2003). As will be explored in the literature review below, these forms of action research can be called collaborative inquiries and involve both collaboration and reflection (Kasl & Yorks, 2002). Faculty development projects conducted as collaborative inquiries honor the experience that faculty members bring to the setting while still allowing them to learn in a supporting environment (Kasl & Yorks, 2002). However, the time requirements for conducting such projects can interfere with faculty participation. Using online and blended approaches to faculty development may alleviate some of these time constraints as will be discussed next.

Online and blended approaches to faculty development.

While faculty members may benefit from collaborative reflection during a CI, these collaborations can be time intensive. It takes significant time for a group to engage in the dialogical processes needed to spark the deep reflection required to achieve substantive change and overcome academic inertia. Since faculty members are already limited by time, this can negate many of the benefits. However, these time constraints can be alleviated (at least to some degree) by using technology to extend discussion and dialogue beyond the time constraints of the face-to-face meetings (Hanlin-Rowney et al.,

2006; Vaughan & Garrison, 2005; Ziegler, Paulus & Woodside, 2006). Asynchronous online discussion boards are particularly beneficial in this regard because they eliminate the need to coordinate the complex schedules of working professionals (Smith, 2005, Smith & Dirkx, 2007) and they have been shown to support critical reflection (Dirkx & Smith, 2009; Lord & Lomicka, 2007; Whipp, 2003). In a similar way, Hanlin-Rowney et al. (2006) have shown that online dialogue can be sufficient for supporting transformative learning within a collaborative inquiry.

One explanation for the deeper online reflection is that participants have the chance to gather their thoughts and post more carefully considered ideas than may occur to them in person (Vaughan & Garrison, 2005). Also, there is an opportunity for more people to get involved. In face-to-face meetings, only one person can talk at once, but online there is ample time for responses from multiple others (Vaughan & Garrison, 2006). This enhances the overall collaboration. However, faculty members may not be comfortable enough in the online environment to achieve the collaboration needed for support. By using a blended approach which combines face-to-face interactions with the online reflections faculty members may become more comfortable (Garrison & Kanuka, 2004; Vaughan & Garrison, 2005)

Vaughan and Garrison (2005) noted that there is a strong synergistic effect that occurs when the blended approach "combines the strength of both face-to-face and online learning" (p. 4). They used the Community of Inquiry (COI) model to study a blended faculty development project (in which faculty members were learning about blended learning approaches) and found that different aspects of learning occurred within the

face-to-face and online venues. The COI model was developed by Garrison, Anderson and Archer (2000) as a way to explore the overall process of learning in an online or blended learning environment (Garrison & Kanuka, 2004).

Because college professors are busy professionals, time is critical and online approaches to faculty development may alleviate some of the time constraints. On the other hand, isolation issues may detract from the benefits of collaboration. Blended approaches offer the best of both worlds with reflection occurring predominantly online. While there has been substantial work in the field of reflection in online teaching and learning, there has been only sparse attention paid to professional faculty members as they participate in a blended approach to collaborative faculty development (Vaughan & Garrison, 2005).

A specific area that requires more empirical investigation is the online reflection as it occurs during a blended CI conducted by college professors within their practice. As will be further demonstrated in the literature review below, prior to this project, there were few empirical studies of a blended approach to college faculty development. The best prior example of this type of study was Vaughan and Garrison (2005) which looked at faculty members using a blended approach to learn about blended learning. Other studies of college faculty development were either part of a formal college course (Fitzgibbon & Jones, 2004) or conducted fully online and not in a blended format (Schrum et al., 2005). Since the conclusion of this project there have been a few more empirical studies of the blended approach to college faculty development (Lee et al., 2010; Schwier, Morrison, & Daniel, 2009), but this is still an area needing further

research. Of particular interest in this study is the need to look more closely at the process of online reflection and to explore the relationship between the online reflections and the overall development of the participants.

Purpose of the Study and Research Questions

The purpose of this action research case study was to examine a blended approach to collaborative inquiry for professional development with a particular interest in the reflections that occurred online. This study had two focal points. First, to explore the relationship between the online reflections and the overall development of the participants and second, to more closely examine the levels of reflection that occurred within the online aspect of this blended CI. My overarching research question was to explore how the online reflections contributed to the overall effectiveness of this blended approach. To support this overarching question, I looked at four particular sub-questions:

1. How do participants perceive the overall effectiveness of this approach to faculty development?

2. How do participants perceive the relationship between online reflection and their overall development during this collaborative inquiry?

3. What aspects of the overall CI design facilitate the online reflection?

4. How does reflection occur within the online aspect of this blended CI?

Significance of the study.

This research study provides a detailed look at online reflection by professional faculty members within the context of a blended collaborative inquiry. As will be described in the literature review below, most studies of online reflection have been done

within the context of college students in courses and not within the context of professors within their practice. Thus the significance of this study is that it will be the first to take a detailed look at the online reflections of college faculty members engaged in a collaborative inquiry. In addition, there is a relative scarcity of research into blended approaches to faculty development for college professors and this study adds to that limited knowledge base.

Organization of the Dissertation

The following is a case study of a faculty development project that was conducted in the form of a collaborative inquiry (Heron & Reason, 2001). This faculty development project used a blended approach (Garrison & Kanuka, 2004; Vaughan & Garrison, 2005) in which both face-to-face and online discussions and reflections occurred. In addition to a detailed description of how this faculty development project proceeded, this case study includes an embedded analysis of the online reflections (Creswell, 1998). As part of this chapter I will describe the broader context of this study as well as some of the details of this project. In the following chapter I will review the pertinent literature related to faculty development from within the frameworks of scholarship of teaching and learning, collaborative inquiries, transformative learning, and blended approaches to learning. After a description of the data collection and analysis procedures I will present my findings. As part of my conclusion, I will return to both the literature and my practice in terms of areas of further research and improvement.

Practical Context of the Study

Position of the researcher.

This dissertation is a case study of a collaborative inquiry that I facilitated. Because the results of that collaborative inquiry and the result of this study impact my practice, this dissertation is also an action research study. The collaborative inquiry that is the focus of this case study research was itself a form of facilitated collaborative inquiry where I was both the facilitator-organizer and a co-participant. As Heron and Reason (2001) note in the description of a CI, "some groups are convened by one or two initiating researchers, familiar with the method, who choose an inquiry topic, [and] invite others to join …" (p. 181). Alcantara, Hayes, and Yorks (2010) also suggest that collaborative inquiries often need a facilitator and I served in that role. This put me in the position of being a participant-facilitator during the collaborative inquiry and because I planned on conducting research on the CI, I was also a participant-observer. Once the collaborative inquiry was complete, I stepped back and conducted a formal research study on this CI. The action research aspect of this project is based on my position as the chair of my college's faculty development committee and my periodic role as facilitator of other faculty development projects. At the end of chapter 5, I will return to my position as action researcher in the section on implications for practice.

My practice.

I am an assistant professor of biology and the lead instructor for anatomy and physiology at Pellissippi State Community College in Tennessee. Our college serves over 11,000 students annually and employs nearly 200 full-time and around 500 part time

faculty members. I have been teaching full time at the college level for over 15 years. Before turning to teaching, I spent 12 years as an Army officer, where soldier training and professional development were a major part of my responsibilities.

As a lead instructor, I am responsible for recruiting and managing as many as 12 adjunct instructors per semester and working with as many as five other fulltime instructors. Since anatomy and physiology is taught in a multiple section format, it is important that each instructor teaches their section in a way that is closely comparable to the other sections. While we try to hire quality instructors with teaching experience, I often have to work with new adjuncts to get them 'up to speed' on how we like our courses to be taught. However, I also recognize that my fellow instructors are professionals and bring with them knowledge that all of us could benefit from. We often conduct short meetings and have e-mail conversations to discuss teaching ideas and issues. I try to be as collaborative as possible in finding ways to improve the course that I am responsible for. This desire for improvement led me to seek further education.

In 2004 I joined a cohort of fellow graduate students in the Collaborative Learning program at the University of Tennessee. This program has greatly enhanced my understanding of teaching and learning in general and has re-focused my views on collaboration, reflection, and professionalism. Based on this new focus, I became more involved in faculty development at Pellissippi State and worked to create a faculty development committee, which I have chaired for the past three years.

Past cycles of action research

Herr and Anderson (2005) suggest that if novice researchers are conducting action research as part of a dissertation, then the researcher should try to conduct several cycles of action and reflection prior to beginning their dissertation project. I have already engaged in several such cycles in the conduct of professional development. I have conducted many short term seminars on various teaching techniques including a workshop on the types of teaching and learning (Peters & Armstrong, 1998; Peters & Gray, 2005). My reflection on these workshops is that while they were enjoyable to me and to most of my co-participants, they were too short lived to create any real sense of belonging that would allow for dialogue or reflection. As Erklenz-Watts et al. (2006) also noted, I have seen participants "come away…filled with enthusiasm and ideas…" (p. 275) and then not actually implement them. I have also seen informal lunch room conversations spark new ideas that were immediately put to use. I have come to believe that the difference in outcomes is related to the level of reflection that the conversation or work shop created. As Mezirow (1991, 2000) suggested, critical reflection may lead to transformation in perspectives that produces substantive change. It takes substantive change to overcome academic inertia.

In 2007, I participated in an online reflective practice project for biology teachers at my college that was organized by one of my colleagues (see Kronk, 2006). This activity was open to all biology instructors (both full time and adjunct) and the original intent was for participants to learn about and try a new teaching technique and then reflect on their success. The reflections were to be done online within a discussion board

established for this purpose. Several faculty members (including myself) posted teaching topics for others to read and respond to. Although reflection was part of the project's intent, the focus was to get faculty members to try new techniques and encourage more student engagement.

While that project resulted in quite a few discussions about teaching, it did not quite go as planned. First, the discussion board format was replaced with an e-mail list serve format in order to increase overall participation. Second, while the participants discussed many aspects of teaching, none of them actually reported trying a new technique nor reflecting on such. Several of them did report, however, that they planned on trying those techniques in future semesters. Overall, that project was successful in generating discussions on the art of teaching and the teachers enjoyed the process.

While that project was labeled reflective teaching practice, the intent was not the type of critical reflection that collaborative inquiries are intended to create. Instead, the reflection was more like *recipe swapping* in terms of teachers sharing ideas without really collaboratively building new ideas. I believe that the project's membership was too large (there were over 40 participants) to create a supporting dialogical space and that without any face-to-face meetings there was no personal accountability to fully participate.

Based on these experiences, I decided to organize another form of faculty development on my campus that would foster collaborative learning and support more critical reflective practice. Using my knowledge of the elements of collaborative learning and the ideas gleaned from the literature review below, I developed the collaborative inquiry described next.

The study project: A blended collaborative inquiry.

Several of my colleagues and I had been using the case study teaching method (Herreid, 1998, 2005) for many years. However, most of us had not closely studied the detailed literature on this teaching technique. In addition, several other colleagues had expressed an interest in learning about case study teaching before they tried it in their classrooms. Based on my experience with other faculty development projects, I decided that a collaborative approach would be the most effective way for a small group of us faculty members to study case study teaching and implement it in our practice. I envisioned that the collaboration would also spark reflections on our practice that might lead to improvements beyond simply adding case study teaching to our repertoire. In November 2007, I received approval from my school's Instructional Development Committee (IDC) to organize and conduct a faculty development activity to explore the case study teaching method (see Appendix 1 for a copy of this proposal). This project used the collaborative inquiry (CI) model of action research (Heron & Reason, 2001; Kasl & Yorks, 2002) in which the peer-participants collaborate in increasing their understanding and improving a particular aspect of their practice. In this particular CI, we explored the case study teaching method as it applies to college level classes (Herreid, 1998, 2002a, 2002b, 2005, 2007).

Delimitations of this Study

This study focuses on collaborative faculty development projects for college faculty. As such it will say very little about faculty development of K-12 teachers, or the

online reflections and learning of college students. Also, it will focus on the online aspects of this blended approach rather than the face-to-face aspects.

Limitations of this study

The primary limitation of this dissertation study is that it examines only one small group of faculty members within the setting of a community college. As such, it may serve as a case that illustrates this sort of collaborative inquiry, but it may not be representative of all such projects.

A second limitation of this study is created by the potential researcher bias produced by my position as both the facilitator and the researcher. Because of this, my findings will be limited in two ways (a) by my perspective as the facilitator and (b) by my closeness to the participants. Because I was looking at this as the facilitator, I may tend to be defensive of errors and potentially a cheerleader for success. Because I was their colleague the participants may have tried to present a more positive response to the overall project. I tried to counter these biases by actively searching for and reporting all the negative aspects of this project. I also specifically asked my co-participants to describe and clarify any negative aspects that they experienced

Definitions and Abbreviations

Blended Learning: A learning situation that integrates both online and face-to-face components in a substantive way (Garrison & Kanuka, 2004).

Collaborative Inquiry (CI): A collaborative inquiry is "a systematic structure for learning from experience" that includes "repeated cycles of reflection and action [and]

multiple ways of knowing" through which a group of peers strives to answer a question of importance to them" (Kasl & Yorks, 2002, p. 1).

Community of Inquiry (COI): A framework for understanding online learning experiences that included a coding scheme useful as a research tool for studying online learning (Garrison, Anderson, & Archer, 2000)

Desire-2-Learn (D2L): A commercial learning management system that incorporates discussion boards with document postings and other teaching and learning features. D2L was the system used for the online discussions in this project.

Face-to-face (ftf): Face-to-face refers to meetings held in-person and in the same physical space. While face-to-face and in-person could be considered synonymous terms, the concept of 'in-person' becomes less clear with advanced communication technologies. As Schwier (2001) noted: "interpersonal communication could include any communication between people that does not pass through a gatekeeper and that allows for immediate feedback" (p. 17). Thus telephonic conversations, texting, and synchronous chat rooms, all of which allow for immediate feedback, could be considered 'in-person'. The term face-to-face or ftf makes it clear that the participants were physically together.

Faculty Development: Any number of activities conducted to help faculty members improve their teaching and/or the learning of their students (Ouellett, 2010).

Reflection: Kreber (2005b) noted that although reflection has been studied over many years and from multiple perspectives, its definition is still unclear. Indeed, it is this multitude of perspectives that have led to the confusion. While different types and levels

of reflection will be explored and clarified as part of the literature review, McAlpine and Weston (2000) provided the following operational definition that I will use for this dissertation: "Reflection is the vehicle for turning experience into learning" (p. 367).

Scholarship of Teaching and Learning (SOTL): A theoretical framework for improving teaching and learning within higher education by encouraging faculty members to take a more scholarly approach to their teaching, conducting research on their teaching and sharing the results of that research with others (Hutching, 2010, Kreber& Cranton, 2000).

Chapter Two: Literature Review

Theoretical Frameworks

This study draws from four theoretical frameworks that combine and converge to create a focused view of collaborative faculty development projects conducted with a blended approach. These four frameworks are:

- Scholarship of teaching and learning (SOTL)
- Collaborative inquiries (CI)
- Transformative learning (TL)
- Community of inquiry (COI).

These four frameworks are critical to this dissertation in two ways. First, they provide the theoretical context for literature related to this project. In the following sections, I will provide general background for each of these frameworks and then synthesize the pertinent literature related to this study to provide an understanding of what is currently understood and what is not yet known about blended collaborative faculty development. The second critical aspect of these frameworks is that they provide guidance on how to best conduct blended and collaborative faculty development projects. Because there was a delay between the start of this project and the completion of this dissertation, some of the literature discussed below was not available while I was designing the project. As I move through the literature review, I will present best practices based on the *current* literature even if I did not incorporate them in my design. I will return to a look at best design practices in Chapter Five. After a brief description of the connections between

these four frameworks, each of them will be more thoroughly described and connected to faculty development and this dissertation research study.

Convergence of the first three frameworks.

The scholarship of teaching and learning (SOTL) framework establishes the need for faculty development to improve teaching and encourages scholarly approaches to teaching (Hutchings, 2010; Kreber & Cranton, 2000; Kreber, 2003). SOTL also calls for collaborative approaches to faculty development (Huber & Hutchings, 2006) and suggests faculty members reflect on their practice for improvement (McKinney & Gentry, 2002; Kreber & Cranton, 2000). Collaborative inquiries (CI) provide a framework for conducting and understanding these collaborative and reflective forms of professional development (Bray, 2002; Heron & Reason, 2001; Kasl & Yorks, 2002). Because these first two frameworks describe reflection as a process of adult learning, they converge onto the framework of transformative learning (TL) (Mezirow, 1991; 2000). More specifically, Kreber and Cranton (2000) related SOTL to the framework of TL by noting that faculty members are professional adults engaged in the "process of reflection on experience-based knowledge and research-based knowledge on teaching" (p. 476). Alcantara, Hayes, and York (2009) specifically suggested that groups can achieve "transformative learning through co-inquiry" and that "collaborative inquiry (CI) is a strategy for learning from experience" and that CI involves reflection (p. 251). Mezirow (1991) describes transformative learning (TL) as a theory of how adult learning is based on "making meaning through reflection" (1991, p. 99). Thus, the first three

theoretical frameworks converge on their emphasis on reflection as necessary for faculty development in any environment.

Another way to view the convergence of these three theoretical frameworks is to consider the focus of the reflection that each suggests is critical to faculty development. SOTL asks faculty members to reflect on their practice from the broad theoretical perspective of general and discipline-specific pedagogy. Collaborative inquiries as a form of action research ask faculty members to reflect on their practice from the local perspective in conjunction with small groups of their peers. Finally, transformative learning asks faculty members to reflect on their practice from the personal level with a focus on examining their assumptions about teaching and learning. These frameworks served as both practical guides for designing the faculty collaborative inquiry project that this dissertation studied and as conceptual guides for understanding how these sorts of projects ideally function.

Extension to the online environment.

Because this study is examining faculty development in a blended environment, the community of inquiry framework (Garrison, Anderson, & Archer, 2000) allows for an understanding of how collaboration and reflection can occur online. Vaughan and Garrison (2005) specifically related COI to TL and CI as they described how a blended approach to faculty development has the "potential to facilitate the transformation of one's teaching practice through collaborative project construction and dialogue" (p. 2). Thus the COI framework takes the convergence of the first three frameworks and extends them to the online environment as shown in Figure 2.1.

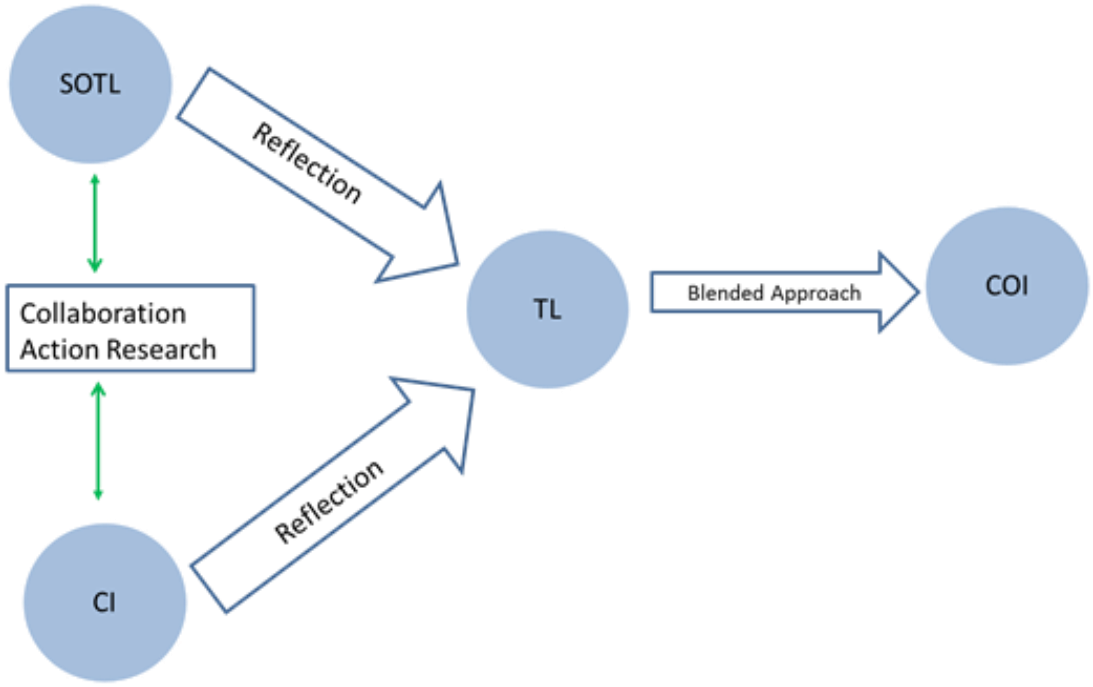

Figure 2.1 Convergence of Theoretical Frameworks

Organization of the Literature Review

This literature review will systematically explore each of the four theoretical frameworks described above. Within each of these explorations, I will provide a brief overview and background of the framework and then explore how that framework specifically applies to faculty development and this dissertation. I begin with an exploration of the scholarship of teaching. I then systematically explore collaborative inquiries (Heron & Reason, 2001; Kasl & Yorks, 2002) using the lens of the elements of collaborative learning (Merrill, 2003; Peters & Gray, 2005). I then discuss transformative learning theory (Mezirow, 1991; 2000) and its emphasis on critical reflection. Within that segment, I will explore the extant empirical studies of reflection related to faculty development. Next I will explore how the community of inquiry model

(Garrison, Archer & Anderson, 2000) allows for an understanding of the collaborative and reflective aspects of online learning. In that segment I will explore empirical research dealing with blended approaches to faculty development of college faculty. This literature review will end with an analysis of the areas that require further research that this study will address.

Faculty Development and the Scholarship of Teaching and Learning

History of the scholarship of teaching and learning.

In 1990, Ernest Boyer, who was then president of the Carnegie Foundation for the Advancement of Teaching published his seminal work *Scholarship Reconsidered* in which he examined the various roles, functions and priorities of college faculty. This work was strongly supported by a national survey of faculty that had been conducted the year before (Boyer, 1990). Boyer asserted that the work of college professors had lost its focus on teaching and had become too centered on research. Instead of such a "restricted view of scholarship," Boyer (1990, p.15) suggested four related areas of scholarship as follows (pp.15-24):

- Scholarship of Discovery (investigation and research)
- Scholarship of Integration (synthesizing; making sense of what is discovered)
- Scholarship of Application (service: applying knowledge to problems)
- Scholarship of Teaching (educating and enticing future scholars)

Boyer summarized these concepts by noting that "knowledge is acquired through research, through synthesis, through practice and through teaching" and that "inspired teaching keeps the flame of scholarship alive" (p. 24). While this literature review will

focus on the scholarship of teaching, Boyer noted that these four scholarships inter-relate and support one another.

As Hutchings (2010) described, Boyer's work "has a longer and more varied lineage, drawing on earlier work on teacher knowledge …educational research coming out of schools of education …the teacher research movement in K-12 settings … and the practices of classroom assessment and classroom research" (p. 64). Boyer's successor (Lee Shulman) extended the concept to the scholarship of teaching *and learning* (Bender, 2005; Gittens, 2007).

While the scholarship literature has grown and evolved in many different directions (Braxton, Luckey, & Helland, 2002) the general consensus is a focus on improving teaching and learning in higher education through pedagogical knowledge, disciplined inquiry, peer review, and critical reflection (Hutching, 2010; Kreber, 2005a; 2005b). SOTL suggests that faculty members learn about pedagogy, adapt it to their discipline, and then research how that works within their practice. This synthesis of inquiry and teaching within the context of practice relates SOTL back to the other three scholarships.

Multiple foci of the scholarship of teaching and learning.

Boyer's original work involved two different, but related concepts. These concepts are what Weimar (2000, p. 195) called the "Scholarship *of* teaching" as opposed to "Scholarship *on* teaching". In a similar way, Richlin and Cox (2004) described a difference between scholarly teaching (teaching with pedagogy in mind or S*of*T) and scholarship (research and reporting on teaching or S*on*T). Weimer asserted that while

there was very little new in the way of general pedagogy, there was a lot more to be learned about pedagogy applied to a particular discipline and that those findings needed to be better reported in the literature. As the SOTL movement has progressed there has also been a shift in the focus. While originally (and still) focused on scholarly approaches to teaching and ways to improve the process of teaching, there is an emerging third focus on what is best to teach. Kreber and Castleden (2009) suggested that "academic teachers and institutions need to focus less on 'doing things better' and more on 'doing better things'" (p. 528). That is SOTL suggests not only that faculty members strive to improve their practice in terms of better teaching methods, but that they also reflect on what is best to teach within their discipline and their assumptions about teaching.

Because Boyer's (1990) original intent with the four scholarships was to re-balance the goals and activities of "the professoriate" (p. i), SOTL has somewhat opposing impacts on different types of institutions. For research universities, it encourages professors to place more focus on their teaching. That is, research professors should train their research skills on their own practice. For college professors in teaching universities, four year colleges and community colleges, SOTL encourages a scholarly approach to teaching that includes valuing the research process, research literature on higher education teaching *and v*alues the process of disseminating research results. Thus SOTL encourages research focused professors to adopt a scholarly approach to their teaching that is as rigorous and vital as their scholarly approach to research *and* it encourages teaching faculty to value the research and publication process.

Another way to view the multiple foci of SOTL is to note that there are three levels of foci. First, there is a focus on using scholarly approaches to teaching so that personal practice is understood within the context of the larger literature on pedagogy (Kreber & Cranton, 2000). Second, there is a focus on making teaching and learning more public (Hutchings and Huber, 2010) and thus connecting personal practice to the local context of your peers and the larger context of pedagogical literature. Third, and integrated with the first two, there is a need for faculty members to critically reflect on their practice and their personal assumptions related to it (Kreber & Cranton, 2000; McKinney & Gentry, 2002). Each of these foci will be further explored below.

SOTL and domains of pedagogical knowledge.

Because college teaching involves multiple disciplines and multiple forms of teaching, the pedagogy of higher education is quite diverse. Even with this diversity SOTL "invites faculty from all disciplines and fields" to engage in pedagogical research. (Weimer, 2001. P. 45). McAlpine and Weston (2000) suggested four common knowledge domains related to SOTL as: content knowledge, pedagogical knowledge, pedagogical content knowledge and learner knowledge. Content knowledge refers to subject matter knowledge and pedagogical knowledge refers to "broad general principles and strategies of classroom management and organization that transcend subject matter" (p. 372). Pedagogical content knowledge is based on understanding how particular subject matter is best presented to learners. Learner knowledge focuses on "the characteristics that students of different ages and backgrounds bring to the situation" (p. 372). When taken together, these domains suggest that faculty members need to know

their subject matter, general teaching techniques and those teaching techniques specific to their discipline. They also need to have some understanding of their students' specific needs and abilities.

SOTL as critical reflection and transformative learning.

Kreber and Cranton (2000) suggested that SOTL involves faculty members reflecting on their practice and that because faculty members are adults, such reflection is related to transformative learning theory (Mezirow, 1991, 2000). Kreber and Cranton (2000) noted that faculty members must reflect not only on their own "experience-based knowledge," but also on "research-based knowledge" (p. 476). They developed the scholarship of teaching (SofT) model of reflection as a conception of how faculty members might demonstrate that they were engaging in SOTL.

Using Mezirow's transformative learning theory they developed indicators of "three levels of reflection -content, process and premise" (p. 478). Content reflection asks about *what* happens in teaching, while process reflection asks about *how* learning takes place. Premise reflection asks about "why we teach the way we teach" and thus involves deeper and more "critical reflection on practice" (p. 480). Kreber and Cranton developed a list of indicators for each of these levels that could be placed into a portfolio as a way of documenting faculty development. While their initial work was conceptual, Kreber and Cranton's (2000) SofT model of reflection has been used in empirical studies of reflection by faculty members. I will further explore the empirical studies of reflection using the SofT model in the section on reflection and transformative learning below.

SOTL and collaborative faculty development.

One of the principles of the scholarship of teaching and learning movement is that teaching is a professional activity that "can be improved through systematic inquiry, critique, and collaboration within a diverse community of learners" (Hutchings, 2010, p. 70). Boyer (1990) also described scholarship as being a collaborative effort that should involve the entire college community. As Shulman (2000) stated "We develop a scholarship of teaching when our work as teachers becomes public, peer-reviewed and critiqued." (p. 50). Thus, the SOTL concept suggests that college faculty members engage in regular, rigorous reflection on their practice with the intent to improve teaching. While such reflective practice could be done individually, SOTL also calls for college teaching to become more public (Huber & Hutchings, 2009; McKinney & Gentry, 2002). While SOTL reports can be accomplished in many ways, including publishing in journals and creating course portfolios (Kreber and Cranton, 2000), peer reflection in a collaborative faculty development project offers the opportunity to accomplish the goals of SOTL within a supportive setting (Richlin & Cox, 2004). Waterman et al. (2010) suggested that collaborative peer consulting conducted as action research is a way to train faculty members in SOTL while improving their practice.

I reviewed the many forms of collaborative and reflective faculty development projects in chapter one above and noted that they were forms of action research. Although the term "collaborative inquiry" is not always applied to collaborative faculty development, it is often used to describe these kinds of action research activities whether they involve improving teaching (Bray, 2002; Goodnough, 2005) or any other form of professional practice (Heron & Reason, 2001; Kasl & Yorks, 2002). Additionally, the

CI concept can serve as general and ideal model for these types of SOTL activities. Thus, although not all collaborative faculty development projects are conducted as a CI, I consider the collaborative inquiry approach to be an ideal model for conducting faculty development. Also, the CI model can be used to understand the myriad of collaborative faculty development projects including faculty inquiry groups, learning circles, and faculty learning communities described in chapter one. Because this dissertation is based on a CI project, an exploration of the collaborative inquiry framework is critical. I provide that exploration in the following section.

Collaborative Inquiries as Faculty Development

This section will explore the theoretical framework of collaborative inquiry in greater detail. After a brief overview of CI and how it is a form of action research, I will introduce the concept of collaborative learning (CL) and then use the elements of CL to examine CIs more closely.

Collaborative inquiry as action research.

A collaborative inquiry is "a systematic structure for learning from experience" that includes "repeated cycles of reflection and action [and] multiple ways of knowing" through which a group of peers strives to answer a question of importance to them (Kasl & Yorks, 2002, p. 1). CI is especially appropriate for "pursuing topics that are professionally developmental…" (p. 1). CI is firmly grounded in the "larger family … of action research and participatory action research" (Kasl & Yorks, p.1; see also Heron & Reason, 2001; Herr & Anderson, 2005; Mills, 2003). While there may be some argument that action research is only one member of that larger family, Herr and Anderson (2005)

suggest that "the term action research … serves as an umbrella term for the others" (p. 3). They then listed several related terms including "participatory action research, practitioner research, action science, collaborative action research, cooperative inquiry, collaborative inquiry, appreciative inquiry and teacher research" (p. 2). Similarly, Peters (1997) states that "There is not just one way to do action research" (p. 2) but suggests that all action research involves learning from experience. Thus, faculty development conducted as a collaborative inquiry provides a way for faculty members to conduct action research on their own practice and to learn from their own experience.

Herr and Anderson (2005) suggested a continuum of educational action research based on the "positionality of the researcher" from "insider" to "outsider" (p. 31). In that continuum the researcher may be either a full participant-observer-researcher doing research *with* others on his/her own practice or an outsider doing research *on* others with varying degrees of insider/outsider positions in between. Within that continuum, a collaborative inquiry falls close to the insider tradition because it involves peers collaborating to improve their practice.

Faculty members engaged in CI are clearly involved in action research that leads to improvement in teaching and learning and the sharing of lessons learned. Thus, faculty development conducted as a CI fully implements the scholarship of teaching and learning (Hutchings, 2010). I will use the terms collaborative inquiry, CI and collaborative faculty development interchangeably throughout this dissertation. Because this dissertation centers on a collaborative inquiry that led to participants constructing new knowledge for themselves, it is important to understand how learning occurs within

a collaborative inquiry. To fully understand that, I will first explore the meaning of collaborative learning (as distinct from group learning in general) and then explore in detail what occurs within an ideal CI, using the lens of collaborative learning as a guide to that exploration.

What is collaborative learning?

Peters and Armstrong (1998) described collaborative learning (CL) as "people laboring together to construct knowledge" (p. 1). While there are different descriptions of CL (Bruffee, 1999; Hamilton, 1994) the Peters and Armstrong definition most closely fits the collaborative inquiry framework as will be shown below. In addition to being described as a concept about how people learn and make meaning of their experience, CL can also be described as one of three specific types of teaching and learning (Peters & Armstrong, 1998; Peters & Gray, 2005). I will deal with both of these levels of meanings in more detail, beginning with CL as one type of teaching and concluding with its role as a concept of how meaning is made within a group.

When most teachers hear the term collaborative learning, they intuitively understand that this means group work. Sometimes, they also believe the converse: that all group work must be collaborative learning. While the terms collaborative learning and cooperative learning are sometimes considered to be interchangeable (Kreijns, Kirschner & Jochems, 2003), a careful examination of group learning reveals that there are different qualities, intentions, and outcomes of such activities. There is a difference between cooperative learning and collaborative learning and they are both different from traditional lectures (Bruffee, 1999; Cranton, 1996; Flannery, 1994; Hamilton, 1994;

Paulus, 2005). Peters and Armstrong (1998) developed a simple typology to distinguish three types of teaching and learning as summarized in Table 2.1.

Within this framework, collaborative learning is a more dynamic and constructive form of learning than cooperative learning. As Ziegler, Paulus, and Woodside (2006) pointed out, cooperative learning is more about information sharing and results in "content knowledge" while collaborative learning involves "shared inquiry to construct their understanding of each other and their social worlds" (p. 3). Most critically, collaborative learning allows for the exploration of what the group learns in addition to what individuals learn while in a group (Peters and Armstrong, 1998; Peters and Gray,

Table 2.1
A Typology of Teaching and Learning (Peters and Armstrong, 1998)

Type One: Teaching by Transmission, Learning by Reception [Traditional Teaching]
Focus is on individual learning Relationships are between teacher and students The teacher is the primary source of information Lecture is the most common mode in this type
Type Two**:** Teaching by Transmission, Learning by Sharing [Cooperative Learning]
Focus is on individual learning, but sharing between students is expected Relationships are between teacher & students and students & students The teacher is primary source of information, but student experience is valued Lecture followed by discussion (perhaps in small groups) is most common mode
Type Three: Collaborative Learning
Focus is on individual *and* group learning Relationships are between members and between members and group All members jointly construct new knowledge

2005). It is this last distinction of CL as a type of teaching and learning within a group that establishes its role as a concept of how that meaning is made.

As a concept of meaning making, CL draws on the epistemic assumptions of social constructionism (Gergen,1999) and focuses on "creating new ways of going on together, individually and collectively" (Peters and Gray, 2005, p. 17). Collaborative learning involves four interacting elements: dialogical space, multiple ways of knowing, focus on construction, and cycles of reflection and action (Merrill, 2003; Peters & Gray, 2005). These four elements inter-relate and interact with each other in a dynamic feedback mechanism to create learning within the group and by the group. When placed in list form one may be tempted to think of these as separate and sequential, but they are not. As shown in Figure 2.2, a better way to think of these would be in the form of a Venn diagram in which all four elements overlap with each other. Each of these elements will be further explored below as a lens for understanding the context of collaborative inquiries for faculty development.

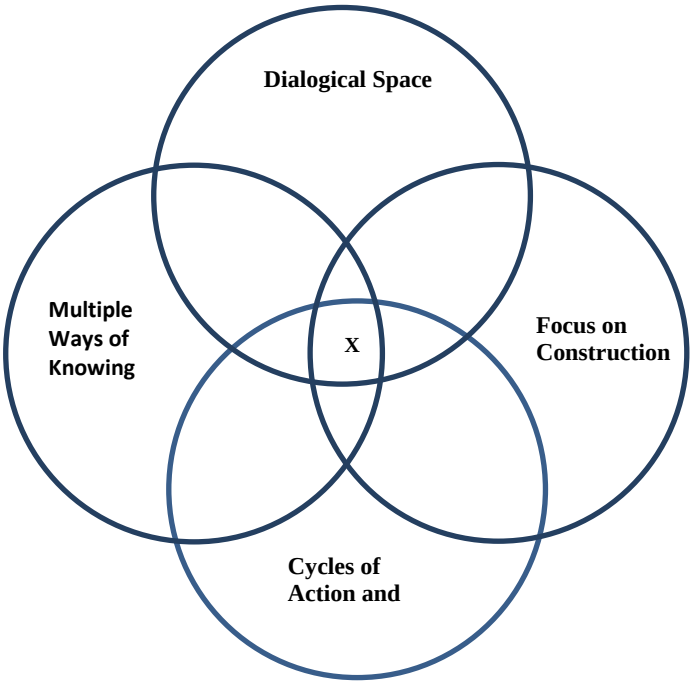

Figure 2.2 The Elements of Collaborative Learning

The elements of collaborative learning support collaborative inquiries.

In this section, I will more closely explore the literature on collaborative inquiries for faculty development using the four elements of CL as a lens for understanding them. Although the authors of these reports may not have been aware of the four elements as defined by Peters and Gray (2005), I will show how those elements operate as an ideal model for conducting a CI and understanding how participants construct knowledge within a CI. In addition to helping to understand CI in general, I used these four elements in the design of the CI that this dissertation studied.

As an overview, the elements of CL can be found within the conceptual descriptions of CI. Kasl and Yorks (2002), who derived their concepts from Heron and

Reason (2001), defined CI as small groups organizing themselves "in order to construct new meaning related to their question … engage in cycles of reflection and action [and] evoke multiple ways of knowing…" (2002, p. 3). They also describe the conditions of a CI as including "shared power" and "freedom from coercion" (p. 5) which relates closely to the element of dialogical space. I will explore each element of CL within the context of a collaborative faculty development project (CI) in the sub-sections that follow.

Dialogical space in collaborative inquiries.

As an element of CL, dialogical space incorporates two aspects. First, it means the establishment of the physical, emotional and social context in which dialogue takes place. Second, it means the process of conducting that dialogue and the products that result. I will deal with each of these two aspects in that order.

Collaborative inquiries create dialogical space by forming safe and mutually supportive groups of college professors. These groups are generally made up of peers who volunteer to work together in ways that share power, responsibility and decision making (Erklenz-Watts, Westbay, & Lynd-Balta, 2006; Goodnough, 2005; Kasl & Yorks, 2002). These groups are normally kept small (six to ten members) to maintain a sense of community and closeness (Cox, 2004; Hutchings, 1996; Lynd-Balta, Erklenz-Watts, Freeman, & Westbay, 2006). As the collaboration progresses, the participants become more comfortable with and trusting of each other and begin to produce a cohesiveness that produces the needed supportive environment (Creamer, 2005; Hubball et al., 2005; Louie et al., 2003).

While CL is a form of learning in which everyone labors together, that labor is not always equal. In some cases, a faculty development professional serves as the dialogue facilitator (Pill, 2005), while in others faculty members take turns facilitating (Erklenz-Watts, Westbay, & Lynd-Balta, 2006). In order to create and sustain cohesion, decisions on the division of labor need to occur early in the collaboration (Austin & Baldwin, 1991). Any tensions about "who should be doing what" could disrupt group cohesiveness and lessen the supporting environment. Another point is that the faculty evaluation and reward systems (i.e. tenure and promotion) need to value and honor collaboration in order to create and sustain a supporting environment (Creamer, 2005). That is, the creation of dialogical space is enhanced when the overall college culture values collaboration and community, which is also a focus of SOTL (Huber &Hutchings, 2006).

Once a supportive environment is created, dialogue may begin. While it is common in ordinary speech to use the word dialogue to mean conversation, for CL it has a more specific meaning. The term dialogue is derived from the Greek *dialogos,* which means "through words" (Bohm, 1996; Isaacs, 1999). Bohm suggests that dialogue creates "a stream of meaning flowing among us and through us … out of which emerges some new understanding" (1996, p. 6). In the same way, Creamer (2005, p. 88) describes how faculty collaboration leads to "new ideas or new ways of thinking". Alcantara et al. (2009) also note how "CI groups function as a form of generative social space" (p. 251) and thus serve as ways to generate new understanding. This new flow of meaning and understanding is central to the collaborative construction of new knowledge that will be elaborated below.

Dialogue, as proposed by Bohm (1996) and used within collaborative inquiries also involves a process known as suspension. Suspension deals with making participants' assumptions and prejudices explicit so that they can be thoroughly examined and perhaps adjusted as needed. Louie, Drevdahl, Purdy, and Stackman (2003) noted the need for researcher-teachers in a collaborative self-study to critically examine their beliefs and actions and to explore pedagogical questions. Fellow colleagues assist in this suspension by helping to recognize flaws in each other's thinking or interpretation while being both critical and supporting. The safe supporting environment allows for participants to open up more fully and more honestly, perhaps even being honest with their selves for the first time. It is within this honest, supportive environment that critical reflection can occur.

In a CI, professors dialogue with their peers in a supporting environment in order to more carefully examine their own and each other's assumptions about teaching and learning. While dialogue is essential to CL, collaboration is more than dialogue (John-Steiner, Weber & Minnis, 1998). The participating professors bring with them special knowledge, values, and skills, that are also essential to a CI. The next section deals with these multiple ways of knowing.

Multiple ways of knowing in collaborative inquiries.

Within a collaborative learning environment, Peters and Gray (2005) suggest that multiple ways of knowing (MWOK) is related to the work of Shotter (1993, 2005) in which he delineated three types of knowledge as "*knowing that, knowing how, and knowing from within"*(2005,p. 29). These terms refer to factual knowledge (that), procedural knowledge (how) and "knowing from within a living involvement" (2005. p.

29). This living involvement is created by the dialogue discussed above and refers to the way that we know things differently from within our relationships than we would ever know alone.

Kasl and Yorks (2002, p. 6; see also Reason & Heron, 2001) describe three similar ways of knowing within a collaborative inquiry as “practical” (how), “propositional” (that), and “experiential” (from within). They also include “presentational knowing”, which includes various ways of communicating (verbal, graphical, musical). For Kasl and Yorks, these multiple ways of knowing produce “whole person learning” (p. 6). This type of learning can impact our *way of being* in the world. That is, as we learn to recognize how we learn from our experience (our being) we learn to value that experience more and we learn to recognize the importance of the “others” in our experience. As Peters and Gray (2005) state, “this is something that people working together do in order to further their interests in going on together” (p. 17). Thus, as we are learning by group knowledge construction and by experience, we are also learning to behave differently within the group. This then, creates, Shotter’s (2005) concept of *knowing from within* the group.

For faculty development programs, MWOK is often noted in terms of the interdisciplinary nature of collaboration (Cox, 2004; Erklenz-Watts, Westbay, & Lynd-Balta, 2006; Latucca & Creamer, 2005). Working with other disciplines’ ways of knowing causes professors to “become reflective about their learning, as well as that of their students” and this promotes innovation in teaching (Latucca & Creamer, 2005, p. 8).

In addition to other disciplines' content, collaborators benefit from multiple research techniques (Louie et al., 2003) and possibly even different epistemologies. These multiple perspectives extend professors' research expertise while the structured framework enables improved teaching and answering of research question (Louie et al., 2003). This also leads to an understanding and possible implementation of alternate pedagogies (Raubenheimer & Myka, 2005).

Another aspect of MWOK is to recognize that all knowledge is not readily spoken nor even consciously thought. This tacit knowledge, however, can have a significant impact on our actions. As Schön (1983) points out, professionals working within their practice can often know that a particular process is somehow not right, but often we cannot articulate exactly what is wrong. That is, through experience, the professional has come to have a practical sense of their craft which Schön calls "knowing-in-action" (p. 54). Schön suggests that professionals within their practice often rely more on this tacit knowledge than on any formal knowledge they had learned in their training. While the formal knowledge often gets them started, "as a practice becomes more repetitive and routine … knowing-in-action becomes more tacit and spontaneous" (p. 61).

While experience based intrinsic knowing may help a professional work faster, it may cause the practitioner to "miss important opportunities to think about what he is doing" (Schön, 1983, p. 61). Such implicit knowledge may also be based on unexamined assumptions that may not be true (Brookfield, 2002; Mezirow, 1991). The supporting group within a CI can help faculty members make those implicit assumptions more explicit and thus subject to public scrutiny and possible change (Kasl & Yorks, 2002).

So, collaborative inquiries create a supported space for the exchange of multiple perspectives and ways of knowing. This dialogical exchange allows for the group to create new ways of knowing. This knowledge construction aspect of CI is explored next.

Focus on construction in collaborative inquiries.

As described above, the collaborative construction of knowledge is based on a socio-cultural approach to learning and the epistemology of social constructionism (Gergen, 1999). In describing faculty collaboration, Lattucca and Creamer (2005) asserted that "learners are active participants in their worlds" (p. 4) and that faculty member learning is situated within their practice. Thus practice-based learning is at the heart of collaborative faculty development.

But this is not simply *recipe-swapping* where faculty members share techniques for others to try (although that does happen also). Latucca and Creamer noted that "interdisciplinary collaboration is about learning and the co-construction of knowledge rather than about efficiencies in practice" (p. 1). As professors engage in dialogue on their practice and suspend their assumptions, they begin to see themselves and their practices in new ways. Kasl and Yorks (2002) stated that the purpose is to "create new knowledge drawn systematically from the life experiences of participants" (p. 4).

Wenger (1998) referred to "negotiated meaning" as the way in which groups find new ways to understand each other within their context and new ways to go on with each other (p. 54). Similarly, Hubball et al. (2005) stated that "social negotiations took place" within faculty development forums (p. 77). Goodnough (2005) described this process as attempting to "make sense of the experience and what we were learning" (p. 90). As I

point out during my faculty development workshops; nothing makes sense until we make sense of it. This process of making meaning from experience often requires reflection (Kreber & Cranton, 2005, McAlpine & Weston, 2000; Schön, 1983) in a process that will be explored in more detail below.

This new knowledge is not just for the participants, however. Faculty members in a collaborative inquiry "create a tangible product from their work in the form of teaching knowledge that is transferable to colleagues." (Louie et al., 2003, p. 151). While this new knowledge can be informative, it may also become transformative (Mezirow, 2000) and may result in a new way of understanding our actions. Either way, this new knowledge should improve our personal teaching practice. As this knowledge is shared, collaborative faculty development programs are able to fulfill the SOTL imperatives for increased understanding of the teaching and learning process and dissemination of this understanding. However, this knowledge is not created all at once in one sitting. It is created within the dialogical space over time and through cycles of action and reflection which will be further explored next.

Cycles of reflection and action in collaborative inquiries.

Collaborative inquiries involve professionals engaging in reflection in order to improve practice. In the collaborative professional development programs that I reviewed, reflection was sometimes described in the simpler terms of identifying problems and making corrections (Koch et al., 2002), but it was more generally considered a deeper professional activity (Cranton & Carusetta, 2004; Lattucca & Creamer, 2005). Reflection on practice implied internal changes in how one views their

practice (Pill, 2005). Deep reflection could not be done in isolation, but required social interaction (Erklenz-Watts et al., 2006; Hubball et al, 2005; Koch et al., 2002). Within this social interaction participants were able to make explicit their thoughts and assumptions (Pill, 2005) and "make sense of the experience" (Goodnough, 2005, p. 90).

As an element of collaborative learning, reflection does not occur in isolation, but instead it occurs within a cycle (Peters and Gray, 2005). This cycle starts with action as there must be an experience to reflect on. If we collaboratively reflect on our actions, then we can enter into dialogue and suspend and analyze the assumptions underlying our actions (Merrill, 2003). Further reflection allows us to be more relational within our practice and thus produce more authentic change (Cranton & Carusetta, 2004). Osterman and Kottkamp (2004) also highlight the cyclical nature of reflective practice and they note, it's a "way for educators to search for ever-improved ways to facilitate student learning" (p. 1). Mills (2003) also describes cycles of reflection and action as the "action research interacting spiral" model of action research for educators (p. 18). In addition to cycles of action and reflection, the reflection process itself can be further explored within a CI as a form or reflective practice.

Reflective practice. The concept of "reflective practice" stems from the work of Schön (1983, 1987) in which he delineated *reflection-on-action* (which occurs after an experience) from *reflection-in-action* (which occurs during an experience). Professionals use the former to consider improvements to their practice, and use the latter to respond to situations as they arise. For Schön, experienced professionals were adept at reflecting-in-action and could make improvements on the spot rather than simply responding in some

pre-determined way. A reflective practitioner "allows himself to experience surprise, puzzlement, or confusion" (1983, p. 68) and treats the unique situation as a research opportunity. Schön emphasized the fact that this sort of reflection was based on the *experience* of the professional as opposed to some learned theory that could be applied to the situation. McAlpine, Frew and Lucas (1991) extended this concept to *reflection-for-action* in which experts use their experience to plan for practice (p. 68). McAlpine and Weston (2000) noted that college professors use all three types of reflection (in, on, and for action) and that reflection-for-action differed from planning based on the fact that planning did not necessarily require any experience. Schön (1983, 1987) further suggested a multi-level reflection process in which the practitioner reflected on their implicit reflections. Schön called this "reflection on reflection-in-action" (1983, p. 126).

The requirement for experience in practice before reflection is also noted by Jarvis (1999). Jarvis asserted that professionals not only apply theory to practice, but also derive their own "personal theories" from their practice (p. 131). Peters (2002) makes a similar point in his model of action research in which action researchers develop their own practical theories on how to improve their practice. When college professors reflect on their practice and develop their own practical theories to improve it they are implementing Boyer's four scholarships. That is, as professors research their own practice (*inquiry*) as *teachers* and develop and publish their interpretations (*synthesis)* of that research they help others improve their practices as well *(application*).

Drawing from the work of Schön (1983, 1987), Osterman and Kottkamp (2004) developed a reflective practice model for faculty development. In that model, they

suggested that teachers followed two possible forms of "personal action theories" in their daily activities: "espoused theories" and "theories-in-use" (p. 9). Espoused theories are those ideas that teachers can easily state and are related to the domains of pedagogical knowledge listed in the section on SOTL above. Theories-in-use, on the other hand are the implicit, rarely examined concepts that arise from our experience. These are based on experience based "knowing-in-action" that results from repetition and is typically highly tacit and spontaneous (Schön, 1983 p. 61). Of the two theories, Osterman and Kottcamp asserted that it is our theories-in-use that "directly, persistently, and consistently influence our behavior" (p. 10). They point out that although a teacher's "espoused theories may change, these changes will not necessarily lead to changes in behavior" (p. 9). Thus, a faculty member can attend a workshop on a new teaching technique and be eager to try it, but when they return to their classroom, their unexamined theories-in-use take over and they teach the way they have always taught. This is the essence of my concept of academic inertia described in chapter one. Osterman and Kottkamp (2004) suggested that training faculty members to become more reflective on their action and improving their reflection-in-action is the way to overcome this inertia and creating real change in education. In addition to the general concept of reflective practice, the literature on faculty development suggests several specific domains of knowledge that can be reflected upon as part of a collaborative inquiry. These domains of faculty reflection will be explored next.

Domains of reflection. McAlpine and Weston (2000) studied reflection as it related to faculty development and identified three spheres of reflection as practical,

strategic and epistemic. In their view, practical reflection involved improving actions within a particular class, while strategic reflection involved reflection on generalized knowledge of teaching and learning. For McAlpine and Weston, epistemic reflection involves increasing cognitive awareness of one's own reflections and an examining of one's assumptions. In a similar way, Kreber and Cranton (2000) suggested that faculty members may reflect at three different levels (content, process and premise) with first level focused on problem solving and the last level focused on examining assumptions. Examining one's assumptions is a more critical form of reflection as will be explored in the next section after a brief summary of the literature review to this point.

A summary of the literature review to this point.

As I suggested at the beginning of this chapter, the theoretical frameworks of SOTL and CI converge on their emphasis on collaboration and reflection as necessary for substantive faculty development. I used the four elements of the Peters and Gray (2005) model of collaborative learning as a lens to explore what happens within a CI. The four elements combine and interact to create an ideal model for a successful CI. Although the CI framework includes cycles of action and reflection and dialogical space to support reflection, there are different forms and levels of reflection that need to be further explored in order to understand the full potential of CI for faculty development. The next section explores the critical reflections that occur within a CI and connects these reflections to the concept of transformative learning (Mezirow, 1991, 2000).

Supporting Critical Reflection and Transformative Learning

Since new faculty members do not normally receive training in pedagogy, they often adopt teaching strategies that they have never examined critically (Brookfield, 2002). Faculty members engaged in a CI are adult learners and their reflections my lead to transformative learning (Cranton & Carusetta, 2004), so it is critical to understand the theoretical framework of TL in order to understand how reflection can lead to change. During transformative learning, we don't just add to what we know, we change how we perceive and interpret our experiences. This transformation typically requires that we critically reflect on our assumptions (Brookfield, 2000, Cranton & Carusetta, 2004; Mezirow, 1999, 2000). As we make our assumptions more explicit, we are able to question them and validate (or perhaps reject) them and that ultimately gives us more control of our lives and teaching practices (Mezirow, 2000).

As described in the discussion of reflective practice above, experience is often the driving factor for instructional decision making and is the basis for reflection (Kreber, 2005b). Typically this involves an encounter with "something unexpected" (Cranton & Carusetta, 2004, p. 7) or a "disorienting dilemma" (Mezirow, 2000, p. 22) that does not fit with our previously held beliefs. As professors encounter these situations, they must critically examine their own teaching as well as the institutional norms they find themselves operating within (Cranton & Carusetta, 2004)

Brookfield (2002) suggests that "A critically reflective stance … can help teachers feel more confident that their judgments are informed and leave them with energy and intent to do good work" (Brookfield, 2002, p. 31). This extra energy and re-

focused intent is often just what is needed to overcome academic inertia. Thus critical reflection is essential to faculty development and it is central to transformative learning theory, which will be explored next.

What is transformative learning?

Because transformative learning (TL) is central to the understanding of adult learning, it is important to explore what TL is. This section will begin with a brief historical overview of transformative learning theory and will then explore the elements of TL. I will end this section by making specific connections between TL and collaborative inquires. After that, I will explore the empirical studies related to critical reflection and faculty development.

History of transformative learning theory.

Mezirow (2009) described how the concept of transformative learning is firmly rooted in the field of adult education and how it emerged from his 1978 study of women returning to higher education. Using a grounded theory approach, Mezirow was able to develop a concept of adult learning based on a "disorienting dilemma" being followed by several processes including "self-examination and assessment of assumptions" and ending with a "reintegration into one's life on the basis of conditions dictated by one's new perspective." (Mezirow, 2009, p. 19). Based on that initial work, Mezirow and others elaborated on these processes and developed ways of "fostering critical reflection in adulthood" (Mezirow & Associates, 1990. p. i). Mezirow consolidated his views by publishing his seminal work *Transformative Dimensions of Adult Learning* (1991) and then worked with others to create a larger view of the theory (Mezirow & Associates,

2000). As Taylor (2009) noted, transformative learning theory has been continuously researched within the field of adult education, but more recently within the fields of higher and continuing education also. The result of this continuous and expanding research is that "transformative learning has become the dominant paradigm discussed within the field of adult education" (Mezirow & Taylor, 2009, p. xi).

Overview of transformative learning.

Transformative learning theory "explains how adult learners make sense or meaning of their experiences…." (Mezirow, 1991, p. xii). Learning involves combining existing interpretations and new experiences to either revise those interpretations or create new ones. The function of these interpretations is to guide action. These interpretations form "frames of reference" which include expectations and implicit assumptions that influence not only actions, but also beliefs (Taylor, 2009, p.5). Thus *learning* is about creating and using frames of reference to understand our experience. *Transformative* learning is the process by which we transform our frames of reference "… to make them more inclusive, discriminating, open, emotionally capable of change, and reflective." (Mezirow, 2000, p. 8). Thus transformative learning involves not just adding to our frames of reference, but fundamentally changing them.

Mezirow (1991) suggested that our frames of reference can be seen at two levels. "Meaning perspectives" are the large order sets of assumptions within which one's past experience are used to make sense of new experiences (p.42) while "meaning schemes" are more finite and function to focus our attention and perception (p. 50). Specific meaning schemes function within our meaning perspectives and guide our expectations

about a given situation based on previous experience. So meaning perspectives are the framework for making meaning of new experiences and they include sets of meaning schemes. Changes in meaning schemes and perspectives are the basis of learning, which Mezirow (1991) suggested can occur in four ways. We can learn by (a) connecting new experiences to existing schemes, (b) using that experience to change existing schemes, (c) creating new schemes, or (d) changing the higher level perspectives within which these schemes exist. Generally, the new experience that leads to learning poses some form of problem.

In addition to these four ways of learning, Mezirow (1991) described three domains of adult learning as instrumental, communicative and emancipatory. Instrumental learning is focused on "learning to control and manipulate the environment" which includes other people (p. 73). From a problem solving perspective, instrumental learning involves trying new meaning schemes in a cause-effect way. This sort of learning would include discovering how gravity works or how touching something hot causes pain.

Communicative learning involves "learning to understand what others mean and to make ourselves understood" (p. 75). Mezirow (1991) noted that this sort of problem required "validity testing" which involves reaching consensus with others through discourse. That is, because we cannot test the validity of communicative processes through cause-effect experimentation, we must test the validity through consensus building. In these first two domains, learning involves reflection on meaning schemes.

The third domain, emancipatory learning, uses reflection "to identify and challenge distorted meaning perspectives." (Mezirow, 1991, p. 87). For Mezirow reflection on the meaning perspectives is considered critical reflection. Critical reflection involves examining the assumptions on which our meaning perspectives are built. Distorted meaning perspectives in this view refer to assumptions that limit our ability to function within our new experiences. Because not all learning is reflective and only certain forms of reflection are critical, Mezirow's transformative learning theory emphasizes various levels of activity from non-reflection to critical reflection.

Levels of Reflection.

Mezirow (1991) asserted that "Reflection is the central dynamic in intentional learning, problem solving, and validity testing through rational discourse" (p. 99). But for Mezirow, only actions involving validity testing can be considered reflection. Mezirow noted that not all cognitive functions are reflective and described three non-reflective actions as habitual action, thoughtful action, and introspection. *Habitual action* involves activities that may have required focus while learning them, but that we can now perform while focusing on something else. Walking, riding a bicycle, and typing are examples of habitual action. *Thoughtful action* does require our focus. However, for Mezirow, thoughtful action involves thinking based on prior learning, but not creating new ways of understanding. Solving math problems would be an example of thoughtful action. *Introspection* "refers to thinking about ourselves, our thoughts or feelings" (p. 107), but does not involve validity testing and thus is also nonreflective by Mezirow's standards.

For Mezirow (1991), reflection is the "process of critically assessing the content, process or premise of our efforts to interpret and give meaning to an experience" (p. 104). Content reflection focuses on the "content or description of the problem", while process reflection focuses on "the strategies and the procedures for solving the problem" (p. 104). Process reflection also focuses on the "adequacy of our efforts" or on the result or product of our attempt to solve the problem.

Content and process reflection results in changes to meaning scheme while premise reflection results in changes to meaning perspectives. Change in this view includes reinforcing, confirming, and elaborating our perspectives as well as possibly negating or transforming them. That is, premise level reflections do not require that we abandon our belief systems, only that we examine them and are open to changing them if need be.

To put these six levels in perspective, imagine a flow of events occurring as a person lives their life. As long as the situation is within their normal settings, they may perform many functions without any need to think about them (habitual action). Some minor problems may arise that require thought but are within the realm of what they have encountered before and thus will not require reflection (thoughtful action and introspection). If they encounter some disorienting dilemma that cannot be solved within their existing meaning schemes, they begin to reflect on the content of the problem within existing meaning schemes. Based on this they may try various actions to solve the problem and then reflect on how well those actions worked (process reflection). If the seriousness of the disorienting dilemma is sufficient, they may need to reflect on the

underlying assumptions or premises, resulting in potentially changing their meaning perspectives. Thus the seriousness of the encountered problem establishes a flow of responses that move along the levels of non-reflection and reflection until they are solved. However, reflection on assumptions is only the beginning of transformative learning.

In addition to reflection, there are other steps of TL that must occur. Mezirow (1991) listed ten steps in the overall transformative learning process as follows: (1) disorienting dilemma, (2) self-examination, (3) critical reflection on assumptions, (4) recognizing that one's discontent is shared with others, (5) exploring options for new roles, (6) planning a course of action, (7) acquiring knowledge and skills, (8) trying on of new roles, (9) building competence in the new roles, and (10) re-integrating into one's life based on the new perspectives. Mezirow (1991, 2000) suggested that individuals undergoing transformation needed help in working through these ten steps and that the role of educators was to help foster this transformation.

Taylor (2009) noted that there were six core elements required for fostering TL: (a) individual experience, (b) promoting critical reflection, (c) dialogue, (d) holistic orientation, (e) awareness of context, and (f) authentic relationships (pp. 5-14). All of these are seen within a collaborative inquiry as follows. Individual experience relates to multiple ways of knowing and the fact that each individual participant brings their own unique perspective to the setting. Authentic relationships and dialogue relate to dialogical space as they are used to create the supporting environment that supports and promotes critical reflection. The holistic orientation and awareness of context are related to the fact

that collaborative inquiries are conducted within the context of the participants practice and that the result in overall improvements. In addition to these general connections between TL and CI, there are important connections between TL and reflective practice which will be described below. But first, I need to explore certain criticisms of Mezirow's view of reflection and TL.

Criticisms of Mezirow's rational view of reflection and transformative learning.

Although Mezirow's views on rational reflection form the predominate view of TL, they are not without criticism (Mezirow, 2009; Taylor, 2009). The strongest criticism is that Mezirow's emphasis on rational discourse and reflection ignores the emotional (affective) and social aspects of transformative learning (Mezirow, 2009). That is, the step-wise flow of reflection described above seems to over-emphasize logical and rational analysis while ignoring the role of emotions in transforming meaning perspectives and making sense of one's self in the world. Dirkx, Mezirow, and Cranton (2006) addressed these criticisms directly in the form of a point-counterpoint dialogue. Within that dialogue, Dirkx emphasized the need for understanding the affective and subjective aspects of TL while Mezirow acknowledged that need but emphasized that the outcome of TL required an examination of assumptions related to those emotions. Cranton concluded that "the two approaches were complementary rather than contradictory" (Dirkx et al., 2006, p. 137). Thus, although there are other aspects of TL, the levels of reflection described above remain central to creating the changes needed to improve practice. In the next section, I will more closely explore the relationships between reflective practice and transformation.

Transformative learning and reflective practice.

Schön's (1983) concept of reflective practice described how professionals use reflection to improve their practice. He delineated reflection based on timing and described reflection-in-action as an 'in the moment' process that is often tacit or implicit but that can be made to be explicit. Reflection-on-action occurs after an action and is retrospective, but it is much more explicit. While Schön described different types of reflection based on their timing with respect to the action, Mezirow delineated different levels of reflection based on the assumptions being examined. Mezirow (1991) compared his work to Schön (1983) and noted that reflection-in-action can only be performed as reflection on the content of a problem or on the process of solving that problem. Mezirow asserted that premise level reflection can only be performed as reflection-on-action.

Returning to the realm of reflection and transformative learning for faculty development, we see that faculty members often must reflect on problems that occur within their practice. Some new experiences (such as trying a new teaching method) may serve as a disorienting dilemma. Approaching that dilemma in a reflective manner involves reflecting on how that new method creates a problem (content/problem level) and how that problem could be solved (process level). This sort of reflection could occur within the moment as the faculty member is teaching (reflection-in-action) or later as reflection-on-action. If the faculty member focuses reflection on their previous reflection-in-action they can develop a keener sense of their own theories-in-use and

become even more adept at reflection-in-action (Schön 1983). The section below will explore empirical studies of these varying forms of reflection.

Empirical Studies of Reflection

This section will take a closer look at reflection as it has been empirically studied. While the focus will be on studies of reflection by college faculty, due to the scarcity of such studies, I will also look at a few studies of reflection by college students that are critical to understanding levels of reflection. I will first explore a related set of studies that looked at the process of reflection-in-action by faculty members. I will then explore a few studies that focused on indicators of the levels of reflection gleaned from interviews and will then explore studies that looked at levels of reflection as they occurred in an online environment.

Faculty reflection as it occurs.

McAlpine, Weston, Beauchamp, Wiseman, & Beauchamp (1999) provided an initial report on a detailed study of the reflective process of six college math instructors before, during and after their teaching. McAlpine and Weston (2000) provided a more in depth report and evaluation of this study. The aim of this qualitative study was to operationalize the construct of reflection and develop "an empirical model which represents how reflection operates as a metacognitive process for evaluating and improving teaching." (p. 364). McAlpine and Weston drew on Schön's (1983) conception of reflective practice (as described above) to create a coding scheme for noting the various types of reflection and how instructors modified their teaching based on this reflection.

McAlpine and Weston (2000) noted that this study followed “exemplary” math professors because they were more likely to exhibit best practices and be able to explain their metacognitive processes (p. 366). The researchers interviewed these teachers at the beginning and the end of a semester and also before and after several specific lectures. They also videotaped the lectures. As part of the after interview, instructors were shown videos of their teaching and asked about specific teaching decisions made within the moment of teaching. In that way the researchers were able to capture not only *reflection-on-action*, but also *reflection-in-action* and by way of the pre-teaching interviews, *reflection-for-action.*

Based on this study, McAlpine and Weston (2000) developed a cyclic model for teacher reflection that included four phases: action, monitoring, knowledge, and decision making. The initial action is based on previous teacher experience and the goals for that teaching session. As the teaching unfolds, teachers monitor the process (reflection-in-action) and look for specific cues about what is occurring. The most commonly cited cue was student responses (70% of all cues noted). These cues are compared to existing teacher knowledge and decisions are made to modify teaching. These modification decisions may occur within the class session (using *reflection-in-action* to change ongoing action) or they may be used after the class session to modify future teaching (*reflection-for-action*). Also, *reflection-on-action* can be used to modify the teacher’s knowledge. This study found that 65% of the teaching modifications occurred *during* the class session.

Another interesting aspect of this study was that teachers reflected differently on the four domains of teacher knowledge (as described in the section on SOTL above). Participants in this study reflected mostly on pedagogical knowledge (34%) and learner knowledge (20%) with very little reflection on pedagogical content knowledge or content knowledge (percentages not reported). This lack of reflection on content implied that exemplary professors were very confident with their subject matter.

In a follow-up study, McAlpine, Weston, Bethiaume, Fairbank-Roch and Owen (2004) used a similar method of pre-and post- teaching interviews and coding analysis to study six faculty members from several different disciplines. Although three of these participants were exemplary experienced faculty and the other three were pre-tenure, this report did not make any distinctions in these two groups' reflective practices. McAlpine et al (2004) reported on the frequency of different spheres of reflection, showing that practical reflection occurred most often (90%), while strategic (7.6%) and epistemic (2.3%) reflection occurred least often. Although this typology is not perfectly aligned with TL, there is some degree of similarity and this report agrees with Mezirow's assertion that the higher levels of reflection (epistemic in this case) occurs least often.

These studies provided critical insights related to this dissertation. First, they explored the concept of reflective practice in general. Second, they made a direct connection between faculty reflection and changes in teaching. Third, they demonstrated the ability to distinguish different types of reflection as they occur. This last point is most critical because this dissertation will study different levels of faculty reflection.

Empirical studies of levels of reflection suggested by Mezirow (1991) and Kreber and Cranton's (2000) SofT model of reflection will be explored next.

Levels of reflection in portfolios: the SofT model

As described in the section on SOTL above, Kreber and Cranton (2000) created the SofT model of reflection as a conception of how faculty members might demonstrate faculty development within a portfolio format. That model suggested that faculty members could reflect within three domains of knowledge (instructional, pedagogical and curricular). They applied Mezirow's theory of transformative learning (1991) and noted that reflection can occur at three levels: content reflection, process reflection and premise reflection. When applied across each other, the three domains and three levels create nine dimensions of reflection (3 levels across 3 domains). This model can be visualized as a set of three concentric circles, each one divided into three equal wedges with each wedge being a domain and each concentric circle being a level of reflection with content on the outer most layer, followed by process and ending with premise level reflection in the center. While their initial work was conceptual in that "the indicators are actions that faculty *may* take …" (2000, p. 487, emphasis mine), the SofT model has been empirically tested twice as will be described next.

Kreber (2005b) applied the SofT model of reflection to 36 college instructors from a variety of disciplines. Although she claimed to "focus on science instructors" (p. 323), her participants included psychology, math and computer instructors as well as biology, chemistry, and physics instructors. Kreber used semi-structured interviews and asked instructors to describe activities they had done over the past semester that might

indicate reflection within each of the nine dimensions. For each participant, she noted whether they said that they reflected at that level and whether they provided an indicator that they reflected at that level. While nearly every participant stated that they reflected to some degree within each dimension, a smaller number could actually provide an indicator of such reflection. As summarized in Table 2.2, Kreber recorded whether participants could provide an indicator, but she did not attempt to count the total indicators given. Thus, there was no distinction between whether the participant gave one or several indicators. She also suggested that simply discussing the domain of knowledge constituted an indicator of content level reflection and thus every participant had reflected at the content level for each knowledge domain. Overall, 46 % of the participants provided indicators for process level reflection, but only 15% provided indicators for premise level reflections.

Kreber (2005b) concluded that the higher levels of reflection occurred least often and that participants reflected less overall within the domain of curricular knowledge. This latter aspect makes sense in light of the fact that most college faculty focus on their

Table 2.2
Indicators of Reflection by Level and Domain (Kreber, 2005b)

Level	Instructional knowledge	Pedagogical knowledge	Curricular knowledge	Total	Percent at Each level	Percent of total by level*
Content	36	36	36	108	100	57
Process	25	28	9	62	46	33
Premise	10	5	4	19	15	10
	71	69	49	189		

*This percentage compares each level to the 189 total indicators provided.

teaching methods more than the overall curriculum. She also suggested that the process of reflection be further studied and that "future research to identify further indicators of reflection is encouraged." (p. 352). Appendix 2 contains a summary of the indicators of reflection as proposed by Kreber and Cranton (2000) and further refined by Kreber (2005b).

As a follow-up to Kreber (2005b), Kreber and Castleden (2009) applied the SofT model of reflection to 40 college instructors organized into two groups based on their discipline. The "pure/hard" group included 30 faculty members from science and mathematics disciplines while the "pure/soft" group included 10 faculty members from English and philosophy (p. 509). The two groups were "categorized in terms of their epistemological structure" in which the disciplines were compared as "pure versus applied and hard versus soft" (p. 509). The participants were interviewed about their teaching over the previous semester and their responses were reported as either showing an indicator of reflection or not. In this case the results of these interviews were listed as percentages which are summarized in Table 2.3. In addition, this research project analyzed the specific indicators of reflection provided by the participants and organized them by discipline group and by source. The sources in this case were either experience-based or research-based. Kreber and Castleden (2009) noted that the pure/soft group had more overall indicators and a wider variety of indicators of reflection compared to the pure/hard. They suggested that the greatest difference between these two groups was in the domain of curricular knowledge where "process and premise level reflections were rarely observed among the pure/hard group" but that "most academics from the pure/soft

fields could provide an indicator" (2009, p. 520). From that note, they concluded that faculty members from pure/soft disciplines probably may focus more on the educational goals related to curriculum while faculty members from pure/hard disciplines may focus more on the need for students to learn the facts of the subject. The also suggested that "in order to promote reflection on teaching among academics, educational development activities should intentionally encourage dialogue and target specific reflective processes" (p. 528).

In summary of the reflection studies related to the SofT model, there are several critical points to be made about the indicators of reflection. First, it is impressive that many of the indicators that Kreber and Cranton (2000) developed theoretically were seen in the empirical studies. While each empirical study added other indicators, there is a considerable amount of commonality among them. However, the fact that the indicators were based on past activities that participants were having to recall created two concerns: (a) because they are past activities they do not capture reflection as it occurs and (b) they are based on recall and thus subject to the vagaries of participant memories. As Kreber (2005b) pointed out, this recall process is somewhat problematic because faculty

Table 2.3
Indicators of Reflection by Level and Domain (Kreber & Castleden, 2009)

Level	Instructional Knowledge Soft/Hard	Pedagogical Knowledge Soft/Hard	Curricular Knowledge Soft/Hard	Percent at Each level Soft/Hard	Percent of Total by level*
Content	100/100	100/100	100/100	100/100	40/58
Process	90/70	100/77	80/20	90/56	36/21
Premise	80/30	40/13	60/10	60/18	24/11

*This percentage compares each level to total number of indicators.

members may be reflecting, but just not able to recall a specific indicator of that reflection.

A third critical point is that the indicators are not uniformly at the same level of detail. Some of the indicators seem very precise while others are too broadly defined. For example, “sharing why certain approaches work at teaching-related conferences” is considered process-level reflection while “challenging or critiquing some published literature on teaching” is considered to be premise level reflection (Kreber & Castleden, 2009, p. 521). There is a clear and precise difference between reporting results (process level) and critiquing others (premise level). As an example of less precise indicators: “participating in educational development workshops” is considered an experience-based indicator of content level reflection on instruction, but “attending seminars and workshops on how to teach at teaching conferences” is considered a research-based indicator of the same dimension (Kreber & Castleden, 2009, p. 519). The categorization of these two indicators seems to assume that local workshops cannot present research findings nor can they stimulate any reflection above the content level. Moreover, attending a conference is a very broad activity that likely involves reflection on multiple domains of knowledge and possibly at different levels, but this list of indicators places this activity in only one dimension.

The fourth critical point is that the division of indicators by domain creates an artificial distinction that might make these indicators difficult to apply in other settings. For example “collecting feedback from students on approaches used” is considered process reflection within the instructional domain, while “paying attention in class to

reactions from students" is considered process level reflection in the pedagogical domain (Kreber, 2005, p.339). Also, as described above, "attending a conference" may impact multiple domains. While there may be value in considering these domains separately, they have a fair degree of overlap. It seems particularly difficult to separate instructional knowledge from pedagogical knowledge. Indeed, the concept of scholarship of teaching *and* learning indicates that these two concepts are closely interconnected.

I found several findings from these studies to be of particular value for this dissertation. First, there is a need for faculty development projects to specifically encourage faculty reflection as part of their overall development. Second, although faculty members may reflect on research-based theoretical literature, they tend to reflect more on experience. Third, the concept that there are indicators of reflection at different levels suggests that these indicators may be identified and distinguished within reflective writing. While that identification has not been studied within the context of college professors, it has been studied within the context of students in undergraduate courses as the next section will explore.

Mezirow's levels of reflection in undergraduate writing.

Kember et al. (1999) applied Mezirow's (1991) concepts of reflection to the writing of undergraduate students within health related courses (nursing, occupational therapy). They developed a coding scheme based on seven levels of reflection and used "text segments" of several related sentences as the unit of analysis (Kember et al., 1999, p. 25). The coding scheme underwent five trial rounds to achieve an agreement on definitions between the eight initial raters. After that, four raters used the coding scheme

to evaluate reflective papers written by nine students and inter-rate reliability tests indicated that the scheme was "acceptable." (Kember et al., 1999, p. 28). However, that study did not report how many reflections were coded at each level. Because it lacks these details, this study is of little value to this dissertation in an empirical sense. However, it has value as a conceptualization of Mezirow's transformative learning theory into identifiable levels of reflection which I will explore next.

Kember et al. (1999) identified seven levels of reflection as (1) habitual action, (2) introspection, (3) thoughtful action, (4) content reflection, (5) process reflection, (6) content and process reflection, and (7) premise reflection. These levels followed Mezriow's (1990) work as discussed above. Kember et al. (1999) noted that the first three levels fell into the category of non-reflection, while only level 7 could be considered critical reflection. In later work (Kember et al., 2000; Kember, McKay, Sinclair, and Wong, 2008) the seven levels were modified to four levels of reflection as (1) habitual action, (2) understanding, (3) reflection, and (4) critical reflection. In this simplified scheme, content and process level reflections were combined in level 3, while premise level reflection remained at the highest level (4). Thoughtful action and introspection were combined into level 2 (understanding) which involved students understanding a concept without being able to apply it to their own experience. In both of these later studies, the unit of analysis was the entire reflective paper and the level of reflection was coded based on the highest level noted.

While Kember et al. (2000) and Kember et al. (2008) were empirical studies; their focus on undergraduate students and their lack of reporting on the occurrence of

individual levels of reflection make a detailed analysis of their methodology of little importance to this dissertation. However, their work does confirm that Mezirow's levels of reflection can be identified within written work. This implies these levels of reflection can be identified within a faculty development project and they could then be indicators that transformative learning is occurring. Because this dissertation involves reflection within the online environment, the next section explores the study of online levels of reflection.

Levels of reflection in online venues.

While no previous studies have looked at online levels of reflection by faculty members, studies have examined online reflections by college students. Because these studies help illuminate the nature of online reflection, they are useful to this dissertation. As a limiting factor, I chose to review the three studies that specifically explored *levels* of online reflection in relation to a blended learning experience. Boyer, Maher and Kirkman (2006) examined online discussions from the perspective of transformative learning (Mezirow, 1991, 2000) while Lord and Lomicka (2007) and Whipp (2003) examined reflective journaling from the perspective of four levels of reflective writing (Hatton & Smith, 1995). I will review each of these in turn.

Boyer et al. (2006) applied transformative learning theory (Mezirow, 1991, 2000) to their examination of online discussion forums involving 59 graduate students in several sections of a required educational technology course. While that course was conducted mostly on-line, it was blended because it involved a seven hour face-to-face orientation and a three hour face-to-face end-of-course review. Boyer et al. used a mixed

quantitative-qualitative approach in which they operationalized Mezirow's (1991, 2000) four stages of TL and then searched for evidence of each within the on-line reflective activity. The course required the students to regularly participate in on-line discussions and on four occasions they were to stop and reflect on specific questions about their experience. Boyer et al. described transformative learning as having four stages: "a disorienting dilemma, critical reflection, validating discourse and reflective action" (2006, p. 341). Critical reflection was coded by a rubric containing three levels of reflection as: "Level 1 (little), Level 2 (somewhat), and Level 3 (a great deal)" based on the "depth or extent of reflection" (p. 344). Based on these criteria, 20% of the participants had completed a full TL "cycle" (all four stages) and the levels of reflection occurred as follows: level 1: 14%, level 2: 69%, level 3: 17%. That is, the majority of the reflections were at the middle level.

Based on their findings, Boyer et al. (2006) concluded that "evidence of transformative learning can be found through methodological content analysis of reflective comments of the students" in a blended course. (p. 350). That is, they confirmed the possibility that there are indicators of reflection and transformative learning that are identifiable within the online postings. However, they only distinguished the levels of reflection as occurring within the vague terms of "a little, somewhat, or a great deal". This was a disappointing aspect of their work and points to the need to examine the levels of online reflection more closely, which the two studies below were able to do.

In order to understand the next two empirical studies, it is important to understand the model of reflection that they followed. The reflective writing model (Hatton & Smith, 1995) described five levels of reflection as being unreflective descriptive, reflective descriptive, dialogic reflection, critical reflection, and contextualized reflection. Table 2.4 provides a brief description of each of these five levels. Hatton and Smith suggested that their first four levels are associated with reflection-on-action, while their fifth level occurs during reflection-in-action (Schön, 1983, 1987). Hatton and Smith argue that reflective writing would only show the first four levels of reflection because contextualized reflection can only occur during reflection-in-action. However, as will be shown below, Lord and Lomicka (2007) found evidence of the fourth level in student journals.

Whipp (2003) focused on the first four levels of the Hatton and Smith (1995) model while analyzing e-mail discussions by undergraduate students in a teacher education program. The e-mail messages were used in addition to the face-to-face class meetings, making this a form of blended learning. Whipp used prompting questions as a

Table 2.4
Levels of Reflective Writing (Hatton & Smith, 1995)

Level of Reflection	Description
Unreflective descriptive	Describing events without reasons or justification
Descriptive reflection	Describing events and providing reasons, either from personal opinion or from other perspectives
Dialogic reflection	Stepping back, Mulling about, discourse with self, using judgments and possible alternatives
Critical reflection	Sophisticated reflection, taking account of multiple perspectives and the social and political context
Contextualized reflection	Reflection-in-action [Not seen in reflective writing because it occurs within the action, not in the writing]

scaffolding technique to foster critical reflection by her students in response to their teaching internships. She conducted two iterations of analysis and compared the results as she worked to improve her scaffolding techniques. The first iteration occurred during spring semester of 1997 and included 23 students while the second iteration occurred during the following fall semester and included 17 students. As shown in Table 2.5, Whipp determined that critical reflection occurred the least often in both iterations but that student reflections became more critical within the second semester's iteration. From this work she concluded that there is a "need for powerful scaffolds for reflection in an electronic environment" (Whipp, 2003, p. 322). In addition, her work showed that the skill of facilitating online reflections tends to increases with facilitator experience.

Lord and Lomicka (2007) focused on the last four levels of the Hatton and Smith (1995) model of reflection as they examined undergraduate education students in three student groups reflecting in different venues. One group consisted of four students that wrote their journals individually in a word processor and submitted them for only the teacher to read, while the second group consisted of two pairs of students that shared their journals with each other. The third group consisted of six students that collaboratively

Table 2.5
Online Levels of Reflection (Whipp, 2003)

Level of Reflection	Spring (n = 23)	Fall (n =17)
Unreflective descriptive	44%	15%
Descriptive reflection	43%	46%
Dialogic reflection	11%	28%
Critical reflection	1%	11%
Contextualized reflection	NA	NA
Total Reflections	148	108

shared their journals within an asynchronous discussion board. For the second two groups, Lord and Lomicka created three coding levels of reflection in addition to the levels of Hatton and Smith. These additional levels were: (a) community building which was defined as "showing solidarity", (b) encouragement/praise, and (c) suggestions/ advice (Lord & Lomicka, 2007, p. 521). They also noted that these additional levels were needed in order to "establish social presence" (p. 526). The results of their analysis of these levels of reflection are shown in Table 2.6. One interesting note is that Lord and Lomicka chose to use the contextual reflection level in the analysis of journals even though Hatton and Smith had suggested that contextualized reflection only occurs during reflection-in-action.

As the data in Table 2.6 indicate, Lord and Lomicka found that there were important differences in relative occurrences of the levels of reflection within the various venues. Most notably, they found that the paired reflection group and the discussion board group had a larger total number of reflections than the lone reflection group. They also noted that the relatively high percentage of critical reflections within the lone group was primarily the result of one particular student while the discussion board group had a more even distribution of their reflections. From this, they concluded that the collaborative online environment facilitated more reflection by the students and that the social presence aspects helped to create a supportive environment that resulted in this increase in critical reflections.

Table 2.6
Levels of Reflection in Different Venues (Lord & Lomicka, 2007)

Level of Reflection	Lone reflections (n = 4)	Paired reflections (n = 4)	Discussion reflections (n = 6)
-Descriptive	50%	34%	22%
-Dialogic reflection	31%	15%	37%
-Critical reflection	18%	2%	16%
-Contextualized reflection	0%	<1%	<1%
-Community building	NA	11%	12%
-Encouragement/praise	NA	27%	6%
-Suggestions/Advice	NA	11%	7%
Total Reflections	130	507	662

In summary, this section of the literature review has demonstrated that faculty do engage in reflection as part of their teaching (McAlpine & Weston, 2000) and that faculty members engage in different levels of reflection that can potentially lead to transformative learning (Kreber, 2005b; Kreber & Castleden, 2009). It is also clear that levels of reflection can be identified and distinguished within written work (Kember et al., 1999; 2008) and within the online environment (Boyer et al, 2006; Lord & Lomicka, 2007; Whipp, 2003). What remains to be studied is whether Mezirow's (1991) levels of reflection as delineated by Kreber and Cranton (2000) and Kember et al. (1999) can be identified and distinguished within online reflective postings of college professors within a CI.

An analysis of levels of reflection within a faculty development project is important because simply reporting that faculty members reflected does not provide sufficient information. Different levels of reflection indicate different types of learning. As described above, Mezirow (1991) suggested that problem and process level reflections may lead to changes in meaning schemes (how we do what we do), but premise level

reflection is required for transformative learning that leads to changing in meaning perspectives of frames of reference. If collaborative inquiries and reflections are going to create substantive change that leads to improvement in teaching, at least some of the reflection must occur at the premise level. Because this dissertation will study reflections that occur online, the next section will explore the online environment as a venue for collaborative inquiry.

Community of Inquiry as a Model for Online Collaborative Inquiries

In order to more fully understand how blended approaches can support CI in general and critical reflection in particular, I will review the pertinent literature on online learning. This section will provide a brief historical overview of online learning and then explore the community of inquiry framework as a model for understanding online and blended approaches to collaborative inquiries. This section will end with a detailed exploration of empirical studies involving blended approaches to collaborative faculty development.

Historical views of on-line learning.

Online learning has its roots in the larger field of distance education that pre-dates the current version of the Internet (Power, 2008; Wallace, 2003). The initial methods of distance learning were based on the traditional, knowledge-transmission view of education that would be labeled as type one according to the Peters and Armstrong (1998) typology. That is, the focus was on instructor-controlled presentation of material with very little (if any) opportunity for student-teacher interaction and even less opportunities for student-student interaction (Wallace, 2003). As computer technologies

progressed, researchers and instructors began to realize that more interactive and even collaborative forms of learning could be created (Wallace, 2003). This gave rise to the field of research called computer mediated communication (CMC) (Herring, 2001).

Early electronic mailing lists gave rise to other forms of on-line discussion boards in which dialogical space and social construction of knowledge can occur without the need for face-to-face communication. Consequently, the field of CMC research began to study "the nature of teaching and learning in distance education" (Wallace, 2003, p. 244). Although several different frameworks for the analysis of CMC have been developed (De Wever, Shellens, Valcke, & VanKeer, 2005; Wallace 2003), the community of inquiry framework "has become one of, if not the leading models guiding research into online teaching and learning in higher education" (Shea et al., 2009, p. 10). In addition to being the predominant model of online learning, COI is particularly valuable for this dissertation because, as will be shown below, it has a close alignment with the collaborative inquiry framework and can be connected to the levels of reflection in transformative learning.

History of the COI model.

Garrison, Archer and Anderson (2010) described how the Community of Inquiry model developed from within the distance education field in response to their work in creating a partly online graduate program in communications technology. Based on their work, they saw a need to connect the human process of learning to the medium of computer communication. Their goal was to "provide a conceptual framework that would provide order, heuristic understanding and a methodology for studying the

potential and effectiveness of computer conferencing" (2010, p. 6). The result was the seminal paper on COI written by Garrison, Anderson and Archer (2000) which outlined the framework and its three elements: social presence, cognitive presence and teaching presence. This work was followed by more specific pieces on each of these elements: teaching presence (Anderson, Rourke, Garrison, & Archer, 2001), cognitive presence (Garrison, Anderson, & Archer, 2001) and social presence (Rourke, Anderson, Garrison, & Archer, 1999).

The Community of Inquiry model serves as both a theoretical framework for understanding online learning and as a research tool for analyzing the online learning (Garrison & Arbaugh, 2007). This dissertation will draw on COI primarily as a model for understanding online learning and will not use the coding schemes for analysis purposes. However, it is important to note that the coding schemes used in research are also part of the model for understanding. The next section will look more closely at COI as a model of learning.

The community of inquiry framework as a model of learning.

Although the COI framework was developed within the context of computer conferencing, it may also serve a general theory of higher education in blended or even face-to-face environments (Archer, 2010; Garrison et al., 2010). The framework was philosophically based on John Dewey's principles of interaction, community and shared meaning (Garrison et al, 2010). The goal of the model was "to create a community of inquiry where students are fully engaged in collaboratively constructing meaningful and worthwhile knowledge." (Garrison, 2006, p. 25). Thus, the COI model views learning as

a collaborative process and views the three elements as interacting to create a meaningful educational experience.

Although these elements can be looked at individually, it is within the interactions of the three presences that educational experience occurs (see Figure 2.3). As Garrison et al. (2000) stated, "When social presence is combined with appropriate teaching presence, the result can be a high level of cognitive presence leading to fruitful critical inquiry." (p. 96). That is, each of the presences is essential in balancing the other two. Thus, as each of the elements of COI is further explored below, it is important to keep in mind their interactivity.

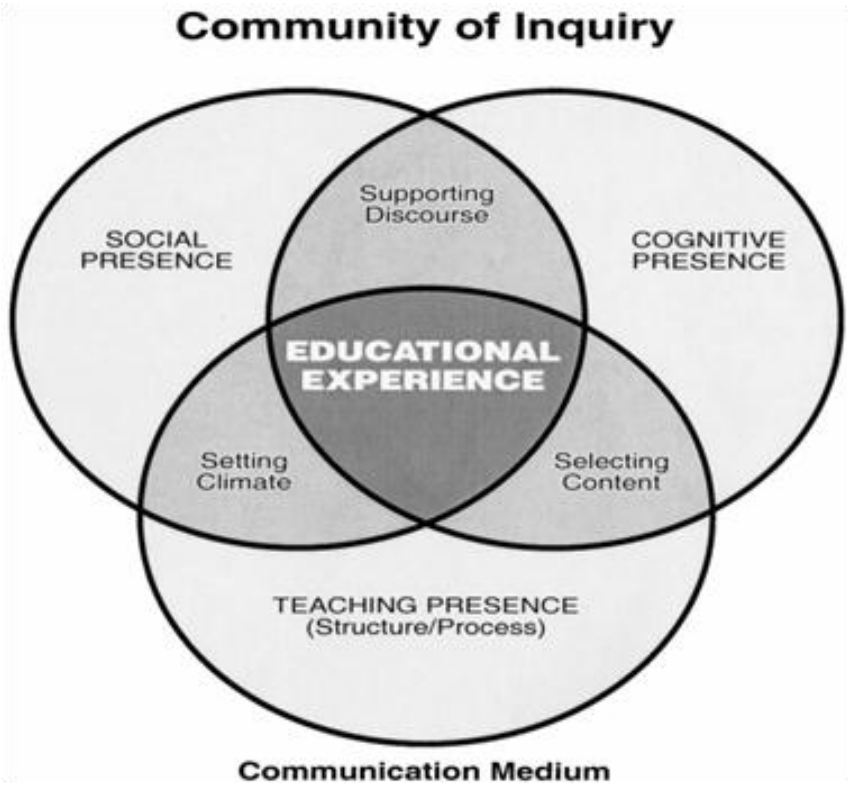

Figure 2.3 Community of Inquiry, (Garrison et al., 2000, p. 88).
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Social presence.

Social presence was originally defined as "the ability of participants in the Community of Inquiry to project their personal characteristics into the community, thereby presenting themselves to the other participants as 'real people.'" (Garrison, et al, 2000, p. 89). Garrison and Arbaugh (2007) later modified this to the "ability of learners to project themselves socially and emotionally" (p. 159). As Garrison (2007) noted, social presence is also about reaching a level of security so that open communication can occur. The primary importance of this element is its function as a support for cognitive presence and its ability to facilitate critical thinking (Garrison, et al, 2000). Thus, as will be more thoroughly explored below, social presence is closely aligned with dialogical space. The COI model explores social presence from within three categories: emotional expression, open communication, and group cohesion.

Aragon (2003) provided a detailed list of strategies for creating social presence. He divides them into three groups based on which individuals would employ them (course designer, instructor/facilitator, and participant). A few examples of Aragon's suggestions follow. For the course designer, strategies include developing welcome pages, student portfolios and collaborative learning activities. The designer should also limit class size to no more than 30 students per facilitator. For participants, Aragon suggested that they contribute to discussion boards, promptly answer messages, use humor, and share personal experiences. For the instructor/facilitator, Aragon recommended that they also contribute to the discussion boards, provide prompt replies and feedback, use humor, and share personal experiences. This last suggestion relates to

the fact that the instructor must also be seen as a 'real' person. While the teachers need to engage in social presence, they are also primarily responsible for creating teaching presence, which will be explored next.

Teaching presence.

Garrison et al. (2000) described teaching presence as having either two or three overlapping components. They described two *functions* of teaching presence as "design" and "facilitation" (p. 90), but then listed three *categories* of teaching presence indicators as "instructional management, building understanding, and direct instruction" (p. 101). Design was described as having two parts: "the selection, organization and primary presentation of course content" and "the design and development of learning activities and assessment" (p. 90). Garrison et al. (2000) placed facilitation within direct instruction which included the responsibility to "facilitate reflection and discourse by presenting content, questions, and proactively guiding and summarizing the discussion as well as confirming understanding" (p. 102). While it is clear that all of these activities would fall under the role of teaching, this attempt at organizing them into separate, but related pieces was problematic and led to some debate over exactly how to define this presence (Garrison, 2007, Garrison et al., 2010).

Shea et al. (2010) provided a more clear definition of teaching presence as "the instructional design and organization, facilitation of productive discourse, and direct instruction developed in online courses, ideally by both instructors and students." (p. 10). To reach this clarity, they revised their coding protocol for direct instruction, design and facilitation. Their revised definitions more closely fit with the Garrison et al. (2000)

three category labels of instructional management (instructional design and organization), building understanding (facilitation of productive discourse) and direct instruction (direct instruction, but with facilitation removed). Vaughan and Garrison (2006) described teaching presence for faculty development projects as having three categories that match those of Shea et al. (2010).

In summary, teaching presence deals with three functions: organizing, facilitating and instructing. Organizing the overall course includes organizing the discussion boards into logical units and setting the learning goals for the course. Facilitating discourse involves creating appropriate prompts and guiding questions for the online discourse as well as actively engaging with the students in order to draw them into the conversation. Direct instruction involves helping participants find information needed to answer questions and complete their learning tasks. Each of these functions would be needed in a blended faculty development project as well as a formal class.

Regardless of the number of sub-categories, teaching presence is a critical connection between social presence and cognitive presence. As Garrison and Cleveland-Innes (2005) pointed out, "if students are to reach a high level of critical thinking and knowledge construction, the interaction or discourse must be structured and cohesive" (p. 136). As Pawan, Paulus, Yalcin and Chang (2003) stated, "Without the instructor's explicit guidance and 'teaching presence', students were found to engage primarily in 'serial monologues'" (p. 119). That is, without teaching presence, students might be posting to the discussion board without interacting and possibly without any learning occurring. As Garrison et al. (2000) noted, while teaching presence is primarily a teacher

function “it may be performed by any one participant” (p. 89) and more specifically that facilitation is a shared responsibility. Facilitation includes facilitation of reflection, which is a component of collaborative inquiries and transformative learning. Reflection is also a critical component of the cognitive presence which will be more fully explored next.

Cognitive presence.

Garrison et al. (2000) noted that cognitive presence is the most basic element for success in higher education. They described cognitive presence as “the extent to which participants in any particular configuration of a community of inquiry are able to construct meaning through sustained communication.” (p. 89). Garrison and Arbaugh (2007) noted that sustained communication involves reflection. Sustained communication and reflection are similar to the concept of construction of knowledge that occurs within the cycles of action and reflection within a CI as described previously.

For the COI framework, cognitive presence is “built upon the Deweyian notion of practical inquiry (Dewey, 1933, 1959) and reflects both critical and creative thinking processes” (Shea et al., 2010, p. 11). “Dewey's practical form of inquiry included three situations: pre-reflection, reflection, and post-reflection. Reflection was the heart of the thinking process but was framed by a perplexing and confused situation initially and a unified or resolved situation at the close” (Garrison et al., 2000, p. 98). Based on the idea that inquiry involves a confused situation followed by reflection, the COI model suggests that cognitive presence occurs within a four-phase practical inquiry process (Garrison and Arbaugh, 2007) as shown in Figure 2.4 and further described below.

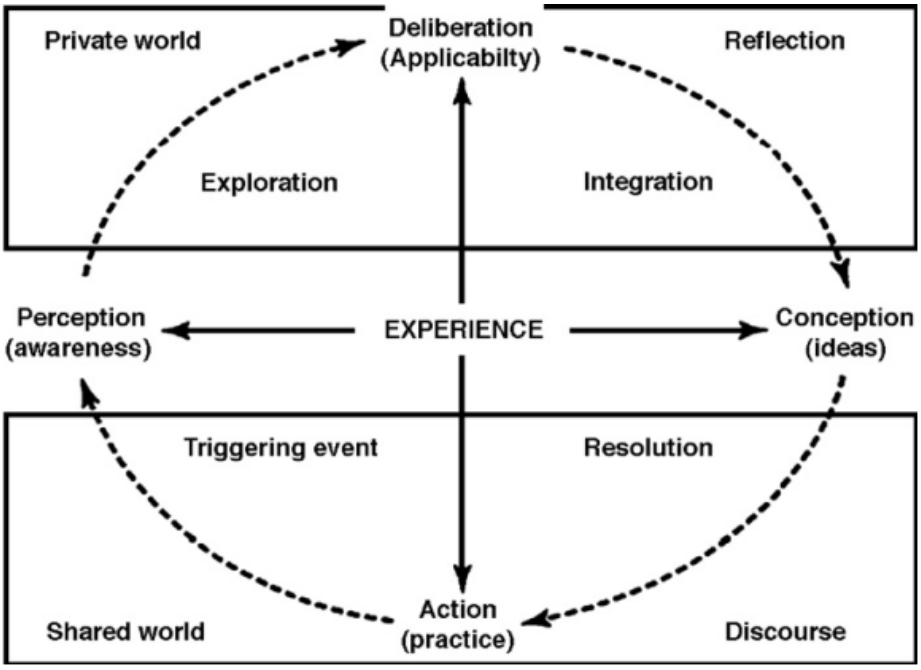

Figure 2.4 Practical Inquiry Model (Garrison & Arbaugh, 2007, p. 161)
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The four phases of the practical inquiry model are: (a) a triggering event, (b) exploration, (c) integration, and (d) resolution. (Garrison et al, 2000, 2001; Garrison & Arbaugh, 2007). The triggering event involves the presentation of "some issue or problem that requires further inquiry" Garrison & Arbaugh, 2007, p. 161). Although this triggering event may be posed by the teacher, it can be explored by the students in a reflective manner as described below by Garrison, et al., (2000, p. 98):

> Critical thinking or inquiry is seen here as a holistic multi-phased process associated with a triggering event. This triggering event is followed by perception, deliberation, conception, and warranted action. Moreover, we assume an approach where learning how to think is embedded in what to think; that is, it is domain-specific and context-dependent. Critical

> thinking and inquiry is not purely a reflective process internal to one mind. The model presented here assumes an iterative and reciprocal relationship between the personal and shared worlds. That is, there is a synergy between *reflection* and *communicative action*.[emphasis added] Critical thinking is the integration of deliberation and action. This reflects the dynamic relationship between personal meaning and shared understanding (i.e., knowledge). Purposeful thinking and acting are essential to the educational process.

Thus, cognitive presence in the COI model is based on a problem solving process and the indicators for that process look for evidence of action. While Garrison et al. (2000) clearly describe reflection as being part of the inquiry; the phases of the process do not specifically refer to reflection. Instead, they note exploration, integration and resolution. Thus there is an implied assumption that reflection is occurring within those phases, but there is no clear indicator for reflection within the coding scheme. Because the description of the practical inquiry model involves *reflection and communicative action*, it seems to be related to Mezirow's transformative learning theory. To further understand reflection within the COI model, I will explore that possible relationship within the next section.

Practical inquiry model and levels of reflection.

The practical inquiry model of the COI framework has many similarities with Mezirow's levels of reflection within transformative learning. Both models involve an initial problem followed by reflection on that problem. As Garrison et al, (2000) noted,

"reflection was the heart of the thinking process but was framed by a perplexing and confused situation initially and a unified or resolved situation at the close" (p. 98). Due to different intents and different levels of focus, the alignment is not perfect, but they can be compared approximately as shown in Table 2.7.

The triggering event is equivalent to Mezirow's disorienting dilemma. The exploration phase would initially involve some reflection on the problem resulting from this event, which would be similar to what Mezirow described as reflecting on the content of the problem. Exploration would then continue into reflection on possible solutions, which would be part of the process/product level of reflection. Integration would begin as the person began to reflect on how well their solution worked. This would still be in the process/product level but now more focused on the results or product.

Resolving the conflict and applying the decided-on solution would involve final reflection on the process/product in terms of how well the resolution worked. Reflection on the resolution may also involve reflections on the underlying assumptions, which would take a participant into the premise level of reflection. Because it is possible within the COI model that the resolution could occur without reframing the question, the resolution phase may occur without reaching the premise level reflection. Because there seems to be some degree of overlap, Table 2.7 uses bold print to indicate which level of reflection is most closely related to each particular phase of the inquiry model.

Table 2.7
Practical Inquiry Phases Compared to Levels of Reflection

Practical Inquiry Phases (Garrison, et al., 2000)	Levels of Reflection (Mezirow, 1991, 2000
1. Triggering Event	Disorienting Dilemma
2. Exploration	Content of **Problem Process/**product
3. Integration	**Process**/**product** Premise
4. Resolution/application	Process/**product Premise**

While this table provides a general comparison, it is not meant to imply that the COI coding schemes are can determine the levels of reflection. The levels of reflection require a separate analytic frame as discussed in the section on critical reflection above. Reflection is central to COI, but it is also an important part of CIs and an element of CL. The next section will explore reflection and other comparisons between COI and CL.

The COI model compared to collaborative inquires.

Redmond and Lock (2006) suggest that COI is a "flexible framework for online collaborative learning" (p. 267). Thus, there is a connection between COI and CI as explored above using Peters and Gray's (2005) elements of CL. As was hinted at in the discussion of the three presences above, this section will take a closer look at those connections.

Dialogical space may be most closely related to social presence because both relate to knowing and trusting your fellow participants. The degree to which participants

get to know and trust each other sets the stage for how well they will be able to form a community and enter into dialogue with each other. Dialogical space is also seen within the interaction between social and teaching presence because teaching presence facilitates the discourse which includes dialogue.

Multiple ways of knowing is seen within social presence, but especially within its interaction with the other presences. Each *real person* brings their own perspective and way of knowing into the cognitive presence. And again, teaching presence is required to help recognize and draw out these multiple perspectives.

Focus on construction is clearly within the cognitive presence which focuses on knowledge construction but teaching presence is required to focus the discourse on the construction. The cycles of action and reflection are also most closely linked to the cognitive presence and the practical inquiry model. Indeed, the practical inquiry model specifically describes multiple rounds of triggering event, reflection and inquiry (Garrison et al. 2000).

Interactions between the three presences as types of teaching and learning.

As mentioned above, the three presences interact to create an educational experience. If any one of the elements becomes too strong or weak, then the educational activity changes form. These imbalanced arrangements can create various types of teaching and learning situations as follows.

If social presence is very strong and the other two presences are very weak, then the interaction becomes mostly social networking where very little teaching or learning is taking place. If the cognitive presence is very strong and the other two are very weak,

then you would essentially have a blog or on-line journal where individuals post their thoughts with little interaction with others. If the teaching presence is very strong and the other two are weak, you essentially have a Type One, teaching by transmission situation (Peters & Armstrong, 1998) along the lines of early computer based distance education. If you keep the teaching presence strong, while allowing a moderate level of cognitive presence and a minimal level of social presence, then you could create a Type Two or cooperative form of teaching and learning. When all three presences are fully operating, then a full sense of community arrives and a collaborative learning (Type Three) situation is possible. Thus, when the ideals of the COI model of learning are met, the result is a process that aligns with a collaborative learning situation which is the ideal goal of a CI. Although these different models approach teaching and learning from different perspectives they converge on a similar ideal that the CI project of this dissertation was trying to achieve.

Blended learning.

As the COI model has continued to evolve, the field of CMC has also continued to evolve and one of those evolutions has been the emergence of blended approaches to teaching and learning. Although blended learning is sometimes used to refer to any combination of online and face-to-face learning experiences, Garrison and Kanuka (2004) suggested that blended learning is one part of a continuum of mixtures of venues. That continuum extends from “enhanced” courses in which the primary mode of learning is face-to-face with some online activity to courses that are completely online (p. 97). While there is no specific definition of how much or little online learning is required to

be labeled as blended, but Garrison and Kanuka (2004) suggested a qualitative distinction. For them, blended learning requires "the effective integration" of both face-to-face and online activities "such that we are not just adding on" (p. 97). More importantly, "a blended learning design represents a significant departure from either of these approaches." (p. 97). That is, a truly blended approach to any teaching or learning experience is *designed* to take advantage of the unique qualities of each venue.

The important qualities of the online environment include the following. By using asynchronous discussion boards "learners can be independent of space and time – yet together" (Garrison & Kanuka, 2004, p. 97). That is, the online aspect frees the participants from specific scheduling commitments, but allows them to still work together. As Skibba (2006) reported, the online aspect of blended learning allows for more in-depth learning by increasing the interactivity of the participants. In addition, the written nature of the online discussions "encourages reflection and precision of expression." (p. 97). That is, reflection is more likely to occur in the online environment of a blended experience. This is consistent with the work of Lord and Lomicka (2007) described above and with the work of Vaughan and Garrison (2005) that will be further described below.

The major drawbacks of online activities include a potential sense of isolation and alienation with this "lean environment" (Garrison et al, 2000). Although social presence can work to reduce these problems, the face-to-face portion of a blended approach can also help to reduce this isolation. That is, by being involved in face-to-face activities,

participants can get to know each other as real people and social presence can form more readily.

Taking this back to the faculty development, Vaughan and Garrison (2005) suggested that "While there is an absence of research literature in general about blended learning and more specifically to a faculty development context, the potential to support faculty development inquiry by creating opportunities for both synchronous and asynchronous discourse and reflection is powerful" (p. 4). Although that statement is now over six years old, my literature search revealed that there is still a scarcity of empirical studies on blended approaches to faculty development at the college level. I will review those studies in the next section.

Empirical studies of blended faculty development projects.

As Schwier et al. (2009) pointed out the "design of collaborative learning environments has been well documented" (p. 1), but much of that research has been in the area of college students in blended courses or K-12 teacher faculty development (see Berger, Eylon & Bagno, 2008; Flanagan, 2009; Mackey & Evans, 2011; Owston, Wideman, Murphy, & Lupshenyuk, 2008). I located only ten empirical studies dealing specifically with blended approaches to faculty development at the college level and several of those were separate reports on the same project. In addition to those 10 studies, I chose to include in this review two other studies that were not strictly blended approaches, but were related to college faculty development and online reflections.

I organized my review of these 12 studies based on their similarities as follows. Three were related studies on blended faculty development across multiple disciplines

(Vaughan & Garrison, 2005, 2006; Vaughan, 2010), and three were related studies on course redesign within a college of nursing (Lee et al., 2010; Myers, Mixer, Wyatt, Paulus, & Lee, 2011; Paulus et al., 2010). Three of the studies explored faculty development from within a formal course environment (Fitzgibbon & Jones, 2004; Hanlin-Rowney et al., 2006; Schrum et al., 2005). There were three studies in which the participants were exploring general pedagogy within some form of learning community (Hiser, 2008; Sherer, Shea & Kristensen, 2003; Schwier et al., 2009). In addition to these studies of online/blended faculty development in higher education, I also examined two studies of blended faculty development at the K-12 level (Berger Et al. 2008; Owston et al., 2008) that had a high level of collaboration and emphasized the need for participant reflection. After a review of the nature of the individual studies in terms of their overall context and salient individual contributions, I will synthesize their findings and conclusions that relate to my dissertation and then discuss how the literature suggests the need for further research.

Overview of each study.

Course redesign across disciplines.

Vaughan and Garrison (2005) used the COI coding framework to explore a blended faculty development project undertaken by 12 college faculty members from multiple disciplines in a major university that were working to redesign their courses into a blended format. Their study project started with a half-day face-to-face orientation and included six bi-weekly 90 minute face-to-face meetings with online discussions in between. The entire project lasted one semester. The online component consisted of

reading assignments and questions about specific aspects of teaching online. The participants were required to post their answers to the questions before the face-to-face meetings. The face-to-face meetings, which were audio-recorded for research purposes, started with a debriefing of those questions and included technology demonstrations and discussions over that week's material. The participants then continued their discussion using an asynchronous discussion forum.

Vaughan and Garrison (2005) used the cognitive presence coding protocol (Garrison et al., 2000) and analyzed both the face-to-face and online discussions. They also interviewed the participants after the study to determine their perspective on the differences between the face-to-face and online discussions and conducted thematic analysis of the interview data. Their findings included several critical differences between the online and face-to-face activities as described next.

Vaughan and Garrison (2005) concluded that that triggering events occurred more often in the face-to-face meetings while critical reflection and the integration phase of the practical inquiry model occurred more often in the online component. The face-to-face meetings provided a chance to brainstorm while the online postings functioned as a "knowledge management resource" (p. 6) that faculty members could repeatedly reference while completing their projects. The participants in that study also noted that the online environment "forced them to think and reflect" because they knew that their postings would be read by their peers (p. 7). Vaughan and Garrison (2005) also noted that face-to-face discussions tended to be choppy with few completed sentences, that what was discussed often was forgotten, and the time constraints did not allow every

individual a chance to participate. In contrast, the online venue allowed "for a dialogue to be extended beyond the physical walls" and that provided opportunities for everyone to participate. This online extension allowed the participants to stay connected with their peers.

Vaughan and Garrison (2006) conducted a follow-up to their 2005 study by exploring how this blended approach to faculty development had been expanded to an ongoing, institution wide course redesign project. This project, titled Inquiry Through Blended Learning (ITBL) required individual faculty members to apply for a mini-grant to participate. Once accepted, the faculty members formed collaborative teams (organized around a specific course) and then worked their way through the practical inquiry process of redesigning their courses. In this study, Vaughan and Garrison focused on the institutional leadership and course evaluation aspects of the ITBL project. As part of the evaluation, they interviewed faculty participants about their experience in the ITBL and surveyed their students about their perception of the courses redesigned by the ITBL process using a Likert scale instrument of their own design.

The perspective of the faculty members toward the redesign program was generally favorable. They appreciated the chance to experiment with new strategies and the increased interaction with students in their courses. They did express concern over the increased workload associated with the new design and noted "student 'push back' and resistance to taking increased responsibility for their learning" (p. 86). They also noted that they needed to emphasize the inquiry process over covering content and that blended learning should not be used to increase course content. That is, adding an online

component should be used to increase the depth of student learning, not to increase the amount of material students' must learn.

While the students were generally appreciative of the increased interaction in the redesigned course, 26% of them stated that they did not want to take another blended course. Forty-three % of the students also reported that the course expectations were not clear for the redesigned course. This last finding was related to the fact that students enrolling in the course were not aware of the expectations for them to take more responsibility for their own learning.

Vaughan (2010) provided a follow-up to Vaughan and Garrison (2006) which linked the ITBL project to student achievement, student engagement, and the scholarship of teaching and learning. For this study, Vaughan interviewed faculty members and teaching assistants that had redesigned nine different courses. The redesigned courses impacted 241 students in the fall of 2006. Vaughan then focused on one of those courses (psycholinguistics) as the instructional team (faculty member, graduate assistant, and instructional designer) evaluated the results of the redesign and then underwent another cycle of course improvement. The second cycle of redesign was focused on more closely aligning the technology, assessment process and course objectives.

For the focus course (which had 35 students in each semester) Vaughan measured student engagement using the National Survey of Student Engagement (NSSE) instrument and comparisons were made between engagement and student grades before and after the second iteration of course redesign. The results of these comparisons showed better overall grades and course completion after the second course redesign.

The proportion of A grades in the course improved from 57% to 82% and the completion rate improved from 85% to 100%. The NSSE instrument indicated that students were more engaged in the final version with "significant improvements in active and collaborative learning" indicators (p. 65). Thus the instructional team for this focus course was able to demonstrate specific course improvement based on redesign, which fulfills the goals of SOTL to use a more scholarly approach to improving teaching and learning. Vaughan reported that all of the faculty participants involved in the ITBL process were encouraged to follow the SOTL model by assessing their redesign efforts and reporting their findings to other faculty members.

Vaughn (2010) concluded that course redesign is a challenging process and that "a blended community of inquiry approach" was needed to support and sustain this process (p. 65). Without that support, faculty members often make course redesign decisions that do not fully capture the potential of blended learning. While Vaughan's work followed course redesign as part of a long-term, ongoing, and institution-wide program, the next set of studies followed the course redesign process within the more focused setting of a single college within a university.

Course redesign within a college of nursing.

Lee et al. (2010) used the COI framework as a conceptual model for the content of five workshops connected to a faculty development project for 25 nursing faculty at a major university who were transitioning their program to a blended/online format. In addition to the COI model, this project used the collaborative learning theory of Kreijns et al. (2003) to help create a community of practice (Wenger, 1998). This report

described the project from the design perspective in which face-to-face workshops were interspersed with asynchronous online discussions and two synchronous online workshops. In addition to the workshops, several smaller classes related to specific technology were offered throughout the project.

Participants were divided into small groups for discussions within the workshops and then debriefed as a large group. Elements of the synchronous (face-to-face and online) discussions were used as focal points for the asynchronous discussions, where participants were also divided into small groups. The facilitators changed the composition of the small groups often. This study reported varied participation and attendance. Of the 25 total participants, participation in the face-to-face meetings varied from 20 and 22 participants for the first two workshops and 18, 12, and 12 participants at the last three workshops. All 25 participants were involved in the first online asynchronous discussion, but online participation declined over time. Attendance at the technology classes was consistently low, ranging from one or two participants up to a high of eight.

Lee et al. (2010) described five areas for consideration in the design of future blended faculty development projects. The two most critical considerations as related to this dissertation were just in time teaching (JITT) and defining workshop expectations. JITT suggests that participants attend those workshops and classes that cover topics that they need immediate help with. This concept was reflected in the participation patterns noted above. The need to define workshop expectations suggests that faculty members need to be understand the work load and time requirements for these sorts of projects.

One particular aspect of this concept related to this report is that participants were not given release time for this project.

Paulus et al. (2010) reported on findings from a study of the same faculty development project as Lee et al (2010). Their qualitative case study analyzed data from the discussion forums, blogs and text chats as well as well as focus group discussions and identified six themes related to participant experiences. Each of these themes relate to this dissertation study because they reveal the perspective of faculty members engaged in a blended faculty development project. I will briefly describe these themes below.

Paulus et al. (2010) described "plugging in" (p. 7) as how participants had to find a balance between their participation levels, their needs and their time constraints. Time constraints and the immediacy of needs were also part of the "sustaining momentum" (p. 11) theme. "Multidimensional learning" (p.8) described the challenge of having to learn multiple concepts simultaneously such as different aspects of technology and how to best use technology in teaching. "Role-shifting and meta-learning" (p.9) involved the reflection on teaching and learning that was stimulated by being in the role of a learning in a new environment and this reflection was related to "paradigm shifting" (p. 10) which involved faculty challenging their assumptions about how they teach and why. Most closely linked to this dissertation was the theme of "peer sharing, modeling, and community building" (p.7). This theme described the participants' recognition that the peer nature of the workshops created "a safe place, and fostered collegiality." (p. 8).

Myers, et al. (2011) also reported on the nursing faculty development project, in this case from a situational leadership and adult education (Mezirow, 1991, 2000)

framework. Myers et al. suggested that "For some faculty participants, the development program was a transformative experience that prompted a re-examination and consequent reconceptualization of faculty and students' roles in learning." (p. 4). They also reported that heterogeneous small groups actually created some problems as discussions often centered on program differences rather than pedagogy/design. They suggested that commonality allows for the participants to focus on the goals of the CI rather than discuss their differences. Myers et al (2011) also described the value of JiTT (Just in Time Teaching) and noted that effective faculty development programs are ones that "help faculty resolve their current or immediate future needs" (p. 7). That is, they need to be relevant to the faculty members. While the project studied by Myers et al. occurred within their department, the next section of the literature review moves to blended approaches that occur within a formal course.

Blended faculty development related to formal courses.

These next three studies dealt with faculty development projects that were conducted as part of a formal college course. Although they were given graduate credit, the primary focus of the participant-students was still in the improvement of their practice.

Online staff development. Fitzgibbon and Jones (2004) reported on a large scale project to prepare the faculty members of a major university to teach online. This report focused on the design of a staff development project, which was later converted into a graduate course. While the program was conducted primarily online, it involved an initial face-to-face meeting and two other face-to-face sessions during the midpoint and

toward the end. This report included two pilot studies. The first pilot (ran in 2001) involved 36 full time business and management faculty and the second pilot (ran in 2002) involved 24 faculty members from education fields.

Fitzgibbon and Jones provided little insight into the course material and process but made a few interesting points. First, they noted that "the role of the lecturer needs to be examined in the context of e-learning" (p. 25). Second, they discovered some timing issues. They were trying to run the course as a six week session during "faculty members' busy time for grading" and other responsibilities. They attempted to correct for this in the second iteration. The third and most significant lesson learned was that institutional support was critical to success.

Online course about online teaching. Schrum et al. (2005) studied a faculty development project that involved collaboration between a large university and a community college to provide a graduate course in online teaching. This project involved two instructors and a graduate assistant and started with 30 students from 8 different institutions. The students were all college faculty members with 4 to 28 years of experience. This one semester course was originally designed by other instructors as four different modules and used the WEBCT learning management system.

Before-course surveys were used to determine participant's previous experience and expectations while the post-course surveys determined their response to the course. The results of these surveys indicated that faculty expectations were very high, but there was a fair degree of dissatisfaction with the course. One of the most critical points of that dissatisfaction was with the lack of building collegial relationships. The researchers

suggested that this was because WEBCT had a “limited ability to support the threaded discussions or allow students to follow threads easily” (p. 287). This last finding was the primary reason that I included this report in the literature review even though it as completely online course. Since one of the goals of a collaborative inquiry is to create a collaborative environment that supports dialogue, this study suggested that a completely online venue may not be suitable for conducting a CI. This finding stands in contrast to the blended studies described above and the study described next.

Online collaborative inquiry for exploring transformative learning. Hanlin-Rowney et al. (2006) described the work of seven students within a graduate level transformative learning program that chose to conduct their own collaborative inquiry into their individual practices as educators. Although the program was primarily online, the participants had met face-to-face during several multi-day “intensives” (p. 322) which makes this study a form of blended professional development. The participants were both students and professionals within the larger field of education ranging from college faculty to corporate trainers to community educators. This study focused on a three month period near the end of the two-year program in which the participant-researchers engaged in online dialogue and conducted cycles of action and reflection as a way to facilitate and understand their own transformative learning

Each of the reflection cycles focused on a particular aspect of their program and required that participants engage in some form of online action related to that aspect of the course. Participants then reflected (individually and collectively) on the process and what they learned from it. They collected their online reflections and created and

answered their own survey which they subjected to qualitative thematic analysis. While most of their findings were very personal, they did report on several aspects of online collaboration and reflection that are of critical importance to this dissertation.

Hanlin-Rowney et al. (2006) noted that the online aspect created a suitable environment for reflection because "we experienced a slowing down that allowed us to enter reflective spaces we may not have entered in a face-to-face inquiry." (p. 331). Also, the persistence of the postings allowed participants to reread and further reflect on each other's responses. From a research perspective, the online reflection "provided a ready record of all interactions" (p. 330) that made the process of analysis easier. Hanlin-Rowney et al. also noted two important challenges to the online environment. First, because not everyone could be online at the same time, there needed to be a high level of commitment from each participant. Second, as has been noted above, the reliance on written communications can create misinterpretations. Hanlin-Rowney et al. (2006) suggested that "It takes extra effort for participants to clarify meaning and nurture relationships." in order for online dialogue to be successful (p. 331). They also noted that trust and support were critical for allowing the participants to "excavate our unexamined capacities" (p. 331). With sufficient commitment and trust, they reported that there small group reached high level of dialogue and became "a community that learns, as opposed to a community of learners." (p. 333).

In summary, the study by Hanlin-Rowney et al. demonstrated that online dialogue can lead to deep reflection amongst professionals engaged in a collaborative inquiry. Although this group originally met as part of a formal course, they took their learning

back to their professional practices. The next section will explore blended faculty development projects that originated solely within participant practice and focused more specifically on pedagogy.

Blended faculty development for general pedagogy.

This section examines blended faculty development projects that focused on general pedagogy rather than course redesign. This is important to this dissertation because, when the focus of the project is on online learning, faculty participants may be more likely to participate in online activities. In contrast, the studies in this category provide insight into participant perception when the focus of the blended project is on something other than the online environment. There were three studies in this category.

Online teaching center. Hiser (2008) provided a very short report on the value of taking faculty development online in which she described her role as a new faculty coordinator within a faculty development center in a community college. In that institution, the center provided various online teaching resources including an asynchronous discussion board related to a set of teaching case studies. This report did not describe the size or composition of the groups of faculty participants. Her major findings were that "just crafting an online post provides a valuable form of reflection" (Hiser, 2008, p. 29) and that there was a difference between new and experienced faculty in their postings. New faculty posts tended to be more practical, while seasoned faculty "make longer, more complex posts that probe the deeper issues" (p. 29).

Faculty learning communities. Sherer et al. (2003) reported on an on-going system of faculty learning communities sponsored by the teaching center at a private

mid-size school. While the focus of this paper seemed to be on describing how the teaching center sponsored FLCs, they did provide an example of one FLC cohort. This cohort consisted of six faculty members teaching statistics that met face-to-face twice a month for a year with e-mail conversations in between meetings. This cohort worked together to learn new software and computing resources, discussed challenges to teaching their courses and worked to learn about their courses from other disciplines. They reported two major benefits of their participation were meeting new colleagues and enhancing their knowledge of teaching.

From the larger perspective, Sherer et al. connected FLCs to Wenger's (1998) concept of communities of practice and noted that college professors, like other professionals, "typically seek out peers as part of their lifelong professional development." (p. 183). They also noted that "as knowledge workers in higher education, faculty need an active, connected community to help filter the overwhelming availability of information, understand what they find, and use it appropriately." (p. 184). A major "professional development challenge for faculty developers and academic institutions is harnessing current technology" in order to create communities of learners (p. 184).

Sherer et al. (2003) also discussed technology's role in supporting FLC. They described how the teaching center had created a "Faculty Learning Community Portal" (p. 189) where they have electronically gathered many teaching resources. In addition to library-like information resources, this portal also contains asynchronous discussion board spaces for faculty members to use in creating new FLCs.

Virtual learning communities. Schwier et al. (2009) employed the virtual learning community (VLC) model in their study of a semester long faculty development project. This project involved 10 “novice professors” from 9 different disciplines who were studying general teaching concepts that emphasized “self-directed learning” for improving teaching performance (p. 3). The program was designed with two weeks of self-study into a given topic during which the participants posted “personal reflections, questions and observations” (p. 5) to an asynchronous discussion board and/or blog using an online community site using Ning, a social networking platform (http://ning.com). At the end of each two-week segment, they had two-hour face-to-face meetings in which they discussed the topics and the results of their research into them. New topics were created each week and a total of seven face-to-face meetings occurred.

The Virtual Learning Community (VLC) model was based on previous pure on-line studies (Schwier, 2001). The VLC model is a transcript coding scheme that contains 15 elements of community including: mutuality, trust, reflection and learning process. Within this study, reflection was defined as “situating previous experiences, postings in current discussions, or grounding current discussions in previous events.” (p. 6) and was the most commonly found element. This study found “no compelling evidence of a community forming in this environment” (p. 7). This was related to the overall scarcity of postings.

In addition to their coding analyses, Schwier et al. (2009) interviewed their participants and determined several barriers to participation. These included an overall lack of time, and the placing of a lower priority on their participation. They also

suggested that the participants may have "considered the face-to-face sessions as the default learning environment" (p. 10) and thus felt less of a need to participate in the online discussions. Another conclusion from this study was that online activities may not be suitable for some people.

Selected examples of online/blended faculty development at the K-12 level.

High school physics teachers. Berger, Eylon and Bagno (2008) studied a blended approach to faculty development for 16 high school physics teachers who were learning to use innovative teaching tools called "Knowledge Integration Routines (KIRs)" (p. 400). The participants were all experienced teachers, but none of them had previously used KIRs. As the teachers learned to use the KIRs, they also practiced them in their classrooms and then collected data and reported on their students' success. One of the data items collected was reflections from the participants' students on their experience with the KIRs. So in that way, this project was a form of collaborative inquiry in which the participants were gathering and analyzing data from within their own practice.

This project included nine monthly face-to-face meetings with asynchronous discussions in between. To facilitate online reflection, Berger et al. created several online reflection tools. These tools included the posting of participant statements from the face-to-face for further reflection, requiring participant to report the results of their classroom research and post some of their students' reflections. (p. 401). These tools were developed by the researchers through previous iterations of a similar project which indicated that some of the success in this project was based on the facilitators gaining experience.

Berger et al. (2008) recorded the face-to-face meetings and transcribed the online discussions and subjected both data sets to content analysis. They then compared the overall content of the two venues. They found that there was indeed a strong "continuity of learning" (p. 400) in which the same ideas were present in both venues. They also found that there was "a flow of teacher's ideas between the two environments results in the extension of ideas…" from face-to-face to online and vice versa (p. 407). The major differences between the two venues was that the participants spent more of their face-to-face time learning about the KIRs and spent more of their online time reporting on the use of the KIS. That is, they spent much of their face-to-face time as students and their online time as teachers reporting on their own research. In both venues, however, there was a fair amount of general discussion of ideas and supporting each other through the process. In addition to their findings about continuity, this report also noted that the online discussions continued for four months after the project ended. That is, the community created by this project continued on in the absence for further facilitation.

Case study of three programs. Owston, Wideman, Murphy, & Lupshenyuk (2008) reported on a cross-case analysis of three program evaluations of blended teacher development programs for K-12 school teachers. Two of the three programs involved intensive face-to-face summer institutes with facilitated online discussions and online guest speakers throughout the year while the third program involved a two year project in which the initial one-day face-to-face session was followed by online discussions for eight weeks and then another one-day face-to-face workshops. There were three such cycles each year in that project.

As a result of this study Owston et al. (2008) developed several conclusions that are of importance to this dissertation. They noted that teachers needed to "learn on the job and try ideas in their classroom" (p. 205) and that "they wanted more time devoted to just sharing and discussion of each other's ideas" (p. 206). They also concluded that teachers are more likely to participate if the face-to-face meetings are closer together in time and, more importantly, if the topic is of immediate relevance to their needs.

Synthesis of literature review of blended faculty development.

In this section I will provide a synthesis of the specific reviews above. Two general questions to be asked are (a) what methods are being used to explore blended approaches to faculty development and (b) what have the studies found to be best practices for

***Synthesis of research methods*.**

While most of the 12 studies reviewed above identified their theoretical framework (COI, COP, FLC, etc.) many of them did not specify their methodological framework. Two of the studies reported the use of existing content coding schemes and the rest employed some form of holistic/emergent qualitative method. I will discuss the coding schemes first and then return to the more holistic methods.

The VLC coding scheme used by Schwier et al. (2009) looked at 15 elements of community, one of which was reflection. Although reflection was one of the most common elements found, the coding scheme did not allow for any differentiation between levels of reflection. Similarly, while the cognitive presence coding scheme used by Vaughan and Garrison (2005) allowed for understanding the practical inquiry process

which involves reflection, it did not allow for detailed look at levels of online reflection. While the VLC and COI coding schemes are of value in identifying and quantifying elements of their models of learning that value is best seen in making comparisons to other studies that used that particular model. Neither coding scheme provided a holistic view of the overall faculty development project. That broader view required other, more qualitative approaches.

Research studies that identified their methodology included the case study method (Owston et al, 2008; Paulus et al., 2010), grounded theory, (Berger et al., 2008) and the instructional design portfolio (Lee et al., 2010). Without a direct statement of methodology, six other papers also presented lessons learned from the design perspective (Fitzgibbon & Jones, 2004; Myers et al, 2011; Schrum et al., 2005; Sherer et al. 2003 Vaughan, 2010; Vaughan & Garrison, 2006). Regardless of stated approach, most of these studies involved interviews with or surveys of the participants in order to get a better sense of their perspective (Paulus, 2010; Schrum et al., 2005; Sherer et al. 2003;Vaughan, 2010; Vaughan & Garrison, 2005, 2006;). The interview data were typically analyzed using some form of emergent thematic analysis (Paulus et al., 2010).

Two of the studies made a direct comparison between the online and the face-to-face discussions. In both cases, the face-to-face discussions were recorded and transcribed for analysis. Vaughan and Garrison (2005) applied the cognitive presence coding scheme to both sets of discussion while Berger et al. (2008) used grounded theory to create a coding scheme that was then applied to both sets of discussions. Both of these studies reported a continuous flow of discussion between the two venues.

In summary, while there is a variety of methods used to research blended faculty development projects, there is a commonality of obtaining significant feedback from the participants. This makes sense in light of the professional and often collegial status of the participants. It is also clear that various coding schemes are useful for illuminating specific aspects of the project, but that more holistic approaches are needed in order to understand the overall project.

Best practices in blended faculty development.

The following is my synthesis of best practices as derived from the specific studies on blended faculty development described above. The two overarching themes within the best practices deal with participation and facilitation. Based on my prior experience with faculty development, I was aware that simply getting faculty members to participate can be a major challenge. Once they are participating, facilitating the quality of that participation becomes a lot easier. This discussion will begin with design considerations that increase participation (including timing, group size, and institutional support) and facilitation considerations including organization of the online environment and facilitator actions.

Timing considerations: duration and spacing. Blended faculty development projects for college teachers typically lasted one semester, while those for K-12 teachers lasted nine months to one year. These time frames, although partially based on convenience, served to keep the projects within the context of the faculty member's practice. As a negative example of why this is important, the project studied by

Fitzgibbon and Jones (2004) operated on a six-week time frame and their participants reported scheduling conflicts with grading and other faculty responsibilities.

The timing of the face-to-face meetings seemed to effect participation. In all cases, the projects began with some form of face-to-face meeting to organize the overall project and as Vaughan and Garrison (2006) reported, this meeting was critical for establishing a sense of community. In some cases, these face-to-face meetings were long 'intensives' lasting multiple days (Hanlin-Rowney et al., 2006; Lee et al., 2010; Owston et al., 2008), but sometimes they were relatively short meetings lasting half a day (Vaughan & Garrison, 2005, 2006) or just a few hours (Sherer et al., 2003; Schwier et al., 2009). After that it was common to have the face-to-face meetings or workshops approximately every two weeks with asynchronous discussions in between (Sherer et al., 2003; Schwier et al., 2009; Vaughan & Garrison, 2005, 2006). Owston et al. (2008) compared three different K-12 programs and suggested that the closer together the face-to-face meetings, the better the overall participation. In that case, the difference was between meetings held nine months apart and meetings held every 6 weeks. In keeping with this trend, Berger et al. (2008) achieved very strong participation from their K-12 teachers with monthly meetings. Although increasing the frequency of the face-to-face meetings increases overall participation, there is the obvious drawback that having them too close together would negate the time-saving benefit of the blended approach.

There were two contrasting variations to the general pattern of biweekly meetings. The nursing faculty project (Lee et al., 2010; Paulus et al., 2010) held two of its five synchronous meetings online and reported a general decrease in participation over time.

While the venue was not the only factor contributing to the decline, this decreased participation with decreased frequency of face-to-face meetings is in line with the observation that more frequent face-to-face leads to more overall participation. In contrast, the transformative collaborative inquiry reported by Hanlin-Rowney et al.(2006) had only a pre-project intensive and no face-to-face meetings during the project but had a significant degree of participation. In that project, the spontaneous and collaborative organization served to encourage participation. Other factors influencing participation will be addressed next.

Group size considerations. These studies indicated that smaller groups of participants (between 6 and 14) seem to have more overall participation than larger groups. Lee et al. (2010) had 25 initial participants, but several of their workshops had less than 50% attendance and they reported that "not all faculty needs were met" (p. 25). The project of Schrum et al. (2005) started with 30 participants but only 70% of them completed. On the other end of the spectrum, Vaughan and Garrison (2005) had 12 participants and reported a fairly high degree of participant satisfaction while Hanlin-Rowney et al. (2006) had only 7 participants and had a very interactive group. While there are other factors involved, smaller groups seem to allow for more of a community building which can lead to collaboration while larger groups may not lend themselves to such collaboration.

Institutional support. Although institutional support was reported as being critical to success within almost every report, the levels of that support varied considerably in the projects that I reviewed. The ITBL project reported by Vaughan and Garrison (2006)

represented the upper end of this variation as that project provided grants valuing between $5000 and $10,000 to pay release time for participants to join the project. The ITBL project also included substantial support from instructional design experts that worked with the participants.

In the middle range of support, the nursing college project reported by Myers et al (2011) involved institutional support in terms of departmental leadership and instructional designers and an outside facilitator, but did not include any release time for participants. This lack of release time was voiced as a concern of the participants (Lee et al., 2010). The teaching center in the study by Sherer et al. (2003) provided organizational and facilitative support to the FLCs that they sponsored and also provided small grants (around $500) for supplies and refreshments.

At the lower end of support, the VLC project reported by Schwier et al (2009) was strictly voluntary with the only support being the organization and facilitation of the discussions. The online transformative learning experience reported by Hanlin-Rowney et al (2006) had the least support of all as the participants facilitated their own inquiry. This high degree of participation without institutional support suggests that intrinsic motivation may be stronger than other factors.

Facilitation. Rovai (2007) provided a conceptual review of the literature on facilitating online discussions in undergraduate courses. Because this article was not empirical and it focused on undergraduate students instead of faculty members it was not reviewed above. However, Rovai suggested that facilitation occurs by both design and direct action. He also provided many critically important considerations that were not

mentioned in the faculty development studies reviewed above and will be mentioned in the next two sections.

Berger et al. (2008) noted that the use of a variety of carefully constructed on-line reflection tools prompted substantial participation and a high level of reflection. They also reported, as did Paulus et al. (2010) and Vaughan and Garrison (2006) that participation was directly related to the immediacy of the need to learn that particular material. Myers et al. (2011) referred to this as *just in time teaching* or JITT. Rovai (2007) noted that although participation points can be used as extrinsic motivators, developing intrinsic motivation is more important. Rovai suggested that providing authentic discussion topics and well organized discussion forums helped develop that intrinsic motivation. Schwier et al. (2009) noted that participants should want to participate and the work of Hanlin-Rowney demonstrated the value of intrinsic motivation.

Rovai (2007) provided the following suggestions for direct facilitation of discussions: (a) develop social presence, (b) avoid becoming the center of all discussions, and (c) encourage everyone to participate by directly contacting them if needed. Social presence has already been discussed as part of the COI model above. In relation to the last two suggestions, the study by Schwier et al. (2009) provided a counter-intuitive example. In that project, the facilitators responded to every posting, but overall participation was low. Schwier et al (2009) noted that “while it may be possible to persuade or cajole individuals to participate online” such persuasion might not be appropriate for self-directed learning by professionals (p. 13). They also noted that their

participants may have considered the online discussion as optional and chose to participate more in the face-to-face venue instead. This negative example serves to illustrate a summary of these considerations which is that no single aspect of design or facilitation can account for levels of participation in blended faculty development projects. Faculty members are adult learners and bring with them their own expectations and choose to participate based on their needs. With this summary of this section, I can now turn to a final critique of the literature.

Final Critique of the Literature

I begin my final critique of the literature with a brief recap of the interactions of the theoretical frameworks I reviewed above. Although each of these four frameworks derive from their own rich history, I have demonstrated that they can be seen as converging into each other based on shared elements and that they support and complement each other based on their differences. The scholarship of teaching and learning emphasizes improving classroom teaching within three foci: connecting to the literature on pedagogy, collaborating with peers, and critical reflection. These collaborative and reflective processes focused on improving practice suggest action research in the form of a collaborative inquiry and they suggest transformative learning. The community of inquiry model incorporates the elements of a collaborative inquiry into the online environment and also requires reflection. Reflection, which can occur at different levels is thus central to this form of faculty development. An analysis of levels of reflection within a faculty development project is important because not all reflection is the same. Simply reporting that faculty members reflected does not provide sufficient

information. Different levels of reflection indicate different types of learning. As described above, Mezirow (1991) suggested that problem and process level reflections may lead to changes in meaning schemes (how we do what we do), but premise level reflection is required for transformative learning that leads to changes in meaning perspectives that may lead to substantive changes in practice Thus, these frameworks merge together in suggesting ways to improve teaching by encouraging faculty members to reflect critically on their assumptions.

Taken together the detailed analysis of the empirical articles on blended, collaborative faculty development provides a fairly clear view of the phenomenon. First, from the work of Vaughan and Garrison (2005, 2006), Lee et al. (2010), and Paulus et al. (2010) there is ample evidence that blended approaches are supportive of collaborative faculty development projects. As Vaughan and Garrison (2005) specifically asserted, "blended learning was successful in supporting a faculty development community of inquiry." (p. 11).

Although these studies described the online aspect as being more reflective in nature, they did not study the reflections directly. Instead there was a focus on the overall flow of the inquiry (Sherer et al., 2003; Vaughan and Garrison, 2005), levels of interaction (Schwier et al., 2009), design of the project (Lee et al, 2010) or lessons learned by the participants (Paulus et al, 2010). There has not been a close examination of reflective process within a faculty development project. As Vaughan and Garrison suggested, "a worthy topic for further research would be to focus on high level learning processes and outcomes using blended learning designs" (p. 11). From transformative

learning theory (Mezirow, 1991, 2000), it is clear that reflection can be considered just such a high level learning process.

From the work of Lord and Lomicka (2007) and Whipp (2003), there is evidence that various levels of reflection can be identified within online postings of college students within a course setting. However, what has *not* been examined are the levels of online reflections when the participants are college professors operating from within their professional practice as part of a blended collaborative inquiry. Because transformative learning (Mezirow, 1991, 2000) is aligned with collaborative inquiry (Alcantara et al., 2010) and with the scholarship of teaching and learning (Kreber & Cranton, 2000), what is needed now is an examination of a blended faculty collaborative inquiry through the lens of Mezirow's levels of reflection. The dissertation addresses that need. The next section will describe the methodology employed in this dissertation.

Chapter Three: Methodology

Organization of this Chapter

This chapter begins with a reflexive exploration of my philosophical foundations because they establish the paradigm in which I operate. Next, it describes the purpose of this study and the design of the collaborative inquiry project being studied, including the participants and their selection. It then explores my methods of data collection and analysis, concluding with a discussion of issues of trustworthiness and value.

Philosophical Foundations and Reflexivity

Paradigms and epistemologies.

Before embarking on this research study, I examined my philosophical foundations in order to ensure that my questions, methods, and products aligned with my belief system (Creswell, 1998; Glesne, 2006; Hatch, 2002). The various research traditions are based on specific paradigms and have corresponding sets of assumptions related to ontology, epistemology, and methodology (Creswell, 1998; Hatch, 2002). Hatch (2002) noted a hierarchical relationship in that every research paradigm starts with an ontology that is understood by its epistemology which contains its methodology and creates a set of products. Glesne (2006) also noted these relationships in her description of qualitative research by noting that "paradigms are frameworks that function as maps or guides for scientific communities" (p. 6) and they also determine the kinds of problems and acceptable theories and explanations that can be used to solve those problems.

Ontology is the primary view of the "nature of reality" (Creswell, 1998, p. 75; Hatch, 2002, p.13). Epistemology describes "the relationship of knower and known"

(Hatch, 2002, p. 13) and defines “how what exists may be known” (Glesne, 2006, p. 6). Methodology describes “the research process” (Creswell, 1998, p. 75) and “how knowledge is gained” (Hatch, 2002, p. 13). In order to ensure that my research methods align with my personal epistemology, I address my personal beliefs related to these concepts in the section below.

Personal epistemology.

As a community college professor trained in the disciplines of biology and chemistry, I tend to think of the world first from an objective, physical reality viewpoint. Although my training in philosophy is limited, I have concluded that I am a post-positivist. I choose this label primarily based on the descriptions of post-positivism given by Hatch (2002). Specifically, I believe in the existence of a physical reality that is observable, measurable, and understandable (at least to a useful degree). However, I differ from Hatch’s description of post-positivists in that my epistemology recognizes that most of our knowledge about reality is created from within our relationships. These relationships are both with that reality and with other people. It is the relationships with others that lead us to make sense of that physical reality. It is the attempt to explain what we have experienced to others that leads us to create better explanations (laws, theories, hypotheses) and it is with others that we check to see how well our explanations fit with the reality. Trochim (2006) calls this form of post-positivism “critical realism,” in which the researcher believes in an independent reality, but recognizes that observations and our theories about that reality are imperfect. According to Trochim (2006), post-positivists “believe that we construct our view of the world based on our perceptions of it” (p. 2).

My personal epistemology is generally aligned with social constructionism (Gergen, 1999). However, I would have to classify myself as a "weak constructionist" because I cannot agree with the "strong constructionist" statement that "nothing is real unless we agree it is" (Gergen & Gergen, 2004, p. 10). More concisely, I recognize that our human understanding of the world is socially created, but hold that there still exists a physical reality that we cannot change by simply describing it differently. Our relationship to whatever is "out there" (Gergen, 1999, p. 8) may change, but the "whatever" exists regardless of our understanding of it. More recently, Gergen (2011) noted that the boundaries between social constructionism and other theories are becoming less rigid and that the "lines are fuzzy" (p.1). "There are theories and practices that were once quite alien to constructionism, but are slowly merging with it. Cognitive constructivism is a good example" (Gergen, 2011, p. 1). Thus, although I currently choose to only partly align myself with social constructionism, as the lines continue to become more fuzzy, my alignment may change.

As a biologist I seek to understand the natural, physical forces that affect living things, but as a teacher I realize that there may be multiple perspectives and understandings of the values that those forces of nature hold in our lives. These perspectives are what Creswell calls "axiological assumptions" (1998, p. 75). My personal philosophy takes into account the concept of two possible areas of research or inquiry, each with its own set of philosophical assumptions. Wood and Kroger (2000) refer to these two areas of inquiry as two realms: "*res naturum*, natural things located in the realm of nature" and "*res artem*, events constructed …in the realm of culture" (p. xi).

This dual-reality concept is echoed by Stake's description of the "rationalist-constructivist view" of external and internal realities (1995, p. 101). Stake notes that the two realities may be blended into a third "rational reality" in which our experiences are interpreted. Since Stake's third reality is based on interpretation, it fits into the cultural realm because interpretation is "wholly enmeshed in the complexities of language" (Wood & Kroger, 2000, p. xii). That is, Stake's rational reality is the cultural interpretation of the external reality that Gergen simple calls "whatever is out there" (1999, p. 8). For my personal philosophy, I believe that although the scientific understandings of the physical world are socially constructed, that does not negate the existence of an external physical reality.

Returning to the broader relationships of paradigms and research traditions, it seems to me that qualitative approaches are better suited for the study of the human interactions and meaning-making that occurs within a collaborative inquiry (CI). While there are many different methods that fit under the qualitative research umbrella, Creswell notes that they all share an "interpretive, naturalistic approach" (1998, p. 15) in which the researcher acts as the primary research instrument. Stake (1995) also notes the interpretive (and, hence, subjective) stance of the qualitative researcher. While objectivity is one of the hallmarks of traditional natural science (i.e., biological or chemical) research, I believe that no research is ever truly objective. The researcher regularly makes subjective (albeit rational and logical) decisions about research topics and methods. Even supposedly objective research standards, such as confidence intervals in statistics, involve human decision making.

The subjective stance of a qualitative researcher can be seen as necessary and useful when one considers the alternative results. Spradley and Rynkiewich (1975) compiled a collection of essays and research into American culture that was dubbed "the Nacirema". Many of those articles showed the humorous parody that results when we attempt to "be objective" and act as a "pure observer" of our own culture. While that volume also included some more serious works, those were mostly done by true outsider researchers observing American life. As Herr and Anderson (2005) point out, insiders trying to pose as outsiders are misleading their co-participants and readers. In short, when an involved participant attempts to write from an "objective view," the result is a humorous parody at best and untruthful reporting at worst. While I still value the traditional research methods for studying physical processes, I find that qualitative approaches are better suited for exploring social problems (Creswell, 1998).

Research Design and Procedures

Choosing to do a case study.

Based on my research question and philosophical assumptions, I have chosen to employ the case study research method to more fully explore the ongoing collaborative inquiry. The case study method is consistent with my weak constructivist epistemology (Hatch, 2002), but is also consistent with my more post-positivist ontology (Merriam, 1998). The case study method also involves a holistic "exploration of a 'bounded system' … over time through detailed, in-depth data collection involving multiple sources of information" (Creswell, 1998, p. 61). The on-going collaborative inquiry is bounded by time, location, and the process involved. Case study research is often performed to

evaluate a project, especially when the "dynamics of a program" are of interest (Merriam, 1998, p. 39). Although I was generally interested in the effectiveness of this approach, my primary interest is in its ability to "illustrate the issue" (Creswell, 1998, p. 62) of how online reflection occurs within a blended CI. As Merriam (1998) asserts, case studies are "employed to gain an in-depth understanding of the situation and meaning for those involved" (p. 19) and are "a particularly suitable design if you are interested in processes" (p. 28). Thus, a case study approach best allows me to explore the process of this collaborative inquiry as a way to improve my practice as a faculty development coordinator, which makes this dissertation a form of action research.

Participant selection and demographics.

I recruited participants by e-mail invitation sent to the entire faculty using a list-serve. While faculty members from all departments were invited, I limited participation to the first 15 volunteers. By the end of fall semester in December 2007, I had 13 volunteer participants, but three of them dropped out before the CI began. Three more dropped out after the first meeting, leaving seven remaining participants. Five of us were from the Natural and Behavioral Sciences (NBS) department, with one person each from the Liberal Arts and the Library Services departments. Those of us from the NBS included three biologists, an anthropologist, and a chiropractor. Table 3.1 displays the participant demographics. All participants were white Americans with English as our primary language. Five of the participants were full-time instructors with full-time experience ranging from 2 years to 12 years at the time of the CI. Two of the participants were adjunct instructors.

Table 3.1
Participant Demographics

Department:	1 Library Services	1 Liberal Arts	5 Natural and Behavioral Sciences		
Discipline:	1 Anthropology	3 Biology	1 Chiropractics	1 Library Science	1 Philosophy
Education:	2 Doctorates	2 Doctoral Candidates	3 Masters		
Teaching Status:	5 Full Time	2 Part-time			
Gender:	4 Female	3 Male			

The organizational structure and physical layout of the school produced a considerable variability in how well we knew each other before the convening of this group. Some of us had shared adjoining offices, while others could barely recognize fellow participants before the project began. Those of us who were biologists knew each other quite well, as we all teach anatomy and physiology (A&P). I am the lead instructor for the first A&P course and another participant is the lead instructor for the second A&P course. One of the adjunct participants primarily taught A&P, while the other regularly taught anthropology, but also occasionally taught A&P.

Design of the CI faculty development project.

Based on my understanding of collaborative inquiries and blended learning (see chapter 2), I designed a four-month collaborative inquiry faculty development project. The purpose of this CI project was for the participants to learn more about the case study teaching method (Herreid, 2005) and then support each other as they developed and

implemented their own case study within the context of their class. After implementation, each participant was supposed to report back to the group on how well the case worked for their class. This structure created a system that allowed for the participants to plan their case, conduct their case, and then reflect on their actions.

While other topics (such as teaching critical thinking and group learning) were also explored, having the case study teaching method provided the focus that Murphy (1999) suggested was critical for group types of faculty development. The supporting atmosphere of the CI was also intended to help faculty members "make explicit their thinking underlying teaching" as suggested by McAlpine and Saroyan (2004, p. 224).

The plan for this CI included bi-weekly face-to-face dialogical meetings interspersed with online reflections. The face-to-face meetings focused on discussions of the mechanics of how to teach using case studies, while the online reflections focused on the participants' responses to what they were learning. The online aspect was conducted by way of the school's course management system (D2L). I used D2L to create discussion forums and also to post pertinent literature related to case studies and collaboration. I chose to use this blended approach in order to maximize the opportunity for participant reflection, while alleviating some of the time constraints, as suggested by Vaughan and Garrison (2005).

The first online reflection was focused on the participants' educational biographies and was posted to D2L before the first meeting. In addition to creating the social presence suggested by Garrison and Kanuka (2004), I intended for these postings to get us started on the path of reflection in general. The first meeting introduced

participants to the concepts of collaboration and dialogue, and included collaborative reflection on our educational biographies. Since I was the project initiator, I also served as the facilitator for both the face-to-face and online dialogues. In that role I worked to create a supporting dialogical space and to ensure that everyone's voice was heard.

As the CI progressed, we spent time exploring the literature on case study teaching and then 6 of us created and implemented a case study in our classrooms. Two participants did not create their own case study, but one of them used a case study that had been previously written. The cycles of reflection were maintained by interspersed online postings. As we implemented the case study teaching method, each of us developed our own way of evaluating the impact of these innovations on our teaching. The CI lasted from January to May, 2008. In September, 2008 the participants presented two in-service workshops to fellow faculty members of the college based on what we learned from the CI. One of those workshops was on the case study teaching method and the other workshop was on small group teaching and learning.

Data collection.

In order to produce a rich description of the project that is as accurate and informative as possible, I triangulated my findings by collecting data from multiple perspectives (Stake, 1995). These data provide both the full context of this CI, as well as the particular details that help to illustrate the online reflection. Triangulation involves more than combining methods, but should be a "principled array of methodological strategies" (Atkinson & Delamont, 2005, p. 832) that result in what Yin calls a "converging line of inquiry" (2003, p. 98). The triangulation of methods should then be a

logical set of methods that complement each other in order to fully illuminate the research questions. By illumination, I mean that the triangulation uses multiple methods to produce a more holistic view. Tracy (2010) describes the term “crystallization” as a way in which the researcher uses multiple perspectives to “open up a more complex, in-depth… understanding of the issue” (p. 844). That is instead of trying to use multiple perspectives to achieve a more accurate single truth; the multiple perspectives aim to produce a more complex construction of the phenomena being studied.

For this study, I took field notes during the face-to-face meetings, recorded observer reflections throughout the project, downloaded and transcribed the online reflections, and conducted interviews with the participants after the CI ended. Each of these data sources provides a different perspective of the CI. Each is more fully described below. Table 3.2 provides a “documentation table” (Anfara, Brown, & Mangione, 2002, p. 30) that connects the data collection method and analysis to specific research questions. As Merriam (1998) suggests, the collected data were also organized and categorized to create a “case study data base” (p. 194) which also served as an “audit trail” (p. 199) for validity purposes, which are discussed below.

Participant observations and reflections.

As the facilitator and organizer of the bi-weekly, face-to-face collaboration/ dialogue, I was a participant-observer. I audio-taped these sessions for later reference and used the tapes to capture key events. I took some notes during the face-to-face meetings, but these were limited because I was actively participating. After each session I reviewed the tapes and wrote personal reflections that described the sessions and captured my

Table 3.2
Data Collection, Analysis, and Research Question Matrix

Data Source	Analysis	Research Question
Participant Observations and Reflections	Rich Description	1,2,3,4
Online Postings: Reflections and Discussions	Rich Description (overall patterns of postings)	2,3,4
	Thematic Analysis of Threads	2,3,4
	Rubric Analysis of the Levels of Reflection	4
	Contextual Analysis of the Levels of Reflection	4
Participant Interviews	Rich Description	1,2,3,4
	Thematic Analysis of Participant's Perspectives-overall	1, 2
	Thematic Analysis of Participant's Perspectives-online	1,2,3

personal perspective of them. The purpose of these data is to establish the overall context of the collaborative inquiry for use in the descriptions that are needed for the warranting issues discussed below. In addition, my reflections on these meetings were used during the project to help me further facilitate participant reflection. That is, I used certain specific points from my notes to suggest points of further discussion in the online reflective postings and/or in later face-to-face discussions.

Online postings and reflections.

For the online reflection component of this faculty inquiry, we used the Desire2Learn (D2L) course management system because it is what our school uses for all web-enhancement of courses and every participant had at least some familiarity with it. D2L organizes discussion boards into Forums (general subject areas) which are further divided into more specific Topics. Individual participant postings are called messages and

every message must be placed within a topic. In order to provide some initial structure to our postings, I established six Forums: Administrative Issues, Ron's Research, Biographical Reflections, Reflections on the Literature, Reflections on the Process, and Case Study Development. Each forum included one or more topics, as described below.

The Administrative Issues Forum dealt with questions about meeting times and technical issues related to the D2L system. I used the Ron's Research Forum to provide my fellow participants with information about the research that I was conducting on this project.

The Biographical Reflections Forum had only one topic (with the same title) and served two purposes. First, I hoped that talking about ourselves would create the "social presence" suggested by Garrison and Kanuka (2004, p. 98) and second, I intended for these postings to get us started on the path of reflection in general. I created the Literature Review Forum to allow for discussion of the various articles we were supposed to read prior to the first face-to-face meeting. This forum had two topics: one for the reflection literature and another one for the case study teaching literature.

The Reflections on the Process Forum contained topics for each face-to-face meeting and was designed to be the primary location for reflections related to the content of what we were exploring as part of this CI. Due to a schedule conflict and other time limitations, the reflections on the fifth and sixth meetings were consolidated into a single topic, resulting in six total topics for this forum. The Case Study Development Forum contained seven topics: one for each participant to discuss the case study they were to

develop as part of this project. These topics also allowed for other participants to provide feedback on the development of these case studies.

After the overall project ended, I downloaded all of the discussions into word-processing documents. The D2L system allowed me to view each topic in a "printable" format that I copied and pasted. Because the printable view distorted some of the threads, I also captured "screen shots" of each topic that indicated how the postings were related by discussion "threads." A discussion thread is a series of related postings and responses. I used these screen shots to order the word document postings according to their discussion threads and, in the process, assigned each separate thread a letter. I then labeled each individual posting with a letter and a number, representing its thread and its chronological position within that thread. This created a detailed data set with an intrinsic label and retrieval system. While each posting can be identified by its forum, topic, thread, and position, I found that I did not need to refer to the forum during the data analysis stage, so I simplified this to a three-part labeling system. As an example, Alba's response to Phil's reflection on the first meeting is labeled as "1st Mtg, D-4" because Phil's reflection initiated the fourth thread (letter D) in that topic and Alba's was the fourth posting (third response) within that thread. Figure 3.1 shows the thread view of this discussion topic. All names shown are pseudonyms, except my own.

A-1	Ron' Initial Reflection	RON	Feb 2, 2008 7:12 PM
A-2	Re: Ron' Initial Reflection	SUSANA	Feb 6, 2008 3:02 PM
A-3	Re: Ron' Initial Reflection	BOB	Feb 6, 2008 3:12 PM
A-4	Re: Ron' Initial Reflection	RON	Feb 6, 2008 8:20 PM
A-5	Re: Ron' Initial Reflection	NANCY	Feb 11, 2008 3:00 PM
A-6	Re: Ron' Initial Reflection	RON	Feb 12, 2008 10:27 PM
A-7	Re: Ron' Initial Reflection	BOB	Feb 13, 2008 12:31 AM
B-1	Bob's initial reflection	BOB	Feb 5, 2008 6:35 PM
B-2	Re: Bob's initial reflection putting bias aside	RON	Feb 6, 2008 12:03 AM
B-3	Re: Bob's initial reflection	BOB	Feb 6, 2008 10:10 AM
B-4	Re: Bob's initial reflection: Grading	RON	Feb 6, 2008 2:23 PM
B-5	Re: Bob's initial reflection	SUSANA	Feb 6, 2008 2:50 PM
B-6	Re: Bob's initial reflection	BOB	Feb 6, 2008 2:58 PM
C-1	Betty's Initial Reflection	BETTY	Feb 6, 2008 12:25 AM
C-2	Re: Betty's Initial Reflection	RON	Feb 6, 2008 2:24 PM
D-1	1st reflection	PHIL	Feb 8, 2008 11:54 AM
D-2	Re: Phil' 1st reflection	RON	Feb 8, 2008 1:57 PM
D-3	Ron's Goals	RON	Feb 8, 2008 2:04 PM
D-4	Re: 1st reflection	ALBA	Feb 8, 2008 2:44 PM
D-5	Re: 1st reflection	SUSANA	Feb 20, 2008 10:54 PM

Figure 3.1 Screen Shot of the 1st Meeting Reflections Showing Thread View

Participant interviews.

At the end of the semester I conducted an interview with each of the participants. These interviews followed the semi-structured protocol which is more fully described in Appendix 3. The semi-structured format includes a set of open-ended questions (Creswell, 1998; Merriam, 1998) about the participant's perspectives of the CI in general and the reflection in particular. The initial questions were followed by probing questions as needed to help us both further understand their perspective.

Before I conducted the interviews with the participants, I conducted trial interviews with two non-participant colleagues using my interview protocol. During this trial interview I checked to ensure that the planned questions were clear and understandable. Based on the success of the trial interviews, I did not have to change my primary questions, but I did have a better understanding of the process and an idea of how participants might respond to the questions.

Each of these interviews was audio-taped and then transcribed as a way to fully capture the content, text, and context. During each interview I did take some notes, but I focused my attention on the interview process itself. Immediately after each interview I also wrote out field notes on my impression of the interview. After transcribing the interviews, I integrated my notes with the transcription to create a more holistic understanding of the interview itself.

Data analysis.

Data analysis in the qualitative tradition is a "systematic search for meaning" (Hatch, 2002, p. 148). For a case study such as this one, Stake (1995) suggests providing

a rich description of the context and then searching for patterns that address the specific research questions. While all of the data are used to produce the context and is analyzed for these patterns, I performed the following specific analyses on each of the data sets, as described below.

Participant observation data.

The field notes and personal reflections that made up my participant observation data were used in many ways for this study. First, as mentioned above, they were used during the project to help facilitate further reflection. Second, these data served as a source for creating a description of the context of the CI. Third, I used my personal reflections to guide my search for overall patterns in the reflective aspects of this CI, as suggested by Merriam (1998) and Stake (1995).

Online postings.

Once I had collected and labeled all of the postings within word documents, I printed them and placed them into a binder for ease of review. I also organized the contents of these postings into table form, with a blank column for entering notes and coding information for further analysis. The online reflection transcript data were organized for analysis in several ways. The data were first sorted chronologically and by thread-view to create a descriptive overview of the general patterns of who was posting, when, and how often. These threads were then subjected to a subject-based thematic analysis (Merriam, 1998) in which I focused on the content of the discussion. I then coded each posting based on indicators that reflection was occurring at the content, process, or premise level, as described by Kreber and Cranton (2000). I finally conducted

an “intrinsic contextual analysis” of the premise level reflections in order to determine the overall patterns that lead up to the premise-level reflections (Wood & Kroger, 2000, p. 127). Each of these analyses will be more specifically described below.

Descriptive overview and thematic analysis.

I began my analysis of the online data by looking for general frequency and holistic patterns of overall postings. For this section, the unit of analysis was the entire posting. This analysis established the general context of who was posting and how often. I then conducted a thematic analysis of the online postings by searching for “categories or themes that capture some recurring pattern” (Merriam, 1998, p. 179). I accomplished this by carefully reading each posting and noting both the overall subject matter and anything interesting that “stood out” for me related to the posting. I did this systematically, reading each posting within each topic. I typed my notes into a word document, annotating the specific posting (for example: 2d Mtg, A-2) that generated each comment.

I completed this thematic analysis for the first three forums (biographical reflections, literature reflections, and first meeting reflections) and then paused to begin looking for overall patterns. I added these general patterns to the end of my document and then continued with my reading of the rest of the postings. This allowed me to perform on-going comparison and revision of the categories (Merriam, 1998). Along the way I added more general patterns (or themes) to the growing list. After working through each forum once, I went back and re-read each posting, looking for any additional themes. Once I felt that I had most of the themes identified, I then reviewed them and reorganized them into categories that were more coherent and “conceptually congruent” (Merriam,

1998, p. 184). The major themes identified from the online data were later compared and combined with the major themes from the interview data as a form of triangulation (Merriam, 1998; Stake, 1995).

Levels of reflection analysis.

In addition to a holistic understanding of what we discussed online, I was interested in how deeply we reflected online. As described in the literature review, depth is related to Mezirow's (1991, 2001) transformative learning (TL) theory that posits that reflection is essential to change and occurs at three levels: content, process, and premise. Kreber and Cranton (2000) applied Mezirow's concept of TL to faculty development and the scholarship of teaching, and developed indicators for each of these three levels of reflection. While I initially planned to use Kreber and Cranton's (2000) indicators as originally written, I found early on that that many of their indicators were not directly applicable to the online environment. Their indicators are based on retrospection by faculty members over an extended period of time, whereas the online reflection data captured thoughts of the participants at the moment of their posting. Kreber and Cranton's model also subdivides reflections by domains which they list as "instructional, pedagogical and curricular" (2000, p.476). Thus, their complete model has nine dimensions: three domains and three levels within each domain. Because I only had seven participants, I was concerned that the domain subdivision might unnecessarily spread the data too thinly. As described in the literature review, I was also concerned that overlapping of meaning between the three domains would make the analysis process

problematic. So I decided to combine the applicable indicators from all three domains into a single set and look at only the levels of reflection.

I reviewed Kreber and Cranton's (2000) and Kreber's (2005b) indicators for each level and selected those that seemed most likely to appear in an online discussion. I then created additional indicators for different levels of in-the-moment online reflections. These additional indicators were based on Mezirow's original works (1990, 1991), which included detailed descriptions of the three levels of reflections. I also noted that some of the postings would be non-reflective, so I started with four categories: non-reflective, content, process, and premise levels. I arranged these categories and their related indicators into a table and used that table as a coding rubric for the level of reflection.

The unit of analysis for this coding rubric was specific statements made within each posting. A statement is a logical unit of meaning that is roughly equivalent to a sentence, but does not have to be a grammatically correct or complete sentence. In my analysis, the unit of a 'statement' is consistent with the term "comment" used by Vaughan and Garrison (2005, p. 8) in their analysis of online reflections in a blended faculty development project. Based on this unit of analysis, a single posting could contain multiple statements of reflection and thus could contain multiple levels of reflection.

To test and refine the initial rubric, I coded all of the postings in the Biographical Reflections and First Meeting Reflections topics. I chose those two topics because they focus on two different subjects (personal biographies and face-to-face interactions), but they were both of sufficient length (16 and 20 postings respectively) to provide some feel for the utility of the indicators. They were also short enough to allow for a complete

coding within a reasonable amount of time. Many of the statements in these topics fit easily into the codes, while some statements were obviously not reflective at all (such as "can you send me a copy of that"). I noticed, however, that there were some statements that were reflective, but were not critically reflective.

Mezirow refers to contemplation as "thoughtful action" and "introspection" as "non-reflective actions," (1991, p. 107) but he was operating from a perspective in which only critical reflection counted as reflection. In view of the more common understanding of contemplation as a form of reflection, I created a fifth code for contemplation/non-critical reflection. From Mezirow's original work, I also noted that his concept of critical reflection was oriented to problem solving and that his first level of reflection was focused on the content of the problem. Since the term "content" implies subject matter in most educational settings, I chose to label the first level of critical reflection as "problem/content." I also noted that Mezirow's second level was not just about the "process," but also about the results or the "product." Putting all of this together, I adjusted some of the indicators for clarity and created a revised rubric with five levels: non-reflective, contemplative/non-critical, problem (content), process/product, and premise (see Table 3.3). I then systematically coded all of the postings from the first two topics using this revised rubric, adjusting code assignments as needed. Appendix 4 contains an expanded version of this rubric with example statements from the data.

Table 3.3
Levels of Reflection Coding Rubric

Level of Reflection:	Mezirow's (1991) Descriptions	Kreber & Cranton's (2000) Indicators	Bridges (2012) Online Indicators
Non-reflection	Non-reflective habitual action	No indicators given for non-reflection	-Discussing logistical or administrative issues -Asking clarifying questions that did not create further reflection
Non-Critical Reflection/ Contemplation	Non-reflective thoughtful action or introspection	No indicators given	-Describing an experience without noting any problem with it.
Content (Problem) Reflection	-Description of the problem -Questions of "What"	-Discussing materials and methods with students or colleagues -Reading articles on how to teach	-Describing how we teach -Noting a concern with how we teach -Describing a concern or problem with how our students respond to our teaching
Process (Product) Reflection	-Strategies and procedures of problem solving -Checking our decisions - Assessing the adequacy of our efforts -Questions of "How/How Well"	-Gathering data on student's perceptions of methods and materials -Comparing results of research on teaching to results in our own classroom -Asking for peer review of course outline -Conducting an action research project on student learning	-Discussing changes we have made or would like to make to our teaching -Asking for/providing peer feedback about our ideas for change -Discussing the results of alternative teaching methods -Discussing research literature on alternative teaching methods

Table 3.3
Levels of Reflection Coding Rubric, Continued

Premise Reflection	-The critique of assumptions -Merit and functional relevance of the problem -Problem posing as opposed to problem solving -Questions of "Why"	-Participating in philosophical discussions on student learning	-Discussing why certain outcomes are more important than others -Stating beliefs or assumptions about teaching or learning

As mentioned above, this was a qualitative rather than a quantitative analysis. Although I did count the frequencies of occurrence of each level of reflection and later will display descriptive statistics based on this counting, my intent was not to create a quantitative proof of the rubric. This is in keeping with the assertion by Garrison et al (2006) that "… assigning frequencies to the classifications is an aid in understanding patterns; this does not make it a quantitative, inferential statistical procedure." (p. 4). Also, this rubric is an exploratory attempt to find online indicators of reflection at different levels as suggested by Kreber and Cranton (2000). A quantitative verification of this rubric will require a separate study.

Contextual analysis of the premise level reflections.

Once all of the statements within every topic were coded for level of reflection, I conducted a contextual analysis (Wood & Kroger, 2000). That analysis sought to

discover patterns related to what topics or actions lead us to reach that premise level of reflection. For each instance of premise level reflection, I also noted the disorienting dilemma, its corresponding subject, and the pattern to how the posting reached that level of reflection. I placed all of this information into a table and then looked for any patterns in the context that led to this level of reflection. When I compared the premise level reflections to the themes identified by the topical thematic analysis, I could not recognize any pattern. That is, there was no particular topical theme which seemed to generate more or fewer premise level reflections. However, I did notice that there were some patterns in the relationship between the various levels of reflection. That is, the order in which the various levels of reflection occurred appeared to follow some specific patterns. These patterns are described as part of the findings, below.

Participant interview data.

Data from the participant interviews were subjected to a thematic pattern analysis (Merriam, 1998, Stake, 1995). I accomplished this by first reading all of the interview transcripts to get an overall feel for their perspectives. I then organized participant responses by interview questions. This gave me an overall look at participant perspectives from which themes began to arise. Keeping each participant's pseudonym with their individual answers, I grouped similar answers together and then regrouped them until the themes fully emerged (Merriam, 1998). The themes identified by this process are reported in the findings chapter.

Trustworthiness: Issues of Validity, Credibility, Ethics, and Value

Trustworthiness.

As I conclude this chapter on methodology, I turn to issues of how the final product is trustworthy. As Merriam (1998) states trustworthy research is "concerned with producing valid and reliable knowledge in an ethical manner" (p. 198). Within the positivist tradition, the terms reliability and validity imply that the research somehow manages to get close to the objective reality that is out there somewhere. But qualitative research explores the realm of culture and seeks to "understand some social phenomena from the perspectives of those involved" (Glesne, 2006, p. 4). As Merriam (1998) suggests, the meaning of trustworthy "takes different forms" in qualitative research (p. 198). Guba and Lincoln (1989) suggest four criteria for judging trustworthiness in qualitative research as: credibility, dependability, confirmability, and transferability (p. 242). Each of these criteria is defined and further explored below in relation to this study. In addition to those four criteria, Glesne (2006) also suggests some form of "clarification of researcher bias" (p. 37) as a way to augment the trustworthiness of qualitative research in general. This clarification of bias is also known as bracketing and will be discussed first.

Bracketing.

Prior to starting this research, I engaged in a bracketing interview (Laverty, 2003) in which I worked to make explicit the assumptions and preconceived notions I had about the study. While bracketing is more often done in phenomenological research, it can also be seen as an aspect of action research in what Heron and Reason call "bracketing and re-

framing" (2001, p. 184). I also use the term bracketing because it harkens back to the idea of writing observer comments in brackets separate from the raw data. I see both processes as a form of suspension (Bohm, 1996) in which I make my assumptions and biases more explicit. This process helped to insure that I remained open to many possible interpretations of the data and did not simply verify what I expected to find (Yin, 2003).

Credibility.

Credibility is based on how well the reported realties match the realities and perceptions of the participants. Guba and Lincoln (1989) suggest that this is attained by prolonged engagement and involvement. The goal here is to spend sufficient time in the research setting to get a good sense of the participants' perspectives. Since I was researching my own practice in conjunction with my colleagues, and was a participant in the collaborative inquiry, I meet the criterion of prolonged engagement. In addition, I used the triangulation and crystallization processes described in the data collection section above to ensure that I had a complete, holistic view of the project from multiple perspectives.

Dependability and confirmability.

Dependability requires "stability of the data over time" (Guba & Lincoln, 1989, p. 242) and confirmability requires that the findings are "rooted in the data themselves" (p. 243). To achieve these goals, Merriam (1998, p. 207) suggests an "audit trail" in which the researcher strives to create a data trail that logically connects the observations to the conclusions. For the interview data I kept each individual transcript and my annotated transcripts. As I grouped the interview data for thematic analysis, I tracked

each statement by participant so that they could be credited to the correct participant. For the analysis of the online postings, the data were collected from a discussion board that is still available online. I used the three-part labeling system described above to track each posting and statement back to the original online data set.

To increase confirmability or what Merriam (1998) calls "internal validity" (p. 201), I conducted a member check by sharing the near final draft of my findings chapter with my six co-participants. I sent this draft by e-mail along with a request to look over it and give me any feedback or clarification that they felt was needed. None of the participants had major concerns with my findings. Two of the participants replied with short notes of agreement such as: "It appears accurate and clear to me" and "Your conclusions do not seem off-base to me." One of the participants provided suggestions for rewording certain passages and even noted an instance in which I had repeated the same finding in two sections. That person also suggested an alternate interpretation of their online postings. Based on those suggestions, I made minor revisions to the findings chapter.

Transferability.

The last criterion suggested by Guba and Lincoln is transferability, which replaces the traditional research concept of generalizability. Transferability is possible only to the extent that readers of these research conclusions can identify how my research conditions match other conditions. This criterion is similar to what Tracy (2010) calls "rich rigor" (p. 840). To meet the criterion of transferability, I provided a full description of the context of this case in chapter one and used the triangulation methods described above to

provide as holistic a view of the project as possible. This rich description should provide readers of this dissertation ample evidence to base their comparison of my findings to other circumstances.

Ethics.

The proposal for this research was submitted to both the University of Tennessee Institutional Review Board (IRB) and the Pellissippi State Community College IRB for approval. Pellissippi State's IRB approved the proposed research on April 10th, 2008 and the UT IRB granted approval on April 11, 2008. The participants each signed an informed consent form, copies of which are on file. A copy of the UT IRB approval letter and an example of the consent form are in Appendix 5.

One particular item of ethical consideration bears a bit more discussion. Because this dissertation studied a collaborative inquiry involving a very small number of participants, anonymity could not be guaranteed. This fact was specifically mentioned in the informed consent form. To achieve some degree of confidentiality, pseudonyms were applied to the data early in the analysis process and are used throughout the writing.

Value.

All good research has value to three audiences: "for me, for us, and for them" (Reason & Marshall, 2001, p. 413). While it may be possible for research projects to emphasize one value over another, I would like to provide at least some value for all three. Regardless of any specific outcomes, this project has helped me improve my practice simply because I have more thoroughly examined it. In a similar same way, this project has been useful to all participants because we have collaboratively studied a new

teaching technique and examined our practice. The value of this project to them (the larger world, as expressed in the literature) is that it adds to our understanding of how online reflections occur and how they support faculty development in a blended CI and by participants within the online reflection that is part of a blended CI.

Summary

In summary, this chapter has provided a review of my epistemic assumptions and how they shaped the planning of this research project. I have also carefully described my process for collecting and analyzing data related to my research questions and how I worked to ensure the trustworthiness and ethical value of those analyses. In the next chapter, I present the findings that resulted from those analyses.

Chapter Four: Findings

Organization of the Chapter

As a case study, this chapter begins with a general description of the overall context and participation in this professional development collaborative inquiry (CI). Next it presents the findings related to participant perspectives on the overall effectiveness of this blended and collaborative approach to faculty development (research question 1), including their views on the relationship of the online reflections to their overall development (research question 2). Next it explores aspects of this CI that facilitated or inhibited online reflections (research question 3). Lastly, in this chapter I present findings related to the levels of reflections that occurred in the online aspect of this CI (research question 4).

Context of the Study

Literature reviewed.

At the beginning of this faculty development project, I asked the participants to read two articles to orient them to the CI process and reflection. The article by Kasl and Yorks (2002) provided an overview of how CIs were supposed to work and the article by Brookfield (2002) discussed various lenses that community college teachers could use for critical reflection. These two articles were only read cursorily by the participants and were not reflected on within their online discussions. Several participants mentioned in the first face-to-face meeting that had trouble relating to those articles because they seemed oriented more to researchers than to community college faculty.

I also asked the participants to review the literature on the case study teaching method (Herreid, 2005, 2007), which set the stage for how to write and implement case studies in college courses. In addition to those articles, we all watched two videos on how to implement case studies (Herreid 2002a, 2002b). Alba noted in her reflection that the case study teaching method had been used throughout her college career and Bob expressed some distrust of the literature. Those attitudes will be discussed further below.

Case studies developed.

Four of the participants developed or modified a teaching case study as part of this CI. These cases were developed over the length of the project, generally in the order discussed below. Participants posted draft versions of their cases to the discussion board and other participants commented on them and asked questions about them. These discussions about the cases sparked discussions of other aspects of teaching and often involved reflection.

I modified an existing case study on strokes so that it better structured the critical thinking of students by asking them to describe how the symptoms lead them to a diagnosis and how the diagnosis lead to their suggestions for treatment. Phil developed a case study dealing with treatment options for a man with late stage dementia. It asked students to consider the ethical implications related to who had the right to make decisions for this man and Phil suggested that it could serve as an introductory case for his medical or general ethics courses. Alba developed a case on Hepatitis that asked students to connect this disorder to multiple body systems. She wanted to use this as a capstone case for her second semester anatomy and physiology course. Susana also

developed a capstone case for her course. Her case involved a newborn with a severely underdeveloped brain (static encephalopathy) and she asked students to learn about and consider the treatments options and how they would affect overall development of this newborn.

Lessons learned.

As described in Chapter 3, I conducted a thematic analysis of the online postings to determine the overall context of the topics being discussed. While much of that data will be used in the finding below, I also identified themes related to the lessons that we learned as part of this CI. Because one of the interview questions also asked participants what they learned through this process, there was significant overlap in the two data sets. After triangulation of the data, I developed a more complete list of the lessons learned themes (see Appendix 6). Because those themes do not answer any of my research questions directly, I will not discuss them further in this chapter but they do provide insight into the overall context of this CI. Because participation was integral to the success of this project and to several research questions, I will explore how we participated in the next section.

Patterns of Participation

Timeline, attendance, and total postings.

By the end of this faculty development CI, we had a total of seven face-to-face meetings interspersed with six asynchronous online discussion topics about those meetings. Table 4.1 provides a timeline of the face-to-face meetings and shows when each online discussion topic began and ended.

Table 4.1
Time Line of Face-to-Face Meetings and Online Discussions

Face-to-face Meetings:	Online Discussion Topic:	First Post:	Last Post:	Total Posts
	Biographies	Jan 27	Feb 2	16
	Research Descriptions	Jan 31	Apr 24	9
Feb 1 (1st)	Reflection Lit	Feb 1	Feb 27	17
	Administrative Issues	Feb 2	Mar 16	6
	Ron's Case Study	Feb 6	Apr 14	46
Feb 13 (2nd)	2nd Meeting Reflections	Feb 13	Apr 4	25
	Observations	Feb 14	Apr 3	8
	Phil's Case Study	Feb 18	Apr 3	13
	Betty's Case Study	Feb 24	Feb 27	4
	Alba's Case Study	Feb 25	Apr 4	11
	Susana's Case Study	Feb 26	Apr 3	12
Feb 27 (3rd)	3rd Meeting Reflections	Feb 27	Apr 2	13
	Bob's Case Study	Mar 11	Mar 11	1
Mar 13 (4th)	4th Meeting Reflections	Mar 14	Apr 3	30
Mar 27 (5th)	5th/6th Meeting Reflections	Mar 28	Apr 24	26
Apr 3 (6th)	Nancy's Case Study	Apr 3	Apr 6	6
Apr 24 (7th)	7th Meeting Reflections	Apr 25	May 6	22

It should be noted from this table that at any one time, several different discussion topics might be active. For example, the first Meeting Reflections topic began the day after the first meeting (February 2) and continued past the second meeting to February 20. Thus this topic overlapped the second meeting reflections topic, Ron's Case, and also Phil's Case topic. Online discussions also continued for varying lengths of time, from less than one week (Biographies) to several weeks, with the longest being eight weeks (Ron's Case).

The seven participants who completed the CI had varying degrees of participation in both the face-to-face meetings and online activities. As detailed in Table 4.2, only three of us had perfect attendance at all seven face-to-face meetings, but all participants attended at least four of the meetings. Two members had significant life issues that interfered with their face-to-face participation during the middle of this project (third through fifth meetings). Nancy was working to complete her dissertation and Bob was traveling on family business and also had some health problems.

Everyone participated in the online discussions, with myself (128 postings), Phil (39), and Alba (34) being the most active. As Table 4.2 shows, attendance rates in the face to face meetings did not necessarily correspond with the total number of posts. For example, Betty, who attended every meeting, posted the fewest total times. Table 4.3 shows the total number of postings per topic by participant and the percentage of the total postings read by each participant. It should be noted that the D2L course management

Table 4.2
Participation: Face-to-face Meeting Attendance and Total Postings

Date	Alba	Betty	Bob	Nancy	Phil	Ron	Susana	Total
Feb 1 (1st)	P	P	P	P	P	P	P	7
Feb 13 (2nd)	A	P	P	P	P	P	A	5
Feb 27 (3rd)	P	P	A	A	P	P	P	5
Mar 13 (4th)	P	P	A	A	P	P	P	5
Mar 27 (5th)	P	P	A	P	P	P	P	6
Apr 3 (6th)	A	P	P	P	P	P	P	6
Apr 24 (7th)	P	P	P	P	P	P	P	7
Total Mtgs:	5	7	4	5	7	7	6	NA
Postings*	34	5	18	32	39	128	28	284

P = Present, A- Absent * Total number of online postings in all topics

system indicates that a posting has been read if a participant opens that message. While it is possible that participants could just click on the posting without actually reading it, there was no incentive for them do that.

While Nancy had the fourth highest total number of postings (32), many of those postings were belated responses due to her absence during the middle portion of the project. Betty posted the least number of times (5), but she read 93% of the postings. In her interview, Betty described herself as someone who preferred to “keep quiet and listen.” She played similar roles in both face-to-face and online discussions where she was always present, but not always talking. Alba, Nancy, and Phil were very consistent posters, managing to participate in nearly every major topic. Bob and Susana both started off as consistent posters, but then decreased their level of participation. Both of them

Table 4.3
Total Postings by Participant and Topic

Topics:	Alba:	Betty:	Bob	Nancy	Phil	Ron	Susana	Total
Biographies	1	1	1	2	1	8	2	16
Reflection Lit.	3	0	2	0	0	11	1	17
1st Meeting	1	1	5	1	1	8	3	20
2d Meeting	5	0	3	5	0	11	1	25
3d Meeting	3	1	0	1	1	6	1	13
4th Meeting	3	0	0	2	7	12	6	30
5/6th Meeting	1	1	0	4	5	15	0	26
7th Meeting	2	1	1	2	3	13	0	22
Ron's Case	7	0	4	3	9	19	4	46
Phil's Case	1	0	0	1	6	4	1	13
Alba's Case	6	0	0	1	2	1	1	11
Betty's Case	0	0	0	0	1	2	1	4
Susana's Case	0	0	0	3	1	3	5	12
Bob's Case	0	0	0	0	0	1	0	1
Nancy's Case	1	0	0	4	0	1	0	6
Research/Observations	0	0	2	3	2	8	2	17
Administrative	0	0	0	1	0	5	0	6
Total Postings	34	5	18	32	39	128	28	284
% Postings Read	100%	93%	63%	100%	100%	100%	63%	

The order of the topics in this table follows their order as listed within their forums in the course management system (D2L). Percent postings read was calculated by the D2L system.

noted this in their interviews. The two topics dealing with other individuals' case studies were the only ones in which I was not the most frequent participant. Phil and Alba posted more often within the topics dealing with their respective case studies.

General pattern of online postings.

The first discussion forum was our biographical reflections. As described in the methods chapter, this forum served to get us started on the path of reflection in general. This worked to a certain degree because everyone posted their own educational history and that served to initiate our online reflections. However, only Nancy, Susana, and I replied to anyone else's post. As the facilitator, I posted a reply to everyone. The Literature Review Forum, which had two topics, had very little participation. Although the participants were supposed to read this literature prior to the first face-to-face meeting, I was the only one to post to this forum before the first meeting. I ended up posting 11 of the 17 total messages. Most of the discussion in this forum ended up being about the case study teaching literature, including the articles on the NCSST web site and a related set of DVDs produced by Herreid (2002a; 2002b).

The Reflections on the Process Forum contained six topics and was the most active (with 136 postings), as would be expected since it was so closely related to the on-going face-to-face discussions. Indeed, this forum contained the most truly "blended" discussions of all, as we often moved from face-to-face discussion to online discussion and back. The reflections on the face-to-face meetings typically started within one day of the meeting and continued for two or more weeks afterward.

The Case Study Development Forum was the second most active forum because it contained the direct discussions of this project's stated focus. As the facilitator, I posted my case first to serve as a model for others to follows. Because my case was first and our discussion of it led to so many other threads, the "Ron's Case" topic was the most active. Phil's, Alba's and Susana's case topics were about equally active. In those topics the online threads stayed focused more on describing the cases and exploring ways to improve them. This focus on problem description and solution exploration was evident in the level of reflection analysis of these topics, as will be shown below.

Since neither Bob nor Betty posted a case study that they were working on, their discussion topics had very few postings (one and four respectively). Several of us posted to Betty's Case with suggestions for what she could possibly explore, but she never responded to any of us. I posted once to Bob's Case to encourage him to start thinking about a case to develop, but like Betty, he did not respond. During their interviews, both Bob and Betty indicated that although they had not created a case study during the project, they planned on creating some new case studies in the future.

The last two forums, Ron's Research and Administrative Issues, were essentially miscellaneous categories and were not heavily used. I used the research forum to provide my fellow participants with general descriptions of updates on the research proposal I was writing about our project while the project was going on. Because neither of these forums was central to the developmental aspects of this project, they are not further analyzed.

Summary of participation patterns.

In summary, the participation patterns were varied, but showed that each of the participants found some way to be involved in the project. Participants were generally aware of how much (or how little) they were participating online as they noted this in their interviews. For some (Betty and Susana, for example), attending the meetings and reading online discussions were enough. Others (Alba and Nancy, for example) used the online discussions as a way to stay engaged after missing one or two meetings. Phil, who expressed his distaste for online discussion several times, ended up being the second most prolific poster after me as the facilitator. Based on the overall patterns of participation described below, I developed the following four classes of participation as exemplified by various participants:

(1) Regular Attendance and Robust Participation (Alba, Phil, Ron)

(2) Listening and Lurking (Betty)

(3) Dropping Away and Coming Back (Nancy, Bob-face-to-face)

(4) Slowly Slipping Away (Bob-online and Susana-online)

These patterns demonstrate that the online aspect added an extra avenue of participation that helped keep the participants engaged in the process even if they missed meetings. Now that the general context of the project has been presented, the next section begins to directly address the research questions.

Research Question One: Evidence of Effectiveness

While the previous section provides the overall context of this case study, this section evaluates the effectiveness of this CI. This section addresses the specific research

question, “How do participants perceive the overall effectiveness of this blended CI approach to faculty development?” This section begins with an overview of participant responses and then explore four themes identified from the participant interviews directly related to this research question.

Overall the participants indicated that they enjoyed the experience and thought this was an effective approach to faculty development. As Alba stated in her interview, “… based on everything that we did, it was a good experience.” Betty added that “it was a very positive experience…I think the interaction of faculty is impressive.” Even Phil, who had some specific criticisms of this project, stated that “despite those things, I thought it was successful.” Another aspect of overall effectiveness

Beyond these generalities, there were four themes related to the participants’ perspective of the overall project. These four themes are: (1) discussions with other faculty members can be beneficial; (2) teachers need to learn more about teaching and learning; (3) the supporting atmosphere made learning easier; and (4) the online aspects were part of the overall effectiveness. Each of these themes is discussed in detail below.

Effectiveness theme one: Discussions with other faculty members can be beneficial.

The first theme noted is an appreciation for the chance to discuss teaching with other faculty members. Phil echoed many of the others when he stated, “just getting faculty members together to talk about stuff can be very, very productive.” These discussion helped us to see how much we have in common and how “we are in the same business,” as Phil stated. Nancy pointed out that “… any time you are taking instructors

and encouraging them to really think about the way they teach is extremely useful." Betty contrasted this approach to our more traditional in-service approaches when she noted that: "I think small group work is probably much more effective than sitting in large groups of faculty in in-service type activities where there are 50-plus people in the room. There's much more time for interaction, more time for everyone to talk…"

Two negative aspects are related to this theme. First, participants did not like the two-hour long face-to-face meetings, especially since they occurred in the late afternoons. Phil added that he thought the face-to-face meetings were "sometimes over structured." This was based on his perception that we would sometimes move away from a productive discussion in order to stay on the agenda. The second negative aspect was that many of the participants were disappointed in the small size and relative lack of diversity within the group. Alba stated in her interview that, "A lot of the group dropped out, which I was disappointed to see. I was looking forward to the variety of opinions." Alba was referring to the fact that six potential participants dropped either before the first meeting or after the first meeting.

Effectiveness theme two: Teachers need to learn more about teaching.

The second theme I noted is that participants appreciated the chance to learn something new about teaching. Susana pointed out that "participation in this group has only enhanced my understanding of teaching … as well as the use of case studies." Nancy added that, "I think this was a useful forum to communicate new teaching methods." She also elaborated by pointing out that "not very many of the instructors have experience with learning about teaching methods period. We learn our craft, we get our

degrees, and we are able to teach it. But it does not mean we are good teachers." Although the participants enjoyed learning more about teaching, they almost universally expressed that they disliked reading the educational psychology literature. These comments were directed toward the two articles (Brookfield, 2002; Kasl & Yorks, 2002) that I had asked participants to read before our first face-to-face meeting. Thus, while participants recognized the need to learn more about their craft as teachers, they seemed to want to learn from each other rather than the literature.

Effectiveness theme three: The supporting atmosphere made learning easier.

The third theme is that the collaborative aspects of this project created a supporting atmosphere for learning. As Nancy stated it, "… you get to see how other people have applied the method and so …. You don't have to re-invent the wheel each time." Susana also found the group to be comforting as she noted that "hearing others express some of the same types of fears that they have as they try to teach their subject matter … I was kind of glad to find I'm not the only one that has some of those same sort of teaching fears." This support also extended to helping each other develop new or improved case studies. As Susana said, "being able to discuss, my particular case study was hugely inspirational for me." The supportive atmosphere gave the participants a safe space to explore their own concerns about teaching while learning about others' experience with new teaching methods.

Effectiveness theme four: The online aspects were part of the overall effectiveness.

The last theme relates to the overall effectiveness of this approach to faculty development and deals more specifically with the online aspects. My interview question asked the participants to discuss the "overall effectiveness of this approach." The first three themes above could have been directed just toward the collaborative and small group approach and not have considered the online aspects at all. However, the participants generally felt that the online aspects were part of the overall success. As Betty noted:

> The support of having the online aspect …added a lot to the process. And I think that it was reinforcing and also opened up other avenues of talk; more than perhaps discussion would have. So that, having both aspects of it, I thought, made it very positive.

Alba pointed out that, "I thought the online discussions were … a good venue for when we couldn't meet face to face, although I did enjoy the face-to-face meetings more." There was a general consensus that the online aspect was an integral part of the overall success of this CI.

Phil was the exception to this general consensus. He voiced his opposition to online discussions early in the project and repeated this perspective several times. He even mentioned his dislike of online discussion in his online project evaluation form. His major concern was that it was "very inefficient" because "I can talk ten times faster than I can type" and that "a large percentage of communication is non-verbal." Despite his

reservations, Phil was a very consistent poster to the online discussion boards. Even though he expressed his dislike of this component of the CI, he still participated in it.

Although the online aspect is identified as one of the themes of the overall effectiveness of this faculty development experience, there are still further details of the online activities to explore. The next section explores the details of specifically how the participants' perceived the online reflections.

Research Question Two: Relationship of Reflections

This section explores the findings related to Research Question 2: How do participants perceive the relationship between online reflection and their overall development during this collaborative inquiry? I identified four major themes in the participants' perspectives, as shown below. In addition to those four themes, I identified a fifth theme associated with the relationship between the online reflections and overall development. This fifth theme arose from looking at the overall patterns of participation (described above) and from statements made during the interviews. The five identified reflection themes are: (1) the online reflections can be challenging; (2) the online reflections allow the discussion to continue; (3) the online reflections allow for more immediate idea sharing; (4) the online reflections allow for more in-depth reflection; and (5) the online reflections allow participants to keep up while missing a meeting (or not).

Reflection theme one: The online environment can be challenging.

The first theme identified by the participants was that the online environment can be challenging to professors who are unfamiliar with it. The participants in this CI noted several specific aspects related to this theme. These included confusion over the structure,

lack of participation, and a perception of inefficiency or awkwardness in online discussions.

The structure of the multiple online forums and topics, with several of them active at once, created some initial confusion. Phil pointed out that the "...threads with multiple topics became pretty difficult to keep track of what was going on where." Other participants mentioned similar confusion during one of the early face-to-face meetings. As the CI progressed, however, this confusion generally subsided as the participants became more used to the D2L program and as the overall flow of events unfolded. Evidence for this decrease of confusion is seen in the overall patterns of participation described above. By the second and third face-to-face meetings, the frequency of postings suggests that participants were able to transition from online discussions to face-to-face discussions and back to online.

The participants also expressed concern over what they perceived as a general lack of participation. Phil stated it most directly as, "Participation was poor." The participants suggested three factors to explain their lack of online activity. First, they almost universally noted that they had trouble finding the time. Betty related this lack of time to the overall busyness of faculty when she stated: "Just not having enough time …. And there were a lot of things going on this spring semester. A lot of things at work, a lot of outside activities…that kept me busy." The time factor also caused Bob to note that, "It was real easy to get behind."

In addition to difficulty in finding time to do the postings, participants also talked about getting into the habit of checking the postings so that they did not fall behind. Alba

connected the time factor to the habit factor as follows: “I didn’t always check the board every day. I only did it every once in a while. Then I had to catch up on occasion. And I think that if I would have kept up with it every day I would have been a little more responsive.” Nancy added that, “It’s not a habit that I am accustomed to. So I would have to make an effort to get on and…you may have noticed that a lot of my postings were after I had done everything for that day. So a lot of postings are done at midnight.” Thus, in addition to overall lack of time, simply not being in the habit of posting decreased the participation in the online discussions.

A third reason cited for lack of online participation was that online discussion is more difficult than face-to-face discussion. As Phil noted in the general patterns above, online discussions were “inefficient compared to face-to-face.” In addition to this inefficiency, Nancy suggested that some of this difficulty was due to awkwardness. As she stated: “But that’s the thing where I feel awkward in the online discussions as opposed to in person. Because I feel a lot more comfortable saying something brief or something silly in front of you.” She also suggested that sometimes individual postings seemed redundant. She felt that postings such as “I agree” were not necessary, so she often did not post such comments. She did note that, “even though I was reflecting, I was not necessarily making it available to everybody else.” Nancy’s last statement reveals that even when participants are reflecting, they may not be posting to the online venue.

In summary, I chose the term challenging to convey the overall concept that participants had difficulties with the online environment. The various specific aspects of this concept combined to make these difficulties seem even worse. The initial confusion

and awkwardness with online discussions led to decreased participation which in turn created fewer items for participants to post replies to. With fewer items to reply to, there is less of an opportunity of seeing something worth replying to. In spite of these reservations about the online environment, there was participation. Participants also noted three additional, more positive themes, as described next.

Reflection theme two: The online reflections allow the discussion to continue.

The second theme identified by the participants was that the online reflections "allowed for the continuation of face to face discussion" (Susana). This theme means not only that the conversation can continue, but that participants can keep connected when absent. As Alba pointed out, the online aspect was "a good venue for us to talk to one another when we couldn't meet face to face." Although participants recognized the value of the online discussions, they did prefer the face-to-face meetings. Alba captured the overall sentiment when she stated: "… I did enjoy the face-to-face meetings more. But it was nice that we had that venue to communicate between the meetings." The theme of continuation goes in two directions: face-to-face discussion can continue online and online discussions can continue in person. That is, the online and face-to-face discussions were often continuous with each other.

In addition to continuing a conversation started face-to-face, the online reflections often served to initiate conversations that then continued in person. For example, there was a discussion of critical thinking that began online in the Ron's Case Study topic (Ron, Alba, and Phil, postings A-14 to A-20) which ran from February 15 to February 20. That same conversation continued at our third face-to-face meeting on February 27, and

included Phil bringing in example textbooks that he uses to teach critical thinking. The discussion then went back online as part of the Third Meeting Reflections topic discussion, which included Alba (A-2, February 28) asking whether or not critical thinking can even be taught and Susana (A-4, March 10) discussing how to assess critical thinking. Critical thinking then became a major part of the fourth face-to-face meeting on March 13. While this was the most active and longest running example, it was not the only one.

Another example of extending the dialogue from face-to-face to online and back is an online discussion between Phil and Susana about how Phil organizes his classroom to stimulate more group discussion. After trying to describe his class set up online, Phil ended his posting with: "let's talk about that 'in class'" (Phil's Case Study, A-9, February 26). At the next (fourth) face-to-face meeting on March 13, Phil came to the room early and set up the chairs the way he does for his classes. This second example shows how the face-to-face meetings were supportive to the online discussions and vice-versa.

Reflection theme three: The online reflections allow for more immediate idea sharing.

The third theme identified is related to the immediacy of the online reflections. There were times when participants had something they would like to add to the conversation with the group when the group was not physically together. Rather than having to wait to express this idea (and possibly forget it in the meantime) the online venue provided an opportunity for participants to share ideas quickly. As Nancy stated in

her interview: "…I think it was a good place to go ahead and say 'here's an idea and here's a reference' right away. Which is a very quick and easy way to provide the material that you are referring to." Alba added that online reflections were useful because "… as soon as something popped in your head you could put in on the discussion board and you didn't have to wait until the meetings. So, and with everything going on, if I don't write something down immediately it may be gone later." Although only Nancy and Alba commented on the immediacy aspect of the online environment, this is still an important theme that is discussed further in the next chapter.

The immediacy theme added an interesting twist to the continuity theme discussed above. The ability to quickly capture and post an idea related to an on-going discussion helped keep the discussion moving. While this theme reflects how some participants found value in the quick, immediate availability characteristic of the online reflections, the next theme reflects how they found value in almost the opposite characteristic: the ability to take the time and think more deeply.

Reflection theme four: The online reflections allow for more in-depth reflection.

In addition to the immediacy aspect, the online reflections allowed time for deeper reflection to occur. Several participants noted that deeper thoughts were often triggered by the face-to-face meetings and the online venue allowed those thoughts to be expressed. As Susana stated it, "some points tend to bubble up to the surface, maybe after the face-to-face interaction has ended." The online aspect also allowed participants to, according to Susana, "… step back from that, think about it and figure out if it's

something that maybe I might be able to try in my own practice later on." Thus the online aspect helped participants express the deeper reflections that were sparked by face-to-face meetings.

These deeper reflections may also be sparked by what participants read online. Betty expressed this when she noted: "Reading the other faculty's reflections …made me see some things in a different light… You get so focused on your own thinking that when you read someone else's take on a particular topic it turns it around." Susana also noted that the permanency aspect of the written online reflections was of value. She pointed out that, "I can always go back and look at those messages and think about them even longer. Whereas, sometimes in a face-to-face points that are discussed might kind of evaporate into thin air." Susana's point here correlates with the immediacy theme described above because both the immediacy and the permanence of the online discussion prevent ideas from being forgotten. That is, the immediacy aspect allows an idea to be captured before it is lost while the permanency aspect keeps it available for deeper reflection.

There was a somewhat negative aspect related to this theme of deeper reflections. Two of the participants described concerns about the persistence of their postings. In this view, they felt that their online postings might be more closely scrutinized. As Nancy pointed out, "I feel like when you write something down it becomes more permanent. And, so, it's … it's then available for more scrutiny if it's out there. As opposed to: if I make a comment, I can easily retract it. … I don't know if I have more insecurities than others, but I definitely have insecurities. And, putting things out there regularly, just free writing, is making me more vulnerable." Susana expressed a similar concern when she

stated, “I suppose there’s always the fear of individuals being maybe exposed or expressing opinions that could be seen as against norms somehow.” This concern over exposure could be related to the theme of deeper reflections in that this concern may have inhibited some of the participants from posting their deepest reflections.

Reflection theme five: Keeping up while missing a meeting (or not).

The blended approach to this CI allowed two different venues for participants to maintain their connection with the group: face-to-face and online. Whenever outside influences interfered with face-to-face attendance, the online reflections provided an opportunity to keep up. Alba’s participation demonstrates how the online reflections worked successfully to keep her connected. Alba had to miss the second and sixth meetings, but kept up with the online discussions about them and ended up being one of the most consistent online participants. The missed meetings did not prevent Alba from keeping up with context of the CI. Bob and Nancy each missed several meetings due to their life interruptions, but they demonstrated remarkably different responses to the missed meetings and the related online discussions.

Bob reported in his interview that he felt overwhelmed by the number of postings he had missed and that he felt that he would no longer be able to fully participate in the face-to-face discussions. I encouraged him to rejoin the face-to-face meetings (which he did) and to rejoin the online discussion as best he could. The D2L discussion board tracks all of the messages and whether a particular person has read them or not. The system creates an alert message (in bold print) telling members exactly how many un-read messages they have. Bob expressed to me his dismay at having that message constantly

remind him how many messages he had missed. This was discouraging to Bob, but he did manage to get past that and at least partially re-enter the online discussions. His 18 total postings were mostly made during the early part of the project. In the end, Bob had read 63% of all the postings.

Nancy also expressed a bit of dismay at the number of unread messages she had, but chose to aggressively read through the missed postings and ended with 100% of them being read. Because her replies to many of these topics occurred several weeks after the last posting, she created some complicated threads. There was an interesting positive outcome to this pattern because her late replies sometimes caused other participants to go back and reply to those older discussion threads. In this way, there was an additional opportunity for reflection added to the discussion boards near the end of the project timeline.

Susana demonstrated a very different posting and attendance pattern from the other participants. She missed the second meeting but managed to post on the related discussion topic. While she did not miss any more meetings, her online postings stopped after March 26. This caused her to not be a part of the last four discussion topics and she ended up reading only 63% of the total postings. For Susana, the face-to-face meetings provided the opportunity to maintain connection to the group even though her online participation was lacking.

In summary, while the participants had some initial (and on-going) reservations about the online venue, it allowed for continuation of the conversation, quicker responses, and, perhaps, for deeper reflections. For two of the participants the online

reflections allowed for maintaining contact even while missing meetings and for one of the participants the face-to-face meetings allowed for connection even as online participation faded. The next section of the findings takes a look at what aspects of the overall CI design facilitated the frequency and levels of online reflections of the participants.

Research Question Three: Design Aspects Which Facilitate or Inhibit Online Reflections

This section deals with the third research question: What aspects of the overall CI design facilitated the online reflection? While the data for this section's findings came primarily from the participant interviews, the online postings themselves served to verify and exemplify certain aspects of facilitation. Inherent in the question about design features and facilitation is the role that I played as the facilitator of the online discussion. Along with facilitating reflection, there is also the concept that certain aspects of this CI would inhibit reflection, so this section deals in turn with both facilitation and inhibition of online reflections.

Aspects of the CI design that facilitated the online reflections.

The two primary aspects that participants noted as facilitating more frequent online reflections were the convenience of the system and direct actions that I took as the facilitator. The convenience aspect was already mentioned within reflection themes two and three. Both Nancy and Alba pointed out that the continuous access to the discussion board allowed them to post reflections immediately when they had an idea to share. As Alba stated it, "Just the ease of access" facilitated her ability to reflect online. In addition

to access, several of the participants also noted that their familiarity with the D2L system made their use of it more convenient. That is, they did not have to learn a new online system in order to participate.

The second aspect of facilitation noted by the participants was the direct actions that I took as facilitator. Alba, Susana, and Nancy all commented that my replies to postings often triggered further postings. Nancy elaborated on this in her interview:

> By commenting on every single posting or almost every posting whereas the rest of the faculty involved would respond to every third or every fifth posting. Umm, and so by your efforts, taking the information a bit further than after the fourth or fifth posting, I felt like, well, I feel OK responding to this one. And so, rephrasing it maybe, you put me in a position of yeahh or you spurred something that made me want to post something.

Susana added that "Drawing out ... the discussions or topics at hand and moving those along for everybody. That made it easier, well to understand not only the process of collaborative learning but also helps with understanding group dynamics." Thus, the participants were both aware of and appreciative of my efforts at direct facilitation.

Two examples of this sort of direct facilitation are described below. In the first meeting reflections, Bob was commenting on his perspective of the videos that Herreid (2002a; 2002b) had produced to describe the value of case study teaching. Bob's initial statement was as follows (1st Mtg, B-1):

> Going into the first meeting I wasn't sure if I could add anything substantial to the effort. I'm still not sure. I'm testing the water, dipping my toes in, feeling my

way around. After the meeting, I felt I could put my bias aside and at least have an open mind, but still at times also playing devil's advocate regarding use of case studies. That's a good first step. I also watched the first video with Herreid (sp?). He seemed a little overenthusiastic about his experience as if he was overstating the benefit.

Anyway, I am starting to think about a case study to work on for 2020. Give me time and see if I come around.

I replied to this post as shown below (1st Mtg, B-2):

Bob, Putting your bias aside is a good place to start. But "playing devil's advocate" is not necessarily bad. By asking those questions, you force the rest of us to examine our biases.

Please say more about Herreid "overstating" his case."

This prompted Bob to reply as follows (1st Mtg, B-3):

The video was very well produced but came off as an enthusiastic sales pitch for this method of teaching. Herreid made two statements that made me wonder if the benefit is one he professes or is truly evident. First he says that using case study methods the students "do better than traditional teaching" with "fewer D's and F's." He followed that up with the statement that both groups do "about the same on standardized tests." It made me wonder if the case study students who don't get D's and F's are only doing as well as traditional students who do get those poor grades in class when they all take a standardized test. Anyway, that's the way I analyzed those comments when heard side by side.

> The explanation could be that poor students are getting the "free ride" from the group grades, even with the weighted scale system he uses. We see that in 2010 and 2020, where the truly motivated students do the bulk of the work in their groups and there are a lot of freeloaders. If the majority of their grade is based on case studies and collaborative work, it's easy to see that a student will end up with a "C" grade and learn no more than a traditional student who gets a D or even an F.

While Bob's initial post was short, based on my reply, Bob responded with a much more detailed post, elaborating on his concerns with this teaching method.

Another example of positive direct facilitation occurred in the fourth meeting topic where Phil posted the comment that "In any case, the goals also greatly influence how one casts the case." (4th Mtg, A-1). This prompted me to turn his comments into a question for everyone (4th Mtg, A-2): "What are our goals for case studies for the particular case study we are working on this semester?" This rephrased question was answered by five of the participants and this resulted in a very interactive thread with twelve postings.

In summary, online reflections were facilitated by the continuous availability of the course management system and by regular promptings by me as participant-facilitator. My postings often served to either stimulate a fuller response from one participant or to trigger responses from multiple participants. The next section describes those aspects of this CI that inhibited participant online reflection.

Aspects of the CI design that inhibited online reflections.

Three aspects of the CI that inhibited the online reflections included a lack of participation incentive, difficulty with the structure of the course management system, and specific instances of poor facilitation. As discussed in the section on facilitation above, my actions as the facilitator were an integral part of the design of this CI.

The first inhibitive aspect of the CI design was that there was a lack of incentive for participants to post. Unlike a college course where participation points could be used as an incentive to post, this CI was a voluntary activity involving busy professionals. As Nancy stated: "because this particular faculty course was quote-unquote optional to me, that also sort of made it less imperative as far as my obligations to my classes and those other things." Thus, in addition to the overall lack of time described in reflection theme one, there was a lack of external incentive to place a priority on the participation in the online discussions. Without this incentive, time constraints and other priorities combined to decrease motivation to participate.

Bob connected time and incentives to motivation when he stated: "Time was a factor there. And motivation. Where I was in the middle of this whole project; I pretty much just backed off." Nancy connected motivation to priorities when she stated: "It was not my first priority, but it was still a priority, so I made sure I did check it, read it and see what other people had said and make a comment here or there." Susana's comment also related this to priorities and other duties,

especially her teaching schedule as she stated: “Just being able to carve out time from those activities that were mandatory as far as my class schedule was concerned.” Thus, as a design aspect, the lack of incentive created a situation where the busy professionals were less motivated to participate and regular posting was not a very high priority.

The second inhibitive aspect of the CI design was the structure of the online environment in terms of its ease of use. As mentioned in reflection theme one above, Phil noted that: “the structure/ threaded nature of D2L made it difficult to keep track of where various conversations were occurring.” He also noted that “We also were not very good at using descriptive subject lines,” which is based on the fact that without a good subject line it is difficult to know what a particular posting may be discussing. And it made it difficult to find your way back to a particular discussion that you may have wanted to comment on. Phil even suggested that, “There may be a better online collaboration tool out there.” Phil’s comment stands in contrast to the facilitative aspect of the familiarity mentioned by some participants and described above. However, just because some of us were more familiar with D2L, its limitations as a discussion tool may have limited the amount of discussion that occurred.

The third inhibitory aspect of the CI design was portions of the online discussion in which I could have done a better job of facilitating further reflection. Had I handled these missed opportunities differently, there might have been more online discussion. I will provide two examples of where my direct facilitation could have been better.

The first example occurred within the discussion of my case study. While discussing critical thinking, Phil stated that, “You learn to think critically just as you learn to ride a bike: trial and error and recognition when you have got a bit closer to your goal” (Ron’s Case A-19). Although Phil’s statement revealed some of his assumptions about critical thinking, I failed to ask follow-up questions that would have helped make those assumptions more explicit. There were several instances like this that I did not notice until I was collecting the data from the discussion board.

Another example of poor facilitation that stood out for me occurred within the Reflections on Literature topic when Alba posted: “As I am reexamining my assumptions, I again ask the question: Are case studies appropriate for every student? (Ron-- please let somebody else respond.)” (Lit, C-3). While Alba asked for feedback from everyone, she asked me to allow others to respond first. Honoring her wishes, I did not reply, but neither did anyone else. Again, it was not until I was analyzing the online data that I realized that Alba’s question went unanswered.

This last example of poor facilitation relates back to Phil’s noting the somewhat over-structured nature of the face-to-face meetings (as described above in the section on effectiveness theme one.) Together these two findings suggest that there was a tendency on my part to be overly active in my attempts to facilitate discussion and reflection. I will discuss my overall role as facilitator and organizer as part of the discussion in Chapter Five, below. Now that I have explored the overall context of this CI and what aspects facilitated and inhibited the online reflections, the next section of this chapter takes a closer look at how the online reflections occurred.

Research Question Four: Levels of Online Reflections

The final section of this chapter discusses the findings related to the levels of reflection that occurred within the online discussions. These findings relate to research question four: How does reflection occur within the online aspect of this blended CI? Reflections were analyzed from the perspective of different levels as described by Kreber and Cranton (2000). This section begins with an overall discussion of the number of occurrences of the various levels of reflection and then moves on to a discussion of the patterns within which the premise level of reflections occurred.

Overall description of the levels of reflection within the postings.

As described in the methods section, I modified Kreber and Cranton's (2000) indicators of faculty reflections into a rubric that that was used to assign statements within the postings to one of five levels of reflection. Those five levels are: (a) non-reflective, (b) contemplative/introspective, (c) problem/content, (e) process/product, and (e) premise. Table 4.4 shows the total number of statements at all levels of reflection across the various discussion topics. Table 4.5 shows the total number and percentage of reflections at each level by participant.

Because individual postings varied in length, they could contain one or many statements. With more than one statement they could contain more than one reflection and possibly more than one level of reflection. As an example, Betty only posted 5 times, but had 25 total statements. Her 25 statements included 8 statements at the contemplative level, 4 statements each at the problem and premise levels, and 5 statements at the process/product level.

Table 4.4
Number of Statements by Topic and by Levels of Reflection

Topic:	NR	C/I	P/C	PRO	PRE	Total
Biographies	8	39	7	3	3	60
Reflection Lit	5	4	6	13	4	32
1st Meeting	5	3	12	8	4	32
2d Meeting	5	0	11	12	2	30
3d Meeting	2	1	7	13	5	28
4th Meeting	10	4	7	14	8	43
5/6th Meeting	13	4	7	15	9	48
7th Meeting	20	20	11	20	14	85
Ron's Case	15	2	14	16	9	56
Phil's Case	2	0	7	4	0	13
Alba's Case	3	0	3	4	1	11
Betty's Case	0	1	3	1	0	5
Susana's Case	5	0	3	5	0	13
Bob's Case	1	0	0	0	0	1
Nancy's Case	4	0	3	3	0	10
Research/Observations & Administrative	15	2	5	5	0	27
Total Postings	113	80	106	136	59	494
% by Level	23%	16%	21%	28%	12%	

N/R: Non-reflective; C/I: Contemplative/Introspective; P/C: Problem/Content; PRO: Process/Product; PRE: Premise

Table 4.5 shows that 39% of our statements were non-critical with 23% being non-reflective and 16% contemplative. Thus, 61% of the online reflections were actually critical reflections by Mezirow's (1991) definitions. Of those, the highest percentage of reflections (27%) were at the process/product level, while only 12% were at the deeper, premise level. This is consistent with Mezirow's original theories (1991) in which he suggested that premise level reflections occur the least often and is also consistent with Kreber and Cranton's (2001) findings that premise level reflections occur least often.

Table 4.5
Number and percent of statements at each level of reflection by participant

Level	Alba	Betty	Bob	Nancy	Phil	Ron	Susana	Total
Total Postings	34	5	18	32	39	128	28	285
Non-Reflective	7	4	5	14	14	59	10	113
	13%	17%	21%	24%	19%	26%	27%	23%
Contemplative	6	8	1	11	11	36	7	80
	11%	35%	4%	19%	15%	16%	19%	16%
Problem/Content	14	4	9	10	18	44	7	106
	26%	17%	38%	17%	25%	20%	19%	21%
Process/Product	19	5	4	19	18	62	9	136
	35%	22%	17%	33%	25%	27%	24%	28%
Premise	8	2	5	4	12	24	4	59
	15%	9%	21%	7%	16%	11%	11%	12%
Total Statements	54	23	24	58	73	225	37	494

When looking at the levels of reflection by participant, we see that while the percentages vary somewhat by individual, on average, participants reflected less at the premise level than at other levels. Looking at the levels of reflection by topic and forum, we see that 65% of the postings in the Biographies topic were contemplative, which probably relates to the fact that we were reminiscing about prior learning with very little critical reflections. The seventh meeting reflections also had a high number (23%) of contemplative reflections as we posted reflections on the overall process of the CI, without necessarily noting a problem. In addition to reflections on our last face-to-face meeting, the seventh meeting reflections topic also included discussions of how effective we thought the project was. This last aspect was prompted by Phil posting the form he uses to encourage students to evaluate his courses. Most of the participants responded to Phil's posting by using that form to evaluate our CI and then posting the completed form

to the discussion topic. The questions on that form prompted many contemplative and some critical reflections.

A thematic analysis of the premise level reflections did not reveal any particular topical themes that prompted us to reflect more deeply than any other. Although there were no outstanding topical themes, there were some interesting patterns to our premise level reflections that emerged from my contextual analysis. These patterns are explored in detail below.

Five patterns of premise level reflections.

This section describes the results of my contextual analysis of each instance of premise level reflection. I began this study expecting to see the various levels of reflection unfold according to an idealized view of Mezirow's (1991) theory of transformative learning. In that work, Mezirow described a step-wise flow beginning with a disorienting dilemma that creates a problem. Reflection on that problem (problem/content) leads to reflections on possible solutions and their outcomes (process/product), and possibly to reflection on the underlying assumptions about this problem and why it is important in the first place (premise). Although Mezirow (2000, 2009) and others have since described the sequence of transformative learning in a more dynamic way, the idealized step-wise flow did turn out to be a common pattern. In addition to Mezirow's idealized flow, I recognized four other patterns to the order of the statements within the postings that included premise level reflections. These five patterns and their occurrence frequencies are listed in Table 4.6 and further explored below.

Table 4.6
Patterns of Premise Level Reflections

Pattern #:	Description	Occurrence
1	Mezirow's Flow: Problem, Process, Premise	26 times
2	Reverse Mezirow: Premise, Process, Problem	10 times
3	Premise in the middle: Problem, Premise, Process	6 times
4	Multiple Premises	9 times
5	Premise Alone	8 times

Premise pattern one: Mezirow's flow: problem, process, premise.

The first and most common pattern of reaching premise level reflection (which occurred 26 times in this CI) followed Mezirow's (1991) suggested order. This pattern involves a logical progression from recognizing a dilemma, to reflecting on the problem and possible processes and outcomes, to finally looking at some assumption (premise)

about the problem. While this critical reflection could possibly lead to transformative learning, it should be noted that the online data only show the reflection and are thus not necessarily indicators of a fully transformative experience. They are thus only indicators that the first steps have occurred; actual transformative learning may (or may not) occur as a result.

This flow was sometimes shown within a single posting and sometimes spread over a couple of postings. A good example of this occurring all in one posting is Alba's

reflection on the first meeting (1st Mtg, D-4), which is shown below. The levels of reflection are noted within brackets.

> One of the challenges in teaching A&P (Anatomy and Physiology) is that students have a tremendous amount of material to learn in a short time. ***[problem/content: amount of material]*** Therefore the lecture instructor automatically thinks that the more material covered in a lecture period, the better. ***[process/product: lecture to cover more]*** However, students learn more from other students than from the instructor AND students learn more if they have to research, organize and generally make sense of the information. ***[process/product: alternate ways for students to learn]*** Case studies in A&P provide for student learning as students must research the problem to find answers and students must work in a group setting to finalize the answers. The case studies also promote problem solving skills, which I know we all agree are important. ***[premise: problem solving skills are important]***

In this instance, the initial problem (the amount of information to be covered) is discussed in terms of various processes and products (results) including the case study teaching method and then the premise level reflection actually reframes the problem by moving from amount of information covered to the need for more problem solving skills.

Another example of Mezirow's order occurring within one posting is from Betty in the same topic (1st Mtg C-1) where she is discussing her concern with fitting into our CI group.

> When I read the personal bios, I was a little worried that I was going to be a fish out of water ***[problem: fitting in]*** because of the science backgrounds you folks have, and science was never a strong point for me. But as we started talking, I could certainly relate to the issues. ***[process/product: talking, relating]*** I suppose that teaching is teaching regardless of discipline or level. ***[premise: teaching is teaching]***

In this example, the problem was a bit more personal (fitting in) but the flow of the reflection was more clearly along the same topic and the premise reflection again served to resolve the problem by re-framing it. Since we are all teachers, we all fit together regardless of our disciplines.

In some instances, one premise level reflection generated another round of all three levels of reflection. Phil (4th Mtg, A-1) begins with a problem that he recognized from the face-to-face discussions.

> In our discussions I was struck by how important it is to decide exactly what one wants to accomplish before doing any sort of course development. ***[problem: deciding what goes into a course]*** The economist's notion of opportunity cost rears its ugly head. For anything you want to do, you must give up something else. ***[process: must give up something]*** In any case, the goals also greatly influence how one casts the case**.** ***[premise: The goals influence the case]***

As the facilitator, I used Phil's posting to pose a question to all participants about the goals they were setting for their courses, which prompted Phil to post this (4th Mtg, A-7) about four days after his posting cited above:

> My goals are the following: ***[problem: what are his goals]***
>
> 1. Set the mood for the class: active participation by students in discussion.
> 2. Give students the opportunity to start developing the habit of giving reasons and arguments to support of their statements. ***[process: what he wants students to do]***
> 3. Initiate students' recognition that moral issues may involve many considerations -- including matters of concept, fact, and principle -- and should not be viewed simplistically. ***[process: what he wants students to do AND premise: Moral issues should not be viewed simplistically]***

In this instance, we see how one concept can be stated as a premise level reflection (stating your goals is critical to course development) and can then be re-stated as a problem for further reflection (what are your goals?) This is an example of Mezirow's (1991) and Schön's (1984) notion of re-framing an issue and more specifically, it is an example of Mezirow's notion that reframing a problem can move it from a change in meaning schemes to changes in meaning perspectives. The relationship of these findings to the theoretical framework of transformative learning is discussed in more detail in Chapter Five.

Premise pattern two: Reverse Mezirow (premise, process, problem).

The second pattern of premise reflections that I noted is a complete reversal of Mezirow's idealized order. This pattern, which occurred ten times, begins with the statement of a premise followed by description of a related process (or processes) and how they relate to a particular problem. This pattern is exemplified by Alba's discussion of grading written assignments (3d Mtg, A-6), as shown below:

> I realize students do need good writing skills ***[premise: students need good writing skills]*** and we certainly need a way to grade their work-- just makes me wonder if our goal is to grade on their ability to problem solve how much of that grade ends up being a writing skills grade instead. ***[process/product: how much of our grading is on writing skills vs content***] Other ways to approach grading would be to give oral questions to each student (too time consuming... I had an instructor grade this way in one of my undergraduate classes) or to give multiple choice questions at the end of a discussion to each student (such as Herreid did in one of his videos). ***[process: other ways to grade]*** The later would mean, however, that the answers must be exactly what the teacher had in mind. ***[problem: multiple choice questions are limiting***] Just bouncing thoughts and ideas around.

Alba started with a declaration of her premise (students need writing skills), then notes how that establishes her process of grading, and then ends with how this creates the problem that multiple choice questions are limiting. That is, her premise frames her problem.

Another example of reflections occurring in reverse of Mezirow's order is Susana's discussion of grading critical thinking (3d Mtg, A-4). Her posting was as follows:

> Without making a "duh" statement, it is important for the students to communicate that critical thinking through "writing" ***[premise: critical thinking is important]*** because unless we are going to start making them give oral presentations, writing the answers is the most portable way to evaluate their research for that case study ***[process/product: writing is a good way to evaluate]*** and their writing needs to reflect some kind of thinking process. We should be tough to enforce good writing and explanations of answers. I usually have some short answer questions on my tests and if they can't explain some (usually) simple process then they don't get credit and I'm not going to TRY to understand what they MIGHT mean in their answers.... ***[content/problem: students do not always have good writing skills; grading written answers is difficult]***

In this instance Susana states a premise that critical thinking is important, then reflects on the process of how this is evaluated (written answers) and then recognizes how this creates the problem that a student's writing skills may interfere with their ability to express their critical thinking. While this pattern is the complete reverse of Mezirow's flow, it still follows a step-wise approach, working from premise back to problem. The next (third) pattern mixes the steps.

Premise pattern three: Premise in the middle (problem, premise, process).

The third pattern of premise level reflections, which occurred six times, is to put the premise statement between statements related to the problem and process. The participant would start with the statement of a problem, and then declare a related premise that is used to either develop the process that "solves" the problem or to point out how the current process is not solving the problem. One example of this pattern is Bob's discussion of what he learned through his participation in this CI. His posting (7th Mtg, C-1) was as follows:

> What I learned most from the project and the consequent events in the classroom this past semester ***[problem: what did I learn?]*** was the importance of commitment to the success of an endeavor. ***[premise: commitment is important]*** As events unfolded, I had a general loss of interest in the project as it took a back seat to matters of importance outside school. As a result, my participation declined. I do apologize for fading out of the picture. In class, my initial lack of commitment to the case study process resulted in some students responding with similar apathy while others had the initiative to do excellent work. ***[process/product: lack of teacher commitment created student apathy]*** With a renewed commitment to the case study method from me, I expect to see greater participation and enthusiasm from the students. [***process/product: a renewed emphasis will create more enthusiasm]***

In this case, Bob's answer to the problem of what he learned prompted the declaration of his assumption about commitment. After stating this assumption, he was able to more clearly describe how his commitment had affected the process and the

results (product) he had experienced in his classroom. One interesting note about this pattern is that while placing the premise in the middle could result in two arrangements of the problem and process, it always occurred as problem, premise, process (not process, premise, problem). This interesting note is discussed in more detail in the next chapter. The last two patterns involve premise level reflection with little or no connection to reflections at the other levels.

Premise pattern four: Multiple premises/follow-on premises.

The fourth pattern of premise level reflections that I noted occurred eight times and involved a single posting with several premise level reflection statements. Those statements could be grouped together or separated by other statements of problem or process. Both Phil and Bob had postings that followed this pattern. As part of the Ron's Case topic (A-5), Bob described how he grades case studies based on his own clinical experience. He stated that:

> As for the decision making for the lung cancer, if I allow my own opinion to enter into it, I'd deduct points for any of them that don't reach the same conclusion I do. ***[process level: how he grades]*** I didn't do that, but rather allowed them full credit as long as they supported their answer, even if it wasn't what I would do. <u>That's the right approach, isn't it?</u> ***[premise level: there is a right approach]*** So, for this one, as Herreid suggests is a possibility oftentimes, there is no "right" answer. ***[premise: there is no right answer]***

Here Bob is stating two premises relate to his process of grading: “there is a right approach” and “there is no right answer.” After making these two somewhat conflicting premise statements, he did not try to reconcile them.

Phil also demonstrates multiple premise level reflections in his biographical reflection. In this posting, he begins with a discussion of various problems with the current educational system, he then examines his assumptions about that system and why he thinks it is flawed, with several statements describing his assumptions behind making that claim. Phil’s statements (Bio, D-1) were as follows:

> Over the past 15 years, I have devoted considerable time to helping my daughter with her schooling. I quickly discovered that I had mostly forgotten the facts that I had learned in school. It also became clear that much of the course content that I "mastered" is no longer accepted as true. Finally, I became convinced that the schooling she was receiving would not likely result in a valuable education. ***[problem/content: what education should be]*** Schooling often presupposes a factory model. It takes "to educate" to mean the same as "to fill with information." Under this model, the sorts of things that improve a factory -e.g. the use of the latest in technological gadgets - are thought to indicate improvements in education. This is the underlying idea of education that underlies calls for a more rigorous curriculum. ("Rigor", of course, means stiff or rigid or inflexible… as in rigor mortis.) This is the sort of model I saw in action as I struggled to help my daughter survive her schooling. ***[premise:***

> ***examining assumptions about what teaching is supposed to be]*** As I reflect upon my own experiences, I see very little of value in such schooling…***[premise continued: such schooling is of little value]*** and I am amazed that I did manage to get an education that has been of exceptional value in my life. ***[premise: the results of his education have been exceptional]***

Phil's multiple premises are all related to the value of schooling versus education. Like Bob, his premises reveal a bit of discrepancy (schooling is of little value for his daughter, but somehow created an exceptional education for him). However, in Phil's case this discrepancy was not incidental; it was the focal point of his reflection: schooling is not the same as education.

Within this fourth pattern, the multiple premises results in a relative lack of supporting lower level reflections. That is, the multiple premises occur without a supporting set of process or premise reflections to build up to or emerge from the premise reflection. This lack of supporting reflections is seen in a more extreme manner in the fifth pattern.

Premise pattern five: Premise only/premise is on different topic.

The fifth pattern of premise level reflections, which occurred eight times, involves posting a premise level reflection without any other level of reflection indicated. These reflections were generally triggered by external prompts (other than the participant's own reflections). These external prompts included previous postings by others, readings

related to this CI, or conversations that occurred as part of the face-to-face portion of this project.

Alba demonstrates this pattern in her response to a previous posting by me as she asks the following (Lit, C-3): “As I am reexamining my assumptions, I again ask the question: Are case studies appropriate for every student? ***[premise: examining the assumption that case studies are useful for everyone]*** (Ron-- please let somebody else respond.)” As described previously, this was also an example of a missed opportunity to facilitate further, as no one replied with an answer to Alba’s question.

Nancy’s posting within the fifth and sixth meeting topic also show the premise alone pattern, this time with two related prompts. During the face-to-face meeting we had discussed a particular case study found in the NCCSST website that various members of this project had been commenting on. In response to that case study and Phil’s online posting that he thought that case study was too long, Nancy posted this message ($5^{th}/6^{th}$ meeting, E-2): “The explanation is a little long, but number of questions the student must address seems reasonable. Reading a page of text should not be overwhelming to anyone, I would hope.” ***[premise: students should have a certain level of reading skill.]*** The other instances of this pattern were very similar to the two described above. In these cases, it was some other person’s statement that created a premise level response.

Summary of premise level reflections.

In summary, the levels of reflection are not necessarily linear. While the most common pattern identified in this CI follows an idealized version of Mezirow’s systematic approach, it was not the only pattern seen. Although we most often started

with a problem (content level), moved through the process/product level of possible solutions, and ended with a reflection on the premise of why these were important, the other patterns noted indicate that other approaches occurred as well. These other approaches were not necessarily any less logical or rational, but were instead more iterative and free flowing. The significance of these observed patterns is discussed in the next chapter.

Summary of the Chapter.

In this chapter I presented the findings from my observations and analyses of the data collected. I presented the overall context of this collaborative inquiry in terms of participation and have shown that the participants had an overall perception that this was an effective faculty development project. I provided evidence that the online reflections were a significant part of the overall development of participants and I presented both positive and negative aspects of how the design facilitated reflections. I also demonstrated that various levels of reflection were recognizable within the online postings and explored various patterns associated with premise level reflections. In the next chapter, I will discuss these findings in terms of their overall significance and their relationship to the extant literature.

Chapter Five: Discussions, Conclusions, and Recommendations

In this chapter I present a summary and synthesis of the findings and a discussion of the significance of those findings with respect to the larger literature framework. I also present the conclusions that I can draw from this study and recommendations for further study. I will conclude with a few general reflections on how this dissertation has changed my own practice.

Summary of the Findings

This section presents each research question and lists the major associated findings that are more fully explained in the previous chapter. For each question, I provide a brief summation of those findings as an answer to that question. Before I discuss the specific research questions, I present a synthesis of my findings on overall participation.

In terms of overall participation, this small group of faculty members had varied but generally adequate face-to-face participation and everyone managed to engage to some degree in the online discussions. However, not everyone completed the goal of creating their own case study. I recognized four patterns of overall participation exemplified by various participants as follows:

(1) Regular Attendance and Robust Participation (Alba, Phil, Ron)

(2) Listening and Lurking (Betty)

(3) Dropping Away and Coming Back (Nancy, Bob--face-to-face)

(4) Slowly Slipping Away (Bob--online and Susana--online)

Thus, while overall participation patterns were varied, they showed that each of the participants found some way to be involved in this collaborative inquiry project.

Research Question One: How do participants perceive the overall effectiveness of this approach to faculty development? I identified four themes related to this question:

(1) Discussions with other faculty members are beneficial.

(2) Teachers need to learn more about teaching and learning.

(3) The supporting atmosphere made learning easier.

(4) The online aspects were part of the overall effectiveness.

Taken together these themes indicate that the participants found value in this approach to faculty development and considered it to be an effective way to learn. Overall the participants perceived that this was a worthwhile development project and they were particularly appreciative of the chance to learn with others. Although they expressed a slight distrust of the literature, they did learn from and respond to it.

Research Question Two: How do participants perceive the relationship between online reflection and their overall development during this collaborative inquiry? I identified five themes related to this question:

(1) The online reflections can be challenging.

(2) The online reflections allow the discussion to continue.

(3) The online reflections allow for more immediate idea sharing.

(4) The online reflections allow for more in-depth reflection.

(5) The online reflections allow participants to keep up while missing a meeting.

I believe that these themes demonstrate that the online aspect added an extra avenue of participation that helped keep the participants involved in the process. I also think that they suggest that anyone can participate if they choose. This last point implies that there is a need to create the correct incentive for participants to post. This implication is related to the next question about facilitation.

Research Question Three: What aspects of the overall CI design facilitated the online reflection? In answering this question I discovered that there were two aspects that facilitated the online reflections, but there were also three aspects that inhibited these reflections. The two aspects that facilitated reflection were:

(1) Convenience of the course management system (D2L).

(2) Direct actions I took as the facilitator.

The three aspects of the CI design that inhibited online reflections were:

(1) Lack of incentive to participate.

(2) The complicated structure of the online discussion boards.

(3) Instances of poor direct facilitation.

These findings indicate that there are both structural and procedural features of CI design that can either facilitate or inhibit online reflections. These features are explored further in the discussion section, below.

Research Question Four: How does reflection occur within the online aspect of this blended CI? To answer this question I developed a rubric to identify the levels of reflection that occurred within the online postings. A contextual analysis of which levels

of reflection occurred before and after each premise level reflection revealed five patterns. These five patterns included:

(1) Mezirow's flow: problem, process, premise

(2) Reverse Mezirow flow: premise, process, problem

(3) Premise in the middle: problem, premise, process

(4) Multiple premises

(5) Premise alone

Taken together, these patterns indicate that premise level reflection can be attained or stimulated several ways. First, there is the step-wise process suggested by Mezirow in which the disorienting dilemma leads to reflection on the problem, then to reflection on the process, and finally to reflection on the assumptions and premises related to the original problem.

There is also the reverse of this in which the stating of the premise leads to re-thinking the process and finally the problem. Sometimes the statement of a problem led to a statement of the premise that led back to statements related to the problem. The last two patterns occurred when the focus of the posting was at the premise level with either a single premise statement alone or with multiple premise statements.

Answering the overarching research question.

Based on the findings summarized above, I can now address how the online reflections contributed to the overall effectiveness of this blended approach to collaborative inquiry for faculty development. As discussed in chapter one, a successful collaborative inquiry should provide opportunities for participants to share ideas, reflect

on their practice, and put those reflections into action (Kasl & Yorks, 2002; Bray, 2002). As described in the findings on participation and based on the participants' perspectives, it is clear that the participants were able to share ideas and reflect on what they were learning about teaching. Although only five of the seven participants developed and tested their own case study as part of this CI, every participant was able to reflect on their practice in some way. Since these reflections were ongoing and simultaneous with their practice, every participant experienced cycles of reflection and action. In the methods chapter, effectiveness was related to the quality of the reflection that is central to the definition of success above and that the literature suggests is required before substantive change occurs (Cranton, 2005; Kasl & Yorks, 2002; Kreber & Cranton, 2000). My findings on the levels of reflection indicate that all participants indeed demonstrated all three levels of critical reflection (problem/content, process/product, and premise). In summary, this blended and collaborative approach did create a successful faculty development project for these participants. This summary, however, does not fully answer the research questions from a qualitative sense. To more fully understand the lessons of this case study, I will discuss the findings in light of the larger literature in the next section.

Discussion and Implications

In this section, I discuss various aspects of the findings in terms of what was particularly interesting and how they relate to the larger literature on blended learning, collaborative inquiries, and faculty development. I have grouped my discussion around three concepts that follow the three components of the COI model (Garrison et al., 2000).

The three concepts are: (a) overall participation and effectiveness (social presence); (b) facilitation of reflection (teaching presence); and (c) levels of online reflection (cognitive presence). As mentioned in the literature review, there were very few empirical studies that specifically look at blended and collaborative approaches to faculty development prior to this project's beginning. Therefore, even the findings discussed below that are confirmations of other works hold significance because they help to support our still limited understanding of how blended approaches to collaborative faculty development projects work.

Overall participation and effectiveness (social presence).

Overall participation.

In terms of overall participation, the participants in this study managed to have adequate face-to-face participation and everyone managed to engage to some degree in the online discussions. This is similar to the report by Lee et al. (2010) (see also Myers et al., 2011; Paulus et al., 2010) that also showed variability in levels of participation. However the degree of variability was greater in that project than in mine. Lee et al. reported face-to-face meeting attendance ranging from 12 to 20 of the 25 total participants (between 50% and 80%) and online discussions ranging from 11 to 25 participants (between 44 and 100%). Face-to-face participation in my project ranged from 5 (71%) to 7 (100%) with an average of 84% overall and my project had 100% participation in the online discussions. However, that 100% is based on the entire ongoing project while Lee et al. had divided their online discussion into smaller segments.

Some of my participants expressed dismay at the small numbers of participants and resultant decreased diversity, which was also noted by participants in the study by Shea et al. (2003). Interestingly, the smaller numbers may have factored into increased overall participation in this study. Myers et al. (2011) suggested that inclusiveness may have decreased participation in their study because not every faculty member had a pressing need to learn the material being presented at any particular workshop. Myers et al. also found that heterogeneity within the small groups formed for the face-to-face workshops created some problems as discussions "often stalled because talk of program differences overshadowed dialogue about the new teaching techniques…" (p. 5). In my study the smaller size increased homogeneity and may have created a sense of dedication and peer pressure both of which may have increased participation.

There is a sort of paradox in that diversity is generally considered a positive aspect of a collaborative inquiry (Kasl & Yorks, 2002), but some degree of commonality allows for the participants to focus on the goals of the CI rather than to discuss their differences. In a similar way, Bair and Bair (2011) also report a series of paradoxes in which many of the positive aspects of online teaching simultaneous create an opposite negative aspect. There is a recurrent theme of paradox throughout the discussion that follows.

Overall effectiveness.

As summarized above, my findings confirm the work of Sherer et al. (2003) and Vaughan and Garrison (2005) that blended approaches are supportive of collaborative faculty development projects. By focusing on college faculty, this study also helps to fill

the gap in the literature that was created by the predominance of online studies being focused on students versus college faculty. Since the initiation of this project, the work of Hiser (2008), Schwier et al. (2009), and Lee et al. (2010) have also substantiated the value of blended approaches to college faculty development.

My effectiveness theme three indicates that participants preferred learning about teaching from each other more than from the literature. In a similar way, Sherer, et al. (2003) reported that the participants in an online community of practice enjoyed working with others, especially "the opportunity to enhance their knowledge of teaching through mutual growth with colleagues" (p. 187). While participants in this study recognized the need to learn more about their craft as teachers and they did read the literature and respond to it, they seemed to feel that learning from the experience of others had more value. This apparent distrust of the literature is reflective of Kreber's (2005) conclusion that teachers spent more time reflecting on experience than on research. This may indicate a need to help faculty members develop a greater appreciation of the scholarly aspects of teaching as suggested by the scholarship of teaching and learning movement (Hutchings, 2010; Kreber & Cranton, 2000).

Staying connected and blending the discussion.

Reflection themes two and four indicate that the online reflections allow the discussion to continue and they allow for more in-depth reflections. This finding is in full agreement with the concept that "the online component allowed for this sharing of different perspectives beyond the limited time for face-to-face sessions" (Vaughan & Garrison, 2005, p. 6). Berger et al. (2008), Garrison and Kanuka (2004), Owston et al.

(2008), and Skibba (2006) also note this ability to extend and continue the face-to-face conversation in the online venue. Reflection theme five indicates that the online reflections allowed participants to keep up even when they had to miss a face-to-face meeting. This is in keeping with other studies (Berger et al., 2008; Garrison & Kanuka, 2004). That is, the asynchronous online discussions can allow for someone who has to miss a particular meeting date/time to still participate. The related finding that the learning moved between the face-to-face interaction, online, and back is consistent with the finding of what Berger et al. (2008, p. 400) called a "flow of ideas" and what Skibba (2006, p. 351) calls a "continuous learning loop."

Reflection theme three adds a particularly interesting and implication from this research in that the online reflections allow for more immediate idea sharing. This is somewhat in contrast to Vaughan and Garrison (2005) that found that the face-to-face aspect "was the preferred venue for initiating a new discussion" (p. 6), but it is consistent with their noting that the online component allowed "the community to extend the exploration, integration and testing of ideas" (p. 4). What I noticed is that sometimes, while away from the group, a participant may have a sudden insight into something related to the CI and that the online venue allowed them to more quickly capture that thought and share it with others. This immediacy aspect of online reflection is connected to the continuity theme discussed above and to Berger et al.'s (2008) concept of flow between the online and face-to-face venues. The ability to quickly capture and post an idea related to an on-going discussion helped keep the discussion moving. This phenomenon may be best explained by the fact that this CI project was focused on the

same general topic (case study teaching) each week (similar to the approach of Berger et al, 2008), as opposed to other studies in which the topic of the face-to-face or online discussions varied between sessions (Lee et al., 2010; Vaughan & Garrison, 2005).

Facilitation of online reflections (teaching presence).

Facilitation of reflection is related to the concept of teaching presence (Shea et al., 2010) in which the teacher (or facilitator) needs to provide the organizational structure around which the students or participants conduct their discussions and share their reflections. Similarly, Pawan et al. (2003) provide suggestions for facilitation, including: structure the discussions, demonstrate overt facilitation, and provide leadership. Based on both my experience with this project and a review of the literature, I have come to recognize there are two components of facilitation of online discussions, which I call structural and cognitive. Structural facilitation includes those actions taken to increase the *number* of reflections and cognitive facilitation includes those actions taken to increase the *quality or depth* of reflection. Each of these will be elaborated on below.

Structural components of facilitation.

The structural aspects of facilitation include platform choices, forum arrangements, and incentives to participate. A poor choice of platforms can greatly decrease participation because as Schwier et al. (2009) noted, the technology itself can be barrier to participation. Schrum et al. (2005) reported a serious flaw in their project because their platform (WebCT) did not support the threaded discussions in a way for students to follow them easily. In this study I chose to use the D2L course management system due to its availability and the participants' familiarity with it. D2L provides a

threaded view of the discussions, which is critical to create a discussion flow (Vaughan and Garrison, 2005). However, as Phil pointed out in the interview, there may be better systems available and perhaps course management systems are not the best venue for faculty development. Other studies have used e-mail (Whipp, 2003), the Blackboard course management system (Vaughan & Garrison, 2005), and more recently web-logs (blogs) (Paulus, Payne, & Jahns, 2009; Schwier et al., 2009) to create online discussions.

Within the D2L platform, I tried to create forums and topics that related to the different concepts that we would be discussing in the face-to-face meetings. My intent was that the titles of the forums and topics would be self-explanatory and that the subject lines of the individual postings would help everyone track the online discussions. Unfortunately, as Bob and Phil both pointed out, we were not very descriptive or consistent in our use of subject lines and the threads became difficult to follow at times. This is an area of concern within the literature also. Wallace (2003) points out yet another paradox of online teaching. On the one hand, highly-structured courses help facilitate learning by focusing students on the important subject matter, but on the other hand, excess structure reduces student autonomy and perhaps reduces engagement. In this study, although the structure was initially confusing, the participants managed to sort out the threads over time. However, the fact that this confusion was mentioned in the interviews indicates that there was still room for improvement in this course design.

Another area of structural facilitation is the use of incentives to encourage participation. As described in the literature review, most studies conducted prior to the beginning of this project dealt with students and thus incentives for posting dealt with

establishing grades based on participation (Rovai, 2007). Since this project dealt with faculty members who were not receiving grades, this incentive was not available to me. Also, unlike the projects reported on by Vaughan and Garrison (2005, 2006), my participants did not receive release time or other compensation for their participation. Instead, I had to rely on regular reminders to everyone that they should be posting. Schwier et al. (2009) suggested that while such persuasion might be effective, participants should *want* to participate and their *choice* not to participate would be a function of their self-directed learning as professionals.

Another way to look at incentives was suggested by Berger et al. (2008) when they noted teachers must have a reason to participate online. That is, they need to find some personal value within the environment. Myers et al. (2011) and Owston et al. (2008) also noted that participants were most active when the topics were something of immediate concern to their teaching.

The experience of one of my participants provides a unique view of online participation and raises some questions about incentives. Phil voiced his opposition to online discussions early in the project and repeated this concern several times. His major concern was that it was “very inefficient” because “I can talk ten times faster than I can type” and that “a large percentage of communication is non-verbal.” Interestingly, Phil’s somewhat offhand comment was verified empirically by Garrison and Vaughan (2005) when they counted the average number of comments per individual in face-to-face discussion at 335, versus only 30 for online discussions.

Despite his reservations, Phil was a very consistent poster to the online discussion boards. Thus, even though he expressed his dislike of this component of the CI, he still participated in it. The best explanation I have for Phil's participation is that Phil wanted to participate out of respect for my participant-observer and facilitator-organizer status. That is, because he was a colleague and knew that I would be doing my dissertation research on this CI, he may have felt compelled to participate more than he would have otherwise. All of my participants probably experienced some degree of this sense of duty to participate. This compulsion may be related to the Hawthorne effect as described next.

The "Hawthorne effect," which is also known as the "demand effect," is a type of bias where participants change their behavior because they are being researched (Shuttleworth, 2009, p. 1; Draper, 2005). While the original research from which the term was derived has since come under criticism (Draper, 2005; Levitt & List, 2011), the potential for that sort of bias in this study still exists and it may have affected the findings. In addition to the general Hawthorne effect, because my participants were also my colleagues there is a potential and perhaps even likelihood that they were more active than they would have been if I were some outside researcher. In this case, this bias produced actual positive results. That is, this bias prompted more postings, which were the desired outcome (more reflection) of the collaborative inquiry.

Cognitive components of facilitation (depth of reflection).

Cognitive facilitation is my term for the interaction of teaching presence and cognitive presence that focuses on what Shea et al. (2009) called "facilitation of productive discourse" (p. 10). I see this as including both implicit facilitation and overt

facilitation. Implicit facilitation is related to the nature of the online, asynchronous environment. As Hanlin-Rowney et al. (2006) note, “the necessity of slowing down fostered deep reflection and thoughtful dialogue” and “The ability to reread our responses and stories as well as those of others made meaning making more accessible.” (p. 330). This is related to my finding that the online reflections allow for more in-depth reflection and is related to the suggestion by Vaughan and Garrison (2005) that the online aspect facilitates deeper reflection by allowing time for more consideration of the statements made by co-participants and of their own experience.

Related to the depth aspect of online reflections is yet another paradox. Although the online venue fosters deeper reflection, some of my participants had reservations about posting online due to the permanence of the writing. As Bair and Bair (2011) note, electronic communication “created a permanent record that took on a quality of finality or authoritativeness, something we felt had no parallel in face-to-face conversations in classrooms.” (p. 7). Schwier et al. (2009) also note that faculty members are reluctant to “throwing out incomplete ideas” (p. 12) due to their academic orientation in which writing is regularly judged.

My concept of overt facilitation is based on the suggestion of Pawan et al. (2003, p. 136) that “overt facilitation and leadership” is a way to increase online reflections. As a participant and a facilitator, I responded to almost every post in an attempt to model participation and as a way to help my co-participants reflect on their own postings. Schwier et al. (2009) also reported that their facilitators attempted to respond to every posting. Although I had some experience in facilitating face-to-face discussion, I was a

novice online facilitator and was still learning how to best prompt further reflections. As Rovai (2007) points out, the challenge for an online facilitator is "to show that student postings are read without the instructor becoming the center of all discussions" (p. 82). Alba's posting where she asked me to "allow someone else to reply" stands as a stark example of this challenge. Alba's perspective was that I was becoming the center of discussion. However, by backing off and not replying, an opportunity for further reflection was lost. As the project evolved, I tried to step back and follow Rovai's (2007) advice to "not respond too quickly to a posting" (p.82) so that my co-participants could also respond, but this exchange indicates that those skills were not fully honed. Regardless, this experience will only serve to increase my facilitation skills.

As the work of Berger et al. (2008) and Whipp (2003) show, multiple iterations and experience help create better facilitation and deeper reflections. In the case of Berger et al., that experience included the creation, over several iterations, of "reflection tools" which were a variety of different activities that prompted more reflection and thus were related to the structural facilitation described above. Related to the goal of reflection, Whipp (2003) suggests that the levels of critical reflection increase with teacher/facilitator experience at posing questions. Although facilitating reflection is an aspect of teaching presence, the reflection process itself is an aspect of cognitive presence and will be discussed next.

Levels of reflection (cognitive presence).

As discussed in the literature review, cognitive presence in the COI model involves four phases of a practical inquiry. Since reflection is an inherent part of the

practical inquiry model, the levels of reflection studied in this project are related to cognitive presence. They are also directly related to the SofT model of reflection. This section discusses the levels of reflection as indicated by my findings in light of this larger literature. I first compare the frequency of occurrence of the various levels indicated in my study to the frequencies reported in other studies. I then discuss the significance of the patterns of premise level reflections. I then discuss how the levels of reflection relate to the practical inquiry model portion of the COI model. Lastly, I discuss a few limitations of the coding matrix.

Comparison to other level of reflection studies.

As mentioned in the literature review, three other studies looked at levels of reflection in an online environment. Although they used different models, they do share with my study an attempt to at least qualitatively identify the frequency of the occurrence of various levels of reflection. Whipp (2003), who was studying ways to better scaffold online reflections in an undergraduate course, followed Hatton and Smith's (1995) categories of reflective writing. She coded e-mail messages among 23 students (spring semester) and 17 students (fall semester) as being non-reflective or at the level of descriptive, dialogical, or critical reflection. Boyer et al. (2006) were studying transformative learning (TL) in an online discussion forum using Mezirow's (1991) theory of TL. They used a Likert scale to code online postings from 59 graduate students as being at "Level 1 (little), Level 2 (somewhat), and Level 3 (a great deal)" based on the "depth or extent of reflection" (p. 344). Kreber (2005) was studying indicators of reflection given by 36 college faculty members during interviews about their previous

year's teaching. Her indicators were based on the Soft Model of reflection (Kreber & Cranton, 2000) which was the basis for developing the rubric used in this study. Although not indicators of online activity, they do have similarities to my study and thus are worth comparing.

In order to create a more visual comparison of the various levels of reflection reported by these different studies, I determined the simple percentage of each level and displayed those numbers in Table 5.1. Because some of the studies did not record non-reflective statements, that table includes a section with those levels removed and the percentages recalculated accordingly. This descriptive comparison is not meant to imply any statistical significance, but is intended to provide a simple visual representation of the reported data.

Because Whipp (2003) and I were the only ones to record non-reflective postings, I can make a more direct comparison between her data and mine. If my contemplative level is combined with my content/problem level in Table 5.1, the resulting 39% is very close to Whipp's data in both semesters. Because neither Boyer et al. (2008) nor Kreber (2005) reported non-reflective activities, the lower half of Table 5.1 shows recalculated percentages with that level removed. If I again combine contemplative with content/problem levels, the sum of 48% is comparable to Whipp's (2003) fall semester group and Kreber (2006). Boyer's (2006) levels seem to be the most different of the four sets of data. As described in the literature review, their data, when compared to the other studies seems to indicate a coding bias toward the middle of the scale. There are three important implications from these comparisons as will be discussed next.

Table 5.1
Comparison of Levels of Reflection Across Studies

Nonreflective Levels Included								
Bridges (2012) Levels	%	Whipp (2003) Levels	% Spring	% Fall	Boyer et al (2006) Levels	%	Kreber (2005) Levels	%
Nonreflective	23	Nonreflective	44	15				
Contemplative	16							
Content/problem	21	Descriptive	43	46	Level 1	14	Content	57
Process/product	28	Dialogical	11	28	Level 2	69	Process	33
Premise	12	Critical	1	11	Level 3	17	Premise	10
Nonreflective Levels Removed								
Bridges (2012) Levels	%	Whipp (2003) Levels	% Spring	% Fall	Boyer et al (2006) Levels	%	Kreber (2005) Levels	%
Contemplative	21							
Content/problem	27	Descriptive	78	54	Level 1	14	Content	57
Process/product	36	Dialogical	28	33	Level 2	69	Process	33
Premise	16	Critical	11	13	Level 3	17	Premise	10

The first implication of these comparisons in reported levels is that my coding rubric appears to work on par with other coding schemes used in related research. Although further refinement and possibly a multi-rater comparison are needed, the rubric was sufficient for my exploratory study. It also seems that the extra level of contemplative statements provides a way to tease out the non-critical reflections from the non-reflective statements or postings.

The second implication of these findings on levels of reflection is that this rubric provided a way to clearly demonstrate that reflection has occurred and at what level. Such reflection is critical to improving professional practice (Schön, 1983, 1987), initiating transformative learning (Mezirow, 1990) to improving faculty practice (Kreber & Cranton, 2000; McAlpine & Weston, 2000). This rubric could allow faculty development facilitators (and faculty members themselves) to more accurately evaluate

reflection as it occurs. This could provide additional feedback and perhaps stimulate even deeper levels of reflection and more significant changes in faculty members' knowledge.

A third significant implication of these findings is related to the quality of reflection. This is seen in two aspects. First, my data are most closely aligned with Whipp's data from her second (fall) semester in which she reported overall "higher levels of reflection". Because the participants in my study had levels of reflection on par with Whipp's *better* group this indicates that the blended approach does facilitate overall better reflection. Second, in all cases the highest level of reflection occurred least often. This is not surprising in terms of Mezirow's suggestion that premise level reflection occurs least often, but the difference in high level reflection across these studies suggests that premise level reflections *could* occur more often if the facilitation were somehow improved. Kreber's (2005) suggestion that faculty members start with premise level reflections indicates that one way to achieve more critical reflection is to have faculty members include statements of their assumptions about teaching and learning as starting points for online discussions. Starting with premise reflections was one of the patterns I noted in my findings and I will further discuss the implications of that below.

Patterns of premise level reflections.

The patterns of premise level reflections show that Mezirow's step-wise flow, problem through process to premise, was the most common pattern. The existence of the reverse flow pattern is interesting, but also shows a logical, step-wise flow from premise to process to problem. Mezirow's flow appears to be an inductive process where a

person's experience of the disorienting dilemma creates thought about how this is a problem that needs to be solved through some process and that processing leads to examination of one's assumptions. The critical examination is induced by the experience and the questioning.

When we see the reversal of this flow, we are seeing a deductive process where a person starts by stating their assumption and then deduces the *proper* course of action based on that assumption. Now one may argue at that point that transformative learning is not taking place because the assumption is not being examined. Using Bohm's (1996) concept of suspension, however, we see that the statement of the assumption is at least to some degree an examination of that assumption. That is, the statement is a form of suspension that could allow for a different outcome. Also, since the assumption is out there at the beginning, all of the following reflection is at least critical of their actions from the viewpoint of that assumption. That is, the actions taken after the statement of the assumption are being done based on reflection and not being done non-reflectively.

I find it very interesting that when the premise occurred in the middle, it was always in problem, premise, process order and never (at least by my indicators) process, problem, premise. This indicates to me that we tend to reflect first on either the direct problem in front of us *or* on our underlying assumptions about our practice. The process is always, just that, a connection between what we have (problem) and what we want to have (premise). An interesting connection of the reverse Mezirow flow is that Kreber (2006) suggests that faculty members should reflect on their premises first while in the process of improving their practice. Although I did not specifically encourage such

activity, it did occur in this study. As mentioned above, the implication for this is that future blended faculty development projects should actively encourage premise level reflection and help participants to recognize the various levels of reflection as they occur.

The patterns that I identified as multiple premises and premise-alone reflections are somewhat problematic because the full cycle of problem, process and premise are not readily identifiable. For the multiple premises, the problem and process levels were recognized, but a single problem led to several related premise reflections. In those cases, it seems that reaching the level of stating assumptions triggered even more premise level reflections. However, in the cases where the premise level reflections occurred alone, without the supporting context (problem or process) it is difficult to determine whether these statements were actually reflections or simply stating assumptions without reflecting on them. Although the disorienting dilemma and other aspects of the reflection process may have occurred elsewhere, there is no direct evidence of them within my data and thus they may not be reflective. This is an area that could be further explored in other studies.

Limitations of the rubric.

There are three limitations of the rubric that I developed as part of this study. The first is that it was designed to be a qualitative rubric and was not a quantitative coding tool. As described in the methods section, content analysis studies often use a quantitative approach in which the coding rubrics are applied by multiple raters and the results (inter-rater reliability) are calculated. This reliability is seen as an indicator of the validity of the coding scheme/rubric. In this case, I developed this code on my own in an exploratory

fashion and did not conduct any form of inter-rater reliability. That is an area for further study and is mentioned below.

The second limitation to the rubric is that I initially based it on Kreber and Cranton's indicators with some attempt to modify them for online use. Mezirow suggests that premise level reflections should critically examine assumptions, but my rubric simply notes when the assumption is stated. Thus, my rubric indicates that premise level reflection may occur, not that the participant actually took the step to examine that premise. This is a limitation of this rubric that could be addressed in future studies by either modifying the rubric or training the facilitator to help explicate the assumptions and help the participants reflect on their own assumptions.

The third limitation of this rubric is that it emphasizes the rational aspects of reflection and does not readily indicate the affective aspects of reflection. As described in Chapter Two, this is related to Mezirow's overall emphasis on rational discourse (Mezirow, 2001, 2009) which can be seen as complementary to emotional aspects of transformation (Dirkx et al. 2006). This may be an overall limitation to online reflections in that the requirement to write about experience may drive participants to express themselves in a more rational way rather as they are writing for others. As Phil pointed out, the lack of verbal cues restricts our expression on line. Dirkx and Smith (2009) noted the same restriction, but also pointed out that emotions are often the driving factor for triggering reflections within online collaborative learning. They also suggest that participants in online discussions can be encouraged to explore the "emotions within their learning" (p. 62) and that facilitators can help participants bring those emotions out for

further reflection. However, Dirkx and Smith suggest that the best way to reveal these affective aspects is to work with the participants using individual messages rather than the group discussion boards. The emotional aspect of online collaborative learning remains open for exploration in future studies. In the next section, I will return to the larger view of the theoretical frameworks that informed this dissertation and summarize how this study has furthered understanding of them.

A return to the theoretical frameworks.

Summary of connections to TL and SOTL.

As described in the discussion on the levels of reflection, this dissertation has added to our understanding of transformative learning by demonstrating that critical reflections can occur within the online aspect of a collaborative inquiry for professional development. This is an extension and continuation of the work by Kreber and Cranton (2000), Kreber (2005) and Kreber and Casteleden (2009) in which they had initially explored the concept that the scholarship of teaching is aligned with Mezirow's view of TL. The rubric developed within this study should become a useful tool for further exploration of online and blended approaches of faculty development. The action research aspect of the collaborative inquiry add to extensive literature on collaborative approaches to faculty development as suggested by Cox (2004) and Kasl and Yorks (2002).

This dissertation also empirically explored the levels of reflections suggested by Mezirow (1991, 2000) and found several patterns to these levels of reflection. These

patterns have not been noted in previous research and may be useful for further exploration.

Summary of connections to COI.

Although this dissertation did not use the COI model for its coding methodology, it did inform the COI framework. In general, it confirmed the concept that blended approaches are valuable for faculty development (Vaughan & Garrison, 2005, 2006) and that the multiple venues increased overall participation (Garrison & Kanuka, 2004; Paulus et al., 2010). The discussion section above connected participation patterns to social presence and design and facilitation aspects to teaching presence. Most critically, the discussion of the levels of reflection helps to more fully illustrate cognitive presence. In the implications section below, this connection will be more fully explored in terms of the cognitive presence coding scheme.

Summary of connections to CI.

The collaborative inquiry that was the focus of this study serves as another example of how CI's work in general and more specifically how they may be conducted using a blended approach. This will be more fully explored below in the section on implications for practice. Before I discuss those implications, I will provide the conclusions that I can draw from this study.

Conclusions

Based on this study I can conclude the following. First, the multiple venues of the blended approach to CI for faculty development allow for professional participants to remain involved with the process even as their busy lives may interfere. Second, in

agreement with Vaughan and Garrison (2005) and Lord and Lomicka (2007), the online venue facilitates deeper reflection by the participants by allowing time for more consideration of the statements made by co-participants and on their own experience. Third, the rubric developed as part of this study allows for the different levels of faculty reflection to be identified within the online environment. The occurrences of various levels of reflection identified by this rubric are generally consistent with similar measurements using other instruments (Whipp, 2003). Fourth, while the pattern of reflections does often follow Mezirow's inductive flow from problem to process and then premise level, there are also times that it follows a deductive flow from premise level back down through process and ending in problem.

Recommendations for Further Study

Based on this dissertation, there are several areas which deserve further study. First, the rubric developed for this study could be subjected to some form of inter-rater reliability tests. As stated above, this study was an exploratory look at the effectiveness of this rubric. Once further verified (and modified as needed), this rubric could then be applied as a content analysis tool to other data sets.

The second recommendation is to further explore the patterns of premise level reflections revealed by this study. As discussed above, these patterns suggest some form of deductive and/or inductive approach to Mezirow's levels of reflection. These patterns need to be studied over a larger number of online postings involving a larger number of participants. Of particular note is the need to further explore the premise-only pattern to

determine whether they were truly reflective or merely stating assumptions. These patterns should also be studied in other settings.

A third recommendation for further study would be to apply the COI Model's cognitive presence coding scheme (Vaughan & Garrison, 2005) to these same discussions and compare the instances of these levels of reflection to the various steps of the practical inquiry model. It would be interesting to see, in an empirical way, how the levels match up with the model and compare that to the conceptual match up that was shown in Table 2.7 in the literature review and reproduced below as Table 5.2. Based on the dual coding, it might be possible to find more direct comparisons between these two models.

As I discussed in the literature review, the COI model's cognitive presence is based on the practical inquiry model (Garrison & Arbaugh, 2007) which includes the concept of reflection (see Figure 2.4). However, the coding scheme related to that model does not specifically address reflection. The rubric developed for this dissertation may serve as model for developing a coding scheme for reflection.

Table 5.2
Practical Inquiry Phases vs. Levels of Reflection

Practical Inquiry Phases (Garrison, et al., 2000)	Levels of Reflection (Mezirow, 1991, 2000
1. Triggering Event	Disorienting Dilemma
2. Exploration	Content of **Problem Process/**product
3. Integration	**Process**/**product** Premise
4. Resolution/application	Process/**product Premise**

Implications for Practice

General implications.

As an action research study, this dissertation has added greatly to my understanding of my practice as a faculty development coordinator. Most importantly, I have come to believe that we need to implement more blended faculty development projects at my school. There is a great potential in this approach to help faculty members improve their practice and overcome their own academic inertia. I now appreciate the need for more overt and specific facilitation of online reflections in collaborative faculty development projects. As I continue my work with the faculty development committee, I will work toward creating more specific questions that prompt reflection by the participants as suggested by the literature (Berger et al., 2008; Rovai, 2007). I will also incorporate teaching about the levels of reflection as a regular part of such activities. In addition to these general goals, I have developed the following practical guidelines for best practices in blended collaborative faculty development projects.

Best practices guidelines.

Based on the literature review and my experience with this project, I have developed the following summary of best practices for planning and conducting a blended collaborative inquiry faculty development project. These practices are organized into generally chronological phases as: Planning, Designing, Facilitating, and Concluding as discussed below.

Planning.

Planning involves initiating and organizing the CI based on some purpose, recruiting participants and planning for meeting times and places. A successful CI must have a purpose (topic) that participants agree is worth investigating (such as investigating a new teaching technique). That purpose must relate to the immediate needs of the participants (Myers et al., 2011; Owston et al., 2008; Schwier et al., 2009). If this is a supported project, the organizer may pick the topic and then invite interested participants to join. In a more grassroots project, the participants may start with a more general goal, but should work toward finding a focus fairly quickly.

Recruit participants based on their interest in the particular topic. Although extrinsic motivation in the form of incentives may seem to be of value, my experience with this project and the literature (Berger et al., 2008; Paulus et al., 2010; Rovai, 2007) seem to indicate that intrinsic motivation based on interest and need create better overall participation. CIs should be conducted based on self-directed learning principles where the participants should want to participate (Schwier et al., 2009). Indeed, one of the principles of CIs is that they are free of coercion (Kasl & Yorks, 2002).

When recruiting, aim for between 5 and 15 participants in the final group (Hiser, 2008; Vaughan & Garrison, 2005). However, expect that a significant proportion of those initially interested will drop out. If the final group is over 15 participants, consider sub-dividing into smaller groups and possibly having more than one CI.

Plan the face-to-face meeting days, times and frequencies in advance if possible. In a grassroots project, create this plan at the first meeting. Participants will develop the habit of attending if it is a regularly occurring event. Keep meetings relatively close

together (every other week or once a month). The closer together the face-to-face meetings, the more likely the participants are to remain engaged (Owston et al, 2008).

Designing.

The designing phase refers to planned activities and considerations for integrating the on-line and face-to-face aspects. Planned activities should be based on the focus and the participants should agree on a set of actions to take during the project and commit to completing them. CIs function within cycles of action and reflection and reflection requires action (Jarvis, 1999; Schön, 1983). As a starting point for planning, I developed the PEER-Reflect model which will be described below. After that description, I will discuss the integration aspects of the design phase.

The PEER acronym stands for the action steps of: presentation, exploration, experimentation, and reporting. These steps generally follow the COI practical inquiry model (see Figure 2.4), but establishes a set of more concrete, easy to understand actions for participants to take. The reflection aspect of this model is that each of these actions steps is to be followed by reflection. Each point of the PEER-Reflect model is described below.

P-Presentation of ideas. The presentation action involves presenting a new idea to the group for them to consider and reflect upon. Presentation in this sense may include reading literature on some aspect of teaching, watching a video, participating in a webinar, or simply the sharing of experiences. This may also be a problem that the group is trying to solve (such as student absences or behavior issues).

E-Exploration of new ideas. Participants need to think about the presented ideas (or problem), research the existing literature, and discuss what they find with others. This distinguishes a CI from traditional workshops where the attendees are more of a passive audience than active knowledge constructors.

E-Experiment with new ideas. This action step implements the cycles of action and reflection aspect of a CI in a practical way. As part of the overall project, participants should experiment with these newly explored ideas in their classes. Participants should be encouraged to start small, explore, refine, and then scale up.

R-Report on experiment. Participants provide reports on their experiments to others. This action step incorporates the multiple ways of knowing and the focus on construction aspects of a CI. Participants should report on what went well and on what did not. Dialogical space is seen here also as participants encourage and support one another as they report on their experience (Paulus et al., 2010).

R-Reflect: Participants should reflect in the online venue throughout each of the four action steps. This operationalizes the cycles of actions and reflections and the reflections should enhance the participant learning because "Reflection is the vehicle for turning experience into knowledge" (McAlpine & Weston, 2000).

The integration aspect of design involves the careful consideration of which activities will occur in which venue (Garrison & Kanuka, 2004). There is no one way to do this, but each action step should be designated to primarily occur in either the face-to-face or online venue so that participants understand the expectations. Table 5.3 below provides some general guidance on the value of each venue for each action step.

Table 5.3
Activity Planning Considerations: Face-to-face or Online Venue

Activity	Face-to-face	Online
Presentation	-Efficient (everyone hears same thing, at same time) -Best for expert presentation	-Allows for participants to return to presentation later. (handouts may accomplish the same thing) -Allows participants to read ahead and anticipate
Exploration	-Allows for immediate interaction and spontaneous construction of new knowledge and understanding	-Allows for more thoughtful consideration -Captures ideas and allows for participants to re-read what was discussed
Experiment	-Conducted primarily in ftf venue as part of practice	-Ideas for experiment could be discussed online
Report	-Allows for immediate feedback and spontaneous creation of solutions to problems	-Allows for report to be posted before the next ftf and thus be more thoroughly understood.
Reflect	-Reflection is encouraged throughout the process	-Primary venue for deep, critical reflection

Reflection should occur primarily in the online venue because that venue stimulates deeper reflection as this study has demonstrated. However, reflection will also occur outside of the project and during the face-to-face meetings. The CL element of dialogical space will facilitate these reflections. Other aspects of facilitation are considered next.

Facilitation.

As discussed in the implications section above, facilitation involves both structural elements and cognitive or overt elements. Structural facilitation includes making platform choices and organization of the online venue. The online platform should be convenient to the participants, but it should also support asynchronous,

threaded discussions. Course management systems (such as D2L and Blackboard) may fit this need, but other, more user friendly systems should be considered.

Cognitive or overt facilitation involves those actions taken to directly facilitate participant reflection (Pawan et al., 2003). As Rovai (2007) suggested, these actions include developing social presence and encouraging participants to reflect more deeply. Facilitators should make the participants aware of the various domains of faculty reflection (instructional, pedagogical, and curricular knowledge) as described by Kreber and Cranton, 2000) and the three levels of reflection (problem, process, and premise) so that they may be more self-aware of the quality of their own reflection. At the beginning and throughout the CI, participants should be challenged to make their assumptions more explicit so that premise level reflection can occur (Kreber, 2005).

The facilitator should maintain a supporting environment and model good posting patterns. However, they should be careful not to become the center of all conversations (Schwier et al., 2009). It is also important that all participants learn to be facilitators and challenge each other to further reflection. In this way, the CI can fulfill the COI concept of teaching presence being created by all participants, not just the facilitator. For the facilitation of the face-to-face venue, consider the four elements of CL (Peters & Gray, 2005), especially dialogical space and multiple ways of knowing. While this dissertation focused on the online aspects of a blended CI, the face-to-face aspects are also important.

Concluding and Follow-up.

Use the report aspect of the PEER model and the online reflections to provide a summary of the overall project. Participants should focus on construction of new

knowledge throughout the CI and then share their new knowledge locally to other faculty members, and possibly at a conference or within a journal article. By reporting their lessons learned the participants are fully engaged in the scholarship of teaching and learning. The participants in this dissertation's project accomplished that by reporting on the lessons learned (see Appendix 6) during a faculty in-service project. By reporting locally, the participants will encourage others to participate in future CIs and the larger campus may begin to transform into a learning organization (Cox, 2004).

Summary of best practices.

In summary, the best practiced described above and distilled into my PEER model represent a synthesis of both the literature review in chapter two and the findings from this particular study. I offer them here as suggestions and guidelines, not as absolute rules that must be followed. Collaborative inquiries are highly individualized undertakings with each participant shaping the process and the outcomes. As a case study, this dissertation provides one example to be considered. In the next section, I will step back and reflect on the overall process of conducting this study.

Overall Reflection on the Process and What I Learned

As I approached this project, I was aware of three different roles that I had and the corresponding three perspectives or stances. First, I was a college professor interested in improving my practice as an instructor. From this perspective I was a peer, a co-participant, and a friend to all of the other co-participants. Second, I was a faculty developer. I had previously conducted numerous workshops and was the organizer of this particular CI. From this perspective, I was the facilitator of the learning activities for

myself and my peers. Third, I was a student and a novice researcher in the field of collaborative learning and educational psychology. From this perspective, I was the observer and researcher.

These three levels can be seen as movements from the personal, to the collegial member of a group, and to being a somewhat impersonal outsider (for them). There is also an interesting parallel that as I moved across the spectrum from personal toward impersonal, there was a corresponding decrease in my expertise and experience. At the beginning of this project, I was a fairly well-experienced instructor with over 10 years of full-time teaching under my belt. I was a somewhat experienced, but part-time faculty developer, having conducted numerous workshops for and with my peers. But I was a very naive and inexperienced researcher who had only completed a few bits of data analysis as part of graduate courses. Thus, as I moved across these three levels, I had decreasing levels of initial confidence in my abilities. These served as disorienting dilemmas that have resulted in countless hours of personal reflection and transformative learning.

These levels also parallel the view of Reason and Marshall (2001) that all good research has value to three levels or audiences: “for me, for us, and for them” (p. 413). I will address the value of this research to each of these three audiences. For myself, I developed several improvements to my teaching practice. I learned to write case studies that are more realistic and that foster more critical thinking. I changed the way I take up papers so that now everyone’s voice is heard rather than just “the best” and, in doing so; I eliminated many of the problems associated with group learning. More importantly, I

confirmed that the methods of collaborative learning that I had experienced within the protected environment of graduate school work within the professional environment of my workplace as well. While this may not seem like much of a discovery, as I described above, theories learned in school often do not apply to practice. In this case, they did.

For us, we learned quite a lot about the case study teaching method and even more about collaboration through our own small group work. We learned how small groups work best. We learned to appreciate the perspectives of others and how to learn from each other. We also learned that even faculty members from different departments have a lot in common.

For them, I demonstrated that a blended approach to college faculty development does indeed work and thus confirmed the work of Vaughan and Garrison (2005). I have shown that it is possible to apply Mezirow's three levels of reflection to faculty development as suggested by Kreber and Cranton (2000) and identify them in online reflections. I also created a functional rubric for conducting that identification. The value of this rubric is that others can now "watch" TL as it occurs online. With very little work, this rubric can be adapted to other online discussions, possibly even those unrelated to faculty development.

Finally, I discovered that I am now part of all three audiences. As I complete this dissertation and submit it for approval, it becomes part of the public record and, as such, part of the on-going conversation that is the "them" of the research world. I have become one of them. But my assimilation into the broader culture did not destroy my

individuality. Instead, it has enhanced it. My personal voice is now blended with the voices of Mezirow, Kreber, Garrison and others.

Epilogue: Where Are They now?

Since the conclusion of this study, the participants have continued along their professional pathways and to improve their practices as instructors. The two participants that were adjunct instructors have both now obtained full time tenured-track positions at other colleges. Many of us serve the college in leadership positions, as Faculty Senators and/or as chairs of college-wide committees. The concepts of collaboration learned within this CI serve us well as campus leaders.

Those of us that teach within anatomy and physiology have developed an online discussion board (using D2L) to share teaching tips and ideas and to discuss problems related to the course. Although that discussion board is more utilitarian than the one in this study, there are still moments of reflection that occur within those online discussions. All of us that developed or revised a case study as part of this project continue to use case studies in our teaching and we encourage our peers to do so as well. In August, 2007, we collectively presented a faculty development workshop on how to use case studies and small groups in teaching.

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Appendices

Appendix 1: IDC Proposal

Faculty "Learning Circle" Focused on Case Study Teaching

I. Project Overview

A. The Problem.

Community college teachers are subject matter experts with advanced degrees, but we rarely have any formal training in educational processes. Because of this, we tend to teach as we are taught, learn as we go and rely on professional development activities to provide insight into pedagogy. Unfortunately, these activities tend to be short in-service workshops that are overly broad in scope and difficult to put into practice (Erklenz-Watts, Westbay, & Lynd-Balta, 2006). Even if faculty are inspired to change based on these limited activities, we will then face numerous barriers to implementing any changes. These barriers include isolation, lack of support (Erklenz-Watts et al.), and what I call academic inertia.

Academic inertia is the net result of external barriers coupled with the human tendency to not fix what is not overtly broken. What has worked well enough in the past should be good enough for the future. However, "good enough" may not be the level of excellence that we desire for ourselves or our students. It takes a very strong internal change to cause veteran faculty members to want to change their practice (Pill, 2005). This internal change is best produced by deep reflection on our methods and, more importantly, on our underlying assumptions about teaching and learning. This deep reflection forms the basis of reflective practice, which has been suggested by TBR as an optional model for program evaluation (TBR, 2007). While reflection can be performed alone, collaborative reflection has been shown to be extremely effective in faculty improvement (Casey, 1996; Dunbar, 1996; Erklenz-Watts et al., 2006; Levine, et al., 2007; Ludwig & Taymans, 2005).

The case study method of teaching has been shown to be very effective at teaching content while also improving critical thinking skills and overall student retention (Bilica, 2004; Herreid, 1998, 2005; Lundeberg & Yadav, 2006). Unfortunately, many college professors don't use the case study method because they have no training in its use and/or are unsure of its effectiveness. I believe that more faculty members would use case studies in their classes if they had a chance to explore their usefulness within the context of a supportive and reflective faculty development group.

B. Proposed Approach

I propose to establish a collaborative and interdisciplinary "learning circle" (Lynd-Balta et al., 2006) to systematically explore the case study teaching method during Spring Semester, 2008. This group would be formed by invitation to all PSTCC faculty members, but would be limited to the first 15 volunteers. The group size needs to be kept small to create cohesion and to make participants comfortable with the process.

The learning circle will meet in person every other week to discuss various aspects of case study teaching and develop new case studies for their classes (see time line in

appendix 1). Participants will implement these cases studies in their courses during the semester and the learning circle will meet to collaboratively reflect on the experience. Additionally, we will establish an on-line reflection and discussion board on D2L to continue our dialogue between our biweekly meetings. Based on these reflections, the faculty members will further their understanding of the method and improve their specific case studies. As time allows, subsequent case studies may be developed and implemented. In this way, we will implement the cycles of action and reflection that are integral to reflective practice.

C. Expected Learning Improvements: The primary learning improvement from this activity will be faculty development. As we explore and implement the case study method in our classrooms, we will also critically reflect upon our assumptions about teaching. These reflections and new experiences will lead to improved understanding of teaching and an increased repertoire of teaching techniques. Improving faculty teaching should lead to better student learning. The increased use of case studies should improve student understanding of content and increase critical thinking skills (Herried, 2005)

II. Additional Project Information

A. Consistency of Project to IDC Purposes: This project will directly support faculty development and implementation of innovative teaching techniques (case studies) that should lead to improved student learning.

B. Links to College and Departmental Goals: The case study method emphasizes critical thinking and improves problem solving skills which are consistent with the General Education Goals for 2004-2007.

C. Cost Efficiency Considerations: This project will directly support the participating faculty members to develop and use case studies. These professors could then serve as experts within their departments to further increase the use of case studies as appropriate throughout the school. This will create long-term self-sustaining improvements in instruction. In terms of finances, we could compare the cost of sending just 5 of these faculty members to a week-long seminar on case study teaching. (The University of Buffalo offers one every May). The travel and per diem costs of 5 faculty members would be approximately $2600 (not including lodging), while the cost of 3 hours release time and stipends for 15 participants would be $2580. Thus, for about the same cost, we can provide more effective faculty development for more people.

III. Project Evaluation: This project will be evaluated at two levels: faculty and student.

A. Evaluation by Participating Faculty. Throughout this project the faculty will maintain a weekly reflective journal in which they will record their perceptions of the collaborations and their personal exploration of the case study method. At the end of the Spring Semester, I will interview each participant to further capture their perception of

the experience. These interviews and journals will form the data for a qualitative phenomenological and thematic analysis. The results of this analysis will provide a richly detailed description of this experience from the participants' perspective.

B. Evaluation of Student Impact. Since instructor situations will differ, each participant will choose how to evaluate the impact of these changes on their own students' learning. A few possible methods of evaluation include: using Classroom Assessment Techniques to assess the impact of case studies on formative learning, Likert scale surveys of student perception or possibly statistical comparisons of test performance between sections that use case studies and those that don't.

C. Final Report Plan. I will conduct participant interviews at the end of Spring semester and during the first few weeks of summer as schedules permit. I will analyze the data and produce a preliminary report that I will share with participants. Based on feedback from the participants, I will complete a final report that I will submit to the IDC by the end of August, 2008. That report will include my analysis of participant perspectives and each participant's personal evaluation of student improvents.

IV. Project Budget: $2,580 total: $1830 for release time + $750 for stipends

A. Materials: No special materials for this project are needed other than already existing copying and computing resources. I will request a special D2L course to provide an on-line reflection site and discussion board to supplement the bi-weekly meetings.

B Reassigned Time: 3 Hours for the project facilitator: $1,830.00
(3 hrs x $560/hour + $150 for office hour) That time will be used to:
(1) Research, copy and disseminate literature related to case study teaching
(2) Create and maintain the D2L on-line supplement to the bi-weekly meetings
(3) Facilitate collaborative meetings and provide individual support as needed
(4) Conduct participant interviews and analyze data.

C. Professional Development Stipend: $50.00 for each participant. (maximum of 15)
As an extra incentive for faculty to participate, I would like to offer a $50.00 stipend to each participant. The stipend would be payable at the end of the semester after completion of the project and submission of final reflection.

Appendix 2: Indicators of Reflection

Derived from Kreber and Cranton (2000) and Kreber (2005b)

Experienced-based indicators:

1. Instructional knowledge, Content reflection
a. articulating what one knows about the instructional strategies one uses
b. discussing teaching approaches with colleagues
c. reading newsletters on teaching (for example, The Teaching Professor)
d. participating in educational development workshops

2. Instructional knowledge Process reflection
a. regularly collecting feedback from students on how well they like the approach used
b. collecting data from students on instructional changes they like to see
c. paying attention to end of term teaching evaluations

3. Instructional knowledge , Premise reflection
a. comparing different instructional strategies for their suitability in a given context
b. discussing teaching approaches with a colleague and changing approaches as a result
c. experimenting with different instructional strategies, keeping track of the results, and making changes if results so suggest

4. Pedagogical knowledge, Content reflection
a. articulating what one knows about how students learn
b. listening to others, observing how others learn, and discussing or writing about it
c. participating in educational development workshops
d. listening to what students say during office-hours and comparing it to what one thought one knew about how they learn
e. asking students for their instructional preferences

5. Pedagogical knowledge, Process reflection
a. repeatedly checking whether or not students understand
b. paying attention to the kinds of questions students ask
c. collecting data from students on how well they are learning
d tracing and recording students' success later in their careers
e. observing others teach and observing the reactions of their learners
f. making efforts to getting to know the students beyond the classroom

6. Pedagogical knowledge, Premise reflection
a. experimenting with different instructional strategies, keeping track of how well they help students learn, and making changes if results so suggest

Appendix 2: Indicators of Reflection, continued

7. Curricular knowledge, Content reflection
a. articulating one's goals
b. including goals in course outline
8. Curricular knowledge, Process reflection
a. keeping in close touch with employers on whether one's goals are in line with what they need
b. showing how goals of one's teaching relate to what students need to live successful lives
c. discussing goals with colleagues (e.g., course review committee)
d. explaining how goals have changed over time
9. Curricular knowledge, Premise reflection
a. Consulting with employers to see what goals they have in mind.
b. Participating in a curriculum review committee

Research-based indicators

1. Instructional knowledge, Content reflection
a. attending seminars and workshops on how to teach at teaching-related conferences
b. participating in university courses on teaching and learning
2. Instructional knowledge, Process reflection
a. comparing insights gained from teaching-related workshops and seminars to one's own teaching practice
b. comparing insights gained from courses on teaching and learning to one's own teaching practice
c. presenting findings from classroom teaching experiments at teaching-related sessions at conferences
3. Pedagogical knowledge, Content reflection
a. reading the literature on teaching and learning
b. participating in university courses on teaching and learning
4. Pedagogical knowledge, Process reflection
a. consulting with an educational development specialist
b. comparing research-based insights gained from courses on teaching and learning to one's knowledge of how students learn
5. Curricular knowledge, Process reflection
a. writing articles that compare the usefulness of textbooks in one's field and compare outcomes of analysis to own text and course content

Appendix 3: Participant Interview Protocol

I. Scheduling the Interviews

The interviews will begin after the last in-person meeting. I will negotiate the timing of the interview based on participant schedules. The week after the last meeting is our final exam week and that can be a busy time for college professors, so some interviews will be completed in May or June. Although I am aiming for the interviews to last only an hour, I will schedule 90 minutes per session to avoid rushing the interview and to allow for further exploration of topics as they occur. I will try to schedule only one or two interviews per day so that I will have sufficient time to record my notes and reflections for each interview.

II. Establishing Dialogical Space

Since I will be interviewing co-participants, I will have already established a general rapport with them before the interviews. However, I will still need to be welcoming and supporting and work toward establishing the same sort of dialogical space in the interview setting as we had in the ftf meetings.

III. Technical and Administrative Issues

I will use a tape recorder to fully capture the interview, so I must ensure that I have sufficient tapes, power supplies, etc. Also, the equipment and room setting will be tested for acoustics and microphone sensitivity before any interviews occur. Since I will have been taping the ftf meetings throughout the project, I don't foresee any major difficulties arising from the presence of the tape recorder.

The questions shown below will be printed onto paper with ample space for taking notes. However, I will take very few actual notes as my focus will be "in the moment". I will carefully listen to the interviewee and observe non-verbal communication. My notes and reflective comments on the interview will be written within 2 hours of the interview itself.

IV. Questions to Ask.

1. Please tell me about your experience this semester with our collaborative inquiry group?
2. Please tell me what you think about the overall effectiveness of this approach to faculty development?
3. What have you learned about the case study teaching method?
4. What have you learned about yourself?
5. How has what you learned changed your teaching practice?
6. What stood out for you about the on-line reflection aspect of the collaborative inquiry?
7. How did you perceive the relationship between on-line reflection and your overall development during this collaborative inquiry?
8. Can you tell me what sort of thing facilitated (or inhibited) your reflecting on-line?
9. Is there anything else that you would like to share about our experience that we have not discussed today?

Appendix 4: Levels of Reflection Rubrics with Example Statements

Level of Reflection:	Mezirow's (1991) Descriptions	Kreber & Cranton's (2000) Indicators	Bridges (2012) Online Indicators	Example Statements from the online Discussions (notes in parenthesis refer to the exact location in the data)
Non-reflection	-Non-reflective habitual action	No indicators given for non-reflection	-Discussing logistical or administrative issues -Asking clarifying questions that did not create further reflection	"Can you post the final version of the case study so we can see it?" (Alba in Ron's Case Study, C-5)
Non-Critical Reflection/ Contemplation	Non-reflective thoughtful action or introspection	No indicators given	-Describing an experience without noting any problem with it.	"I loved organizing the material and the other teaching assistants as well as teaching the classes. Some may argue it is genetic, as my mother was an elementary teacher and my father was a chemistry professor. None- the -less, I found my calling." (Alba in biographical reflections, B-1)
Content (Problem) Reflection	-Description of the problem **"What"**	-Discussing [teaching] materials and methods with students or colleagues -Reading articles on how to teach	-Describing how we teach -Noting a concern with how we teach -Describing a concern or problem with how our students respond to our teaching	-"One of the challenges in teaching A&P (Anatomy and Physiology) is that students have a tremendous amount of material to learn in a short time." (Alba in 1st meeting reflections, D-4) -"What I dislike about that same assignment is that the answers for the definitions tend to be way too sound-bitey and lacking any depth." (Susana in Ron's Case Study, B-1)

Level of Reflection:	Mezirow's (1991) Descriptions	Kreber & Cranton's (2000) Indicators	Bridges (2012) Online Indicators	Example Statements from the online Discussions (notes in parenthesis refer to the exact location in the data)
Process (Product) Reflection	-Strategies and procedures of problem solving -Checking our decisions - Assessing the adequacy of our efforts **"How/How Well"**	-Gathering data on student's perceptions of methods and materials -Comparing results of research on teaching to results in our own classroom -Asking for peer review of course outline -Conducting an action research project on student learning	-Discussing changes we have made or would like to make to our teaching -Asking for/providing peer feedback about our ideas for change -Discussing the results of alternative teaching methods -Discussing research literature on alternative teaching methods	- "This case study should make students think about how all the body systems we covered this semester work together." (Alba in Alba's Case Study, A-1) -"Disease case studies certainly do tie many units of information together so that the students can see examples of real world applications." (Susana in 1st meeting reflections, D-5)
Premise Reflection	-The critique of assumptions -Merit and functional relevance of the problem -Problem posing as opposed to problem solving **"Why"**	-Participating in philosophical discussions on student learning	-Discussing why certain outcomes are more important than others -Stating beliefs or assumptions about teaching or learning	-"What are the specific features of the two studies you offer that inspire you to praise one of these studies and "condemn" the other?" (Phil in Ron's Case Study, A-3) - "I firmly believe that students should have multiple opportunities given to them so they are forced to develop better critical thinking and problem solving skills." (Alba in Ron's Case Study A-23)

Appendix 5: Approved IRB and Consent Forms

THE UNIVERSITY of TENNESSEE

Institutional Review Board
Office of Research

1534 White Avenue
Knoxville, TN 37996-1529
Phone: 865.974.3466
Fax: 865.974.7400

April 11, 2008

IRB#: 7594 B

TITLE: Reflection in Collaborative Inquiry for the Professional Development of Community College Faculty

Bridges, Ron
Educational Psychology & Counseling
508 W. Meadecrest Drive
Knoxville, TN 37923

Paulus, Trena
Educational Psychology & Counseling
515 Bailey Education Complex
Campus

Your project listed above was reviewed and has been granted IRB approval under Expedited review.

This approval is for a period ending one year from the date of this letter. Please make timely submission of renewal or prompt notification of project termination (see item #3 below).

Responsibilities of the investigator during the conduct of this project include the following:

1. To obtain prior approval from the Committee before instituting any changes in the project.

2. To retain signed consent forms from subjects for at least three years following completion of the project.

3. To submit a Form D to report changes in the project or to report termination at 12-month or less intervals.

The Committee wishes you every success in your research endeavor. This office will send you a renewal notice (Form R) on the anniversary of your approval date.

Sincerely,

Brenda Lawson

Brenda Lawson
Compliances

Appendix B:
INFORMED CONSENT STATEMENT

Reflection in a Blended Collaborative Inquiry for the Professional Development of Community College Faculty

INTRODUCTION

You are invited to participate in a dissertation research project. The purpose of this study is to investigate reflection as it occurs during a collaborative faculty development project that blends in-person and online activities

INFORMATION ABOUT PARTICIPANTS' INVOLVEMENT IN THE STUDY

This study is looking at your experience as part of the on-going collaborative inquiry into the case study method of teaching at Pellissippi State Technical Community College (PSTCC). Your involvement will consist of participating in the bi-weekly in-person meetings and posting of reflections on to the online discussion board (in D2L). These activities will occur throughout spring semester 2008. The in-person meetings will be audio-taped in order to supplement the field notes of the primary investigator. The online reflections will be downloaded into a word processing file for analysis by the primary investigator.

In addition to the regular meetings and online reflections, you will be asked to participate in an end-of-project interview at the end of spring semester. That interview will last no more than 90 minutes and will be audio-taped and transcribed for further analysis by the investigator.

RISKS

There are no foreseeable risks associated with this study.

BENEFITS

The primary benefit from this research will be to further our understanding of this particular approach to faculty development. The reflections and dialogue may help you to further understand your practice.

CONFIDENTIALITY

Due to the small size of this group, confidentiality cannot be guaranteed. However, the researcher will make every effort to keep all records confidential. Data will be stored securely and will be made available only to persons conducting the study unless participants specifically give permission in writing to do otherwise. Pseudonyms will be used for all participants in any oral or written reports which could link participants to the study.

_____ Participant's initials

COMPENSATION

There is no compensation for participating in this research study.

CONTACT INFORMATION

If you have questions at any time about the study or the procedures, (or you experience adverse effects as a result of participating in this study,) you may contact the researcher, Ron Bridges, at PSTCC in AL 226A, or by phone at: (865) 694-6696. If you have questions about your rights as a participant, contact the Office of Research Compliance Officer at (865) 974-3466.

PARTICIPATION

Your participation in this study is voluntary; you may decline to participate without penalty. If you decide to participate, you may withdraw from the study at anytime without penalty and without loss of benefits to which you are otherwise entitled. If you withdraw from the study before data collection is completed your data will be returned to you or destroyed.

CONSENT

I have read the above information. I have received a copy of this form. I agree to participate in this study.

Participant's signature _____ Date _____

Investigator's signature _____ Date _____

APPROVED
By Brenda Lawson

APR 1 1 2008

Appendix 6: Lessons Learned by Participants

Based on the thematic analysis of the online discussions and the participant interviews, I identified 16 themes related to the lessons learned by participants. They are organized into four categories as shown below.

Category One: What we learned about case study teaching

1. There is a depth of literature about case studies and there are many different ways to use case studies. What the literature says makes sense overall and much of what we already do can be considered a form of case study.
2. Case Studies are good way for students to learn critical thinking and problem solving skills.
3. Case studies allow students to learn beyond memorization and begin to see how concepts are related to each other and how they apply to the world beyond the classroom.

Category Two: What we learned about group learning

4. Group work helps students to learn more than they could on their own.
5. Group work is a skill set that students need to learn.
6. Group work creates grading and responsibility issues, but these issues can be overcome.

Category Three: What we learned about teaching in general

7. We need to clarify our goals and expectations for teaching and examine our assumptions.
8. Lecture is not the only way to teach.
9. It is difficult to teach and assess critical thinking.
10. Much of our assessment is based on student communication skills.
11. There are a variety of ways to assess and grade learning.
12. On-line discussions can enhance traditional learning.

Category Four: What we learned about ourselves.

13. We all share a love of teaching.
14. We need to be challenged to learn more about our teaching.
15. We are not alone. Teaching is an isolated practice, but I'm not the only one that has problems.
16. We need to be committed to changing our teaching and committed to participation in projects such as this.

VITA

Ron Bridges was born in Lakeland, FL and graduated from Lake Gibson High School. After obtaining a BS in Biology from Florida Southern College, he entered the Army as a Chemical Officer. While on active duty, Ron completed a MS degree in Biology Education from Troy State University in Dothan, AL and a MS degree in Analytical Chemistry from Georgia Tech. After leaving the Army, Ron has worked as a Biology/Chemistry Instructor at Chattahoochee Technical Institute and as a Biology Professor at Pellissippi State Community College. Ron Bridges is currently an associate professor in biology and the faculty president at Pellissippi State.