

HEIDI LEE ALVAREZ

**Distributed collaborative
learning communities
enabled by information
communication technology**



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enabled by information communication
technology**

Distributed collaborative learning communities enabled by information communication technology

Ondersteunen van samenwerken en leren in geografisch verspreide communities door
Informatie en Communicatie Technologie

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PREFACE

Collaborative learning communities are becoming recognized and effective ways of learning especially when participation leads to higher level learning for knowledge creation. The approach to learning has shifted from the solitary mode to learning and knowledge creation as a collaborative effort. A collaborative learning method is learning within a community (learning as belonging), learning within a practice (learning as doing), learning by creating and sharing meaning (learning as experience), and learning by building identity (learning as becoming) (Wenger, 1998). People in a collaborative learning context help each other make sense by developing joint and shared understanding. Learners are sometimes separated over distance and time, so collaboration is often mediated through the use of information and communication technologies (ICT). This phenomenon of technology, enabling a number of distributed people to learn collaboratively in groups or Collaborative Learning Communities (CLCs), has been growing steadily and impressively over recent decades. The articulation of CLC characteristics stem from the Communities of Practice and Communities and Technologies movements that have taken root in twenty-first century Information Society dialog.

Collaborative Learning Communities share values such as clear communication to define goals, timelines and tasks, and progress updates. Distributed learning communities especially need clear communication in a virtual environment. Technology has not reached the quality of a face-to-face meeting environment. Body language, eye contact, and other tactile elements are not yet adequately transmitted in an ICT enabled collaborative environment, thus providing a space for improvement. Optical networking and computer technologies are changing the possibilities for virtual environments. Greater network bandwidth at lower costs creates an opportunity to define and implement more life-like enhancements within ICT.

This opportunity for technological improvement necessitates a deeper understanding of the communication attributes that distributed learners' value to get the most out of their activity together. Designing a roadmap to integrate those values into the ICT enabled distributed collaborative environment is of interest in this research. For example, eye contact between colleagues in a meeting can have a significant impact in swaying collaborators to a particular point of view, of imparting encouragement, praise, and even diffusing dissent or disruptive behavior. In the virtual environment of today, eye contact is harder to achieve and the quality of the video, at any given moment of the transaction, is still unpredictable.

Distributed collaborative learning communities, while dependant on ICT, are equally dependant on a methodology that takes into account the social characteristics of learning such as knowledge sharing, level setting, and community building including concepts of common ground and fostering trust (Klobas & Renzi, 2002). I believe that successful collaborative engagement in a learning community, as in all communities of practice, requires that the individual participants derive some credit (i.e. value) for their

contributions. Collaboration also requires the sharing of credit and acknowledgement with colleagues. The following quote inspired the cover design because it rises above the individual member and the immediate community activity to consider the universal possibilities of our collaborative endeavors.

Dissecting a creation in order to assign individual credit can easily become counterproductive. To celebrate our efforts and our achievements, we need not become blind to the social fabric that makes them possible. We need not deny each other the recognition of our mutual interdependence. At the very least, we can appreciate those close connections, conversations, and communities in which our participation is obvious, and this is what acknowledgments are about. But this recognition must be an opening, not a closing. If, as complexity theory would have it, a butterfly flapping its wings can trigger monsoons, then how are we to know which butterflies and which flappings (sic) of wings to include in the reach of our recognition, and which to exclude? (Wenger, 1998, p. xiii-xiv)

About the Cover:

The front cover features a picture by Claude Monet (French, 1840-1926) called Waterloo Bridge, London, circa 1903. It is oil on canvas and is housed in the Carnegie Museum of Art, Pittsburgh. The cover design is by the American graphic artist, John Welker, (Pixels+Points) of Baltimore, Maryland. The cover was inspired by the notion of learning as becoming (E. Wenger, 1998) indicated by the butterfly that was once a caterpillar, and learning as doing suggested by the butterfly flapping its wings symbolizing the scholar engaged in the activity of distributed collaborative learning, triggering knowledge creation.

The painting is the central background element which fades into the night sky. The bridge symbolizes the connections of community, collaboration, and distributed learning. The painting represents the temporal element of the past. The image of the book represents learning in the present and the flipping of the pages is synchronized with the flapping of the butterfly's wings. The computational grid element is the circular focal point around the butterfly tying together the continuum of past, present and future. Coordination among the images is achieved as the butterfly antennas glow like optical fiber as they bend into the grid pattern and becoming part of the globally connected broadband networks that support ICT enabled distributed collaborative learning.

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1.0 Introduction

1.1 The Phenomenon of Distributed Collaborative Learning Communities

Traditionally, learning has been considered a solitary activity where students listen to a teacher in “broadcast” mode, each person working independently, and then going to the library or home to study the lecture notes, textbook, and other materials alone (Wenger, 1998). The learning, teaching and assessment all evoke images of a scholar or learner, either toiling solitarily, or passively imbibing knowledge from a lecturer or from texts in ‘splendid solitude’. While this mode of learning may be useful in certain situations, for example in a privileged lecture by a subject matter expert, learning can also be a collaborative phenomenon, where a number of people collaborate to develop a joint understanding of the situation (Wenger, 1998; Klobas & Renzi, 2002).

People in a collaborative learning context help each other in making sense of the various facets of the phenomenon and developing a sense of a joint and shared understanding. The act of collaborative learning and therefore Collaborative Learning Communities (CLCs) require intense interaction between their members for. This intense interaction is required for the members to develop identification with the community, develop a common ground, and for sharing and creating common meaning (i.e. knowledge). The intense interaction is difficult enough in collocated homogeneous communities. But when the community is distributed, poly-contextual, and diverse (poly-inclusive¹), the various gaps between the members of the community make it difficult to interact to develop a sense of identification, common ground, and shared understanding. Consequently bridging technologies that make it possible for the members to interact intensely become essential. Thus the focus of this dissertation is on the use of ICT as a distance bridging technology in the context of distributed CLCs.

In North America since the late 1990s, there has been a move from a competitive to a collaborative culture of learning and practice. An early example is the intellectual commons, which has its roots in academia, where self-organizing collaborative communities have come together through the Internet to pool their brainpower or share insights to solve a problem (Friedman, 2005). The pendulum in approaches to learning has shifted from the solitary mode to learning and knowledge creation as a collaborative effort. A collaborative learning method is learning within a community (learning as belonging), learning within a practice (learning as doing), learning by creating and sharing meaning (learning as experience), and learning by building identity (learning as becoming) (Wenger, 1998).

This pedagogical shift in thinking is driven by recent research suggesting that in professional and technical fields people learn more effectively using the collaborative model (Hestenes, 1995). Moreover, as the learners are sometimes separated over

¹ includes a variety of people

distance and time, the collaboration is often mediated through the use of information and communication technologies. These technologies not only help the people in a learning community to communicate across distance and time. They also provide for collective memories, where past discourse, discussion, and effort towards joint sense-making can be captured, stored, organized, and made available as community or organizational memories for future endeavors (Veltman, 2004; IEEE-TCDL, 2002).

This phenomenon of technology, enabling a number of distributed people to learn collaboratively in groups or Collaborative Learning Communities, has been growing steadily and impressively over recent decades. Factors such as globalization, international workforce development, the democratization of scientific research, multiple careers tied to extended life-spans, all contribute to an interest from the student, faculty, administrator and researcher stakeholder in participating in and supporting distributed CLCs mediated by ICT. The articulation of CLC characteristics stem from the Communities of Practice and Communities and Technologies movements that have taken root in twenty-first century Information Society dialog.

At this time, we do not understand enough about the phenomenon of Collaborative Learning Communities augmented by technology. By undertaking this study of the existing concepts and characteristics, and analyzing the empiricism of ICT enabled CLCs, people who are trying to design and support collaborative learning can make informed targeted improvements. In the last few years, people have been moving toward collaborative work and learning (Klobas & Haddow, 2000; Olson, Malone & Smith, 2001b), but there has not been much study of the way ICT effects this collaboration because we are at the beginning of the use of ICT for this purpose. Moreover, we know very little about learning in a globally distributed environment (Vogel, Davison & Shroff, 2001). The problem under investigation in this research stems from the need to build a body of knowledge to help us transition from traditional solo learning to collaborative learning and at the same time move from collocated learning to distributed learning. The problem can be outlined thus: As the phenomenon of ICT mediated Collaborative Learning Communities (CLCs) is somewhat recent, at this time we do not have a good understanding of what role technology plays in CLCs, when and how this role is successful, and where there are possibilities for improving CLCs by deploying better uses of technology.

1.2 Significance of the Problem; Understanding Collaborative Learning Communities Enabled by ICT

CLCs are a growing phenomenon (Wenger, 1998; Klobas & Renzi, 2002). At present, the most advanced media and the best collaborative technologies are not being used in CLCs and therefore the communities may not be achieving their full potential. An understanding of the role of technology in enabling distributed collaborative learning can be applied to improve this method of learning to the benefit of the stakeholders (e.g. the students, faculty / researchers, administrators and technologists). There are two aspects to consider when describing the significance of the problem. First, this is an important phenomenon because it holds considerable promise for numerous people, and second, as

we do not yet completely understand the problems and issues we cannot fully develop technology enabled Collaborative Learning Communities to make them more widely available. Richer media and collaborative work technologies are likely to have inevitable and significant impact on Collaborative Learning Communities separated by distance. We will explore how these advances may apply to our empirical study later in this dissertation.

Through the use of broadband connections it is possible to deliver a much richer ICT experience than was known as little as ten years ago (Huysman, 2004). These advanced networks now support a globally distributed system for computation that only resided in supercomputing centers as little as five years ago (Newman, Bunn & Finholt, 2003). Such significant technological advances have enabled academic institutions to move rapidly toward the use of the Internet to offer courses and programs, as well as to develop virtual universities with robust research agendas. According to a recent study by the International Data Corporation (Brennan, 2001), the e-Learning industry is booming, supporting growth from \$6.3 billion in 2001 to more than \$23 billion in 2004. Wyatt (2001) quotes Walton as follows:

“The promise of e-learning or Internet-enabled learning is beginning to be realized by corporate America,” says Walton, who advises large companies on human resources technology and e-learning programs. “Today we’re seeing more synchronous, two-way online learning environments, where employees have immediate interaction with each other and experts in the field. Managing this new learning environment is the challenge for these companies.” (p. 1)

When writing about research involving learning, our natural inclination is to associate the significance to the educational community. However, the potential of distributed CLCs is valued equivalently in industry and government, as noted above.

1.3 Objectives of the Research

The objectives of this research are:

1. Understand how technology is enabling Collaborative Learning Communities,
2. Identify the types of issues and problems that may arise in the context of technology enabled Collaborative Learning Communities,
3. Identify how those problems are being solved in practice using ICT,
4. Examine the potential of advanced ICT in enhancing learning in distributed CLCs.

These objectives are designed to help solve the problem by adding understanding to the body of knowledge on which the designers of ICT enabled CLCs can make informed decisions about implementation and support to achieve learning objectives.

Technology for collaboration can be used both for research as well as for learning. For example, studies have found that virtual teams of learners who use collaborative

technologies to establish group identity and trust, to develop routines for collaboration, and to engage in deeper communication with one another are most likely to succeed in building an effective online learning community (DeSanctis, Wright & Jiang, 2001). The establishment of “common ground” has also been identified as required for effective distance work (Olson & Olson, 2001a). Common ground refers to shared knowledge, experiences, and understandings. Establishing common ground is one key to establishing an online learning community.

Social sciences are concerned with phenomena whose meanings are not commonly understood, and therefore social science seeks to create shared understanding and significance. In order for social scientists to engage in the negotiation of meaning in our globalized environment they need to use collaborative technologies in a distributed environment. In many situations a dialog is needed to come to a joint or common understanding: what Weick calls a “collective mind” (Weick & Roberts, 1993). This idea of arriving at a joint understanding or collective mind through collaboration can be applied to learning systems specifications (Crowston & Kammerer, 1998). The Information Systems structured analysis specifications known as Formal Specification Methodology (Fraser, Kumar & Vaishnavi, 1994) can take a solo text based approach, as long as the social scientists know exactly what they want. Then, formal (mathematical) specifications are possible, but when they do not know what they want, there must be intense dialog between the user and the analyst. The focus here is primarily on collaborative learning in the social sciences where it is a question of negotiating meaning.

1.4 Research Questions

The research questions to be addressed in this research are:

- a. How is technology enabling collaborative learning in learning communities as well as in the individuals that belong to those communities?
 - i. What is collaborative learning?
 - ii. What is the role of technology in enabling Collaborative Learning Communities?
- b. What are the issues and problems that may arise for communities or individuals in the context of technology enabled collaborative learning?
 - i. Why do these issues or problems occur?
 - ii. How are those problems being solved in practice?
- c. How and why can advanced ICT contribute to enhancing learning in distributed Collaborative Learning Communities?

Through the exploration of these questions the research will allow us to acquire a comprehensive understanding of the role of ICT in globally distributed Collaborative Learning Communities. Advances in ICT are cutting edge, with new developments rapidly becoming available. Instances of their actual use for collaborative learning are limited to demonstration projects. The data collected herein is concerned with the desirability of employing the advances rather than the actual employment in a production environment.

Through the use of a case study of the Fielding Graduate University (<http://www.fielding.edu>), founded in 1974, to offer distributed graduate education, this work seeks to theorize what social and technological elements contribute to enhancing Collaborative Learning Community objectives. Fielding is a Community of Practice where the practice is learning and knowledge creation. There are two types of bridging technologies used at Fielding to support intense collaboration. One is a cyclical schedule of physical meetings which equate to the technologies needed for moving people. The other the use of ICT-based community based forum software which we can equate to moving bits (Kumar, van Fenema, & Von Glinow, 2005).

This research is interested in understanding how institutions decide to promote a distributed Collaborative Learning Community, and what different types of learning community formations can be employed. By using traditional methods of observation, description and explanation to understand how Collaborative Learning Communities work, the research entertains the promise of improvement through the application of advanced ICT to the CLC environment. The purpose of the research is specifically to discover if advances in ICT create a facilitating catalyst in the success of establishing and sustaining distributed Collaborative Learning Communities to improve the capabilities of the stakeholders, including ICT researchers and collaboration facilitators.

1.4.1 Research Approach

In seeking to understand the phenomenon of ICT enabled distributed collaborative learning, we will do three things. First, we will review the current literature of collaborative learning and distributed communities. This review of the literature is essential to understand the current knowledge base in order to identify more clearly the gaps. This research is also concerned with clearly defining the concepts that form the basis of our theoretical lens into the empirical study. Second, we will examine theories that will help us build a basis for understanding the phenomenon of ICT enabled distributed collaborative learning in a distributed manner.

Next, based on a literature and theory review, in Chapter 4 we provide a theoretical lens to study this phenomenon empirically in a case study setting. A detailed discussion of the choice and justification for the single case study of the Fielding Graduate University is provided in Chapter 5, Research Methodology, Section 5.3. Chapter 6 describes the Fielding case study in detail. Briefly here, Fielding offers a unique example of both the phenomenon and context of technology enabled distributed graduate education, which lends itself to our deliberate interest in covering contextual conditions. In Chapter 7 the case study empiricism allows us to address all of the technical characteristics, including data collection and data analysis strategies, derived from experience and observation of the phenomenon. Chapter 8 provides conclusions of the case study analysis applied to broader areas of interest, including science learning, industry, and government concerns, through a generalized theory of ICT enabled distributed Collaborative Learning Communities.

1.5 Relevance and Potential Contributions

This section discusses the relevance and potential contributions from a stakeholder perspective

1.5.1 Relevance of the Research from the Stakeholder Perspective

There are multiple stakeholders involved in the outcomes of this research and therefore we are going to discuss this research from various stakeholder perspectives, including the student learner, faculty and administration, and academic researchers that both study and advance the phenomenon.

We will look at administrators and the faculty practitioners collectively, as together they must design technology enabled Collaborative Learning Communities in order to deliver an environment of learning. The faculty practitioners also use the technology, and therefore through use can experience its potential and shortcomings. The case study research methodology and analysis will break the two stakeholder groups down further to identify their particular interests. Administrators and faculty will benefit from this research because it will help them design better collaborative learning environments. The interest in the movement toward the CLC knowledge sharing and creation model is grounded in practical as well as theoretical considerations. Educational institutions not only face budgetary constraints for curriculum innovations but also find it difficult to attract and retain students from disadvantaged sectors of society. As new technologies and outreach efforts evolve, educators are required to constantly update their research and technical competencies.

The students are the beneficiaries of collaborative learning and they join the community of practitioners because they are learning collaboratively. This helps the students because: 1) they can take advantage of the better designed collaborative learning environment, and 2) as they understand how the CLC environment works they can use it more effectively. This contributes knowledge towards their understanding of the phenomenon of technology enabled CLCs, which they can then apply as practitioners in their chosen endeavors.

Finally, the fourth stakeholder group is the academic research community that is studying the phenomenon, this includes technologists and social scientists, as well as government and industrial backers for the research. This method of learning is now recognized as essential to attract and retain a qualified workforce in the social sciences (NSF, 2003). Advanced cyber-infrastructure and technology in scientific equipment production, such as observatories, accelerators, and discipline specific computational grids, have resulted in an avalanche of data that must be analyzed to create new knowledge (Hart & Estrin, 1990), hence leading to a demand for an increased highly educated collaborative workforce. While there are new Collaborative Learning Communities being formed and supported² at the time of writing, the results will take several years before they can be

² www.chepreo.org, www.ultralight.caltech.edu, www.ivdgl.org

reported. It is in the area of the social sciences that we can find an appropriate case study due to the many years of success experienced in matriculating scholar practitioner PhDs in Psychology and HOD through almost completely virtual collaborative learning programs.

1.5.2 Anticipated Contributions and Implications

It is anticipated that this research study will make a contribution to understanding the benefits and drawbacks of ICT mediated Collaborative Learning Communities populated by faculty, students, administrators and researchers separated by distance. The research questions stated above aim to address the problems raised from a socially collaborative as well as a technically focused perspective for the development and deployment of a distributed collaborative virtual learning environment. For example, one such problem to be addressed is the “open door.” While the phenomenon implies the need for a virtual environment that is online all the time replicating some of the social advantages of collocation, individuals must figure out how do you “close the office or classroom door?” While one might be tempted to address all manner of learning in all disciplines and at all levels from Kindergarten through twelfth grades (K-12), undergraduate, graduate, and continuing education, such a broad scope is unmanageable in a single dissertation. Hence, this study concentrates on PhD graduate students and the challenges and rewards of their distributed collaborative learning environment. From the researcher practitioner standpoint an interest exists in relating the scholar practitioner model to the demands of globally distributed collaborative science learning and research.

1.6 Situating the Researcher in the Study

One of the dangers in an Interpretivist study is that researchers’ biases may unduly color their interpretations. While the influence of the bias cannot be avoided, if we recognize this up front then we are likely to make attempts to avoid this in our analysis. Therefore, in Appendix A a detailed discussion of my background and beliefs as they relate to this study are provided. At this point it is sufficient to say that as a researcher I have a strong belief in the advantages of advanced technical solutions such as: broadband networks, high definition video conferencing, large document sharing, immersive collaborative technologies, such as the Access Grid³, and collaborative software environments.

³ <http://www.accessgrid.org/>

2.0 Literature Review

In Chapter 1 we defined the research questions. The questions are repeated here to provide a context for the decisions about which literature is needed to help examine the answers to these questions.

- a. How is technology enabling collaborative learning in learning communities as well as in the individuals that belong to those communities?
 - i. What is collaborative learning?
 - ii. What is the role of technology in enabling Collaborative Learning Communities?
- b. What are the issues and problems that may arise for communities or individuals in the context of technology enabled collaborative learning?
 - i. Why do these issues or problems occur?
 - ii. How are those problems being solved in practice?
- c. How and why can advanced ICT contribute to enhancing learning in distributed Collaborative Learning Communities?

These questions guide our choices in the selection of the literature to be examined to support our research. Chapters 2 and 3 examine two types of literature: literature about the phenomenon of interest, i.e. Collaborative Learning Communities (Chapter 2); and a review of the theories that can help inform research in this phenomenon (Chapter 3). Together these two chapters provide a connection between the research questions and decisions about the type of literature to review, as well as the theories that further our understanding of the concepts that must be applied to help answer these concerns.

There is a solid body of work to rely on in the area of Communities of Practice in general and Collaborative Learning Communities in particular. While the literature about Communities of Practice is pivotal in this study, the literature on creating and sustaining Collaborative Learning Communities enabled by ICT has only a brief history. This shortcoming hence provides the focus of the original research attempted herein, aiming to contribute to the Management Information Systems (MIS), Education, and Technology research communities. Section 2.1 of the literature review describes the nature of Communities of Practice. Collaborative Learning Communities are considered as a subset of communities of practice. Through this literature we explore the phenomenon of people learning together and the ways in which they interact within a learning community. Additional analysis of theories that are helpful in understanding more about this phenomenon is presented later in Chapter 3, and includes a Social Theory of Learning which serves to further enlighten the discussion.

Next, as our interest is in distributed Collaborative Learning Communities, in Section 2.2 we describe the current literature on geographical distribution and polycontextuality. Communities of Practice literature is primarily based on research with collocated communities where the members of the community are in physical proximity. In

Wenger, McDermott and Snyder (2002) the challenge of distributed communities with respect to problems of distance is discussed. While there can be tremendous value in establishing a globally distributed Community of Practice in a competitive business setting, Wenger et al. also recognize daunting obstacles such as, “how to maintain informality and build trust across time zones and distance; how to share ideas across different organizational units; and how to honor different national and organizational cultures.” (p. 84). All of these concerns are reviewed in depth in Section 2.2. Our research primarily focuses on geographically distributed communities. Therefore, we import the concept of distribution from the literature on globally distributed work and on polycontextuality that arises due to the fact that geographically distributed members of the community may reside in and work from multiple contexts.

In section 2.3 we examine the literature on the role of ICT in geographically distributed Collaborative Learning Communities. While ICT can support collocated communities, the gaps or distances that arise due to distribution make the bridging role of ICT crucial. However, as this is an emerging area there is only limited work available that explains the role of technology in learning communities. Section 2.3 is concerned with the Technologies in Collaborative Learning and will look at the work of Huysman, Wulf, and others who are part of the Computer Supported Collaborative Work (CSCW) research community. This section will begin by performing a broad survey of the literature about Technology in Learning Communities in Section 2.3.1, and about CSCW in Section 2.3.2. Then we will delve specifically into the concept of Media Richness in Section 2.3.3, concluding with essential literature about online learning. This relates learning to technology primarily in a solo learning context, but serves as a basis for understanding how people work online.

Section 2.4 is concerned with a literature review on Evaluation as it pertains to qualitative research methodology. It provides some input for Chapter 4 to develop the theoretical lens for understanding the problems of distributed international Collaborative Learning Communities and as a warrant for the way in which we report these problems. We see this reflected in Chapters 5 and 7 that outline the research approach and then systematically analyze data that was collected through the Fielding case study to help answer the question: *What are the issues and problems that may arise in the context of technology enabled collaborative learning?* Guba and Lincoln (1989) are the primary focus of the literature review in this section, and then we look at a number of companion works in the Sage series in order to survey the field.

Chapter 2 concludes with a summary of the literature reviewed. This summary, along with the summary of theories that concludes Chapter 3, is the input into the theoretical lens and concept map in Chapter 4. Taken collectively the literature and theory review that follows will significantly extend the necessary research to answer the above questions concerning the phenomenon of Collaborative Learning Communities distributed geographically and enabled by technology.

2.1 Literature about Communities of Practice and Related Ideas

Literature about Communities of Practice provides the underlying basis for exploring the research question: *How does IT enable Collaborative Learning Communities?* It is relevant to this work because it develops the core concepts of collaborating in a community for a specific purpose or goal. While discourse on communities stems back to the beginning of social thought, the Communities of Practice discourse is an emerging concept pioneered by Wenger, Lave, and others, as recently as 1991 (Lave & Wenger, 1991). The introduction to Wenger's more recent work (Wenger, 1998) takes the form of an anecdote showing the process of collaboration between Wenger and Lave to create new knowledge, which is the root of the Communities of Practice literature in general and specifically relates to the literature of Collaborative Learning Communities:

A while ago, I asked my colleague Jean Lave in exactly which publication she had first introduced the term *Community of Practice*. We had used the term in a book we wrote together, but I wanted to give her proper credit for originating it. To my surprise, she replied: "I thought you were the one who came up with it." Now, whatever she says, I still believe that she was the one. But perhaps there are more important points to make about this anecdote that trying to settle the issue

The first point is about Jean. Her response is typical of the kind of intellectual generosity that makes her such an outstanding teacher and colleague.

The second point is about this book. Regardless of who actually coined the phrase that became its title, it was our collaboration that brought the topic into focus and initiated the inquiry." (xiii)

The following paragraph recognizes the importance of shared acknowledgement when communities of collaborators work together to develop new knowledge. Wenger emphasizes that it is difficult to separate out individual contributions, and yet it is both simple and necessary to express appreciation to the individuals that contribute to collaboration.

The third point is about communities and acknowledgements. Dissecting a creation in order to assign individual credit can easily become counterproductive. To celebrate our efforts and our achievements, we need not become blind to the social fabric that makes them possible. We need not deny each other the recognition of our mutual interdependence. At the very least, we can appreciate those close connections, conversations, and communities in which our participation is obvious, and this is what acknowledgments are about. But this recognition must be an opening, not a closing. If, as complexity theory would have it, a butterfly flapping its wings can trigger monsoons, then how are we to know which

butterflies and which flappings (sic) of wings to include in the reach of our recognition, and which to exclude? (Lave & Wenger, 1998, pp. xiii-xiv)

The above quote, not only discusses the origins of the notion of Communities of Practice, but also provides a guiding synopsis of the characteristics of successful participation. The following table, *Concept Relationships of Collaborative Learning Communities*, provides a literature review for the concepts explored in the map in Chapter 4. The table distills the characteristics of Communities of Practice from the literature and summarizes the various views by either presenting an integrated description of each characteristic or reporting the predominant view. These concept characteristics include: Practice, Processes, Structures, Membership Criteria, History, Resources, Templates, Community Descriptions, Physical Description, Roles, Collaborative Knowledge Creation, and Value. For example, Wenger draws on his professional expertise and role at the Institute for Research on Learning to describe various examples of Communities of Practice which were formed for the primary goals of both work and learning. There are several factors, such as technology, social, and learning structures, accelerating the trend by educators to draw on a Social Theory of Learning (Lave & Wenger, 1991), which provides one of the cornerstones of this research.

Table 1 | Concept Relationships of Collaborative Learning Communities

Concepts (Characteristics)	Concept Relationships of Collaborative Learning Communities	Concept Summary
Practice:	<p>The <i>practice</i> in a Community of Practice (CoP) such as a Collaborative Learning Community (CLC), is a set of frameworks, ideas, tools, information, styles, language, stories, and documents that community members share. The domain of mutual engagement is the topic(s) the community focuses on. The practice is the specific knowledge the community develops, shares, and maintains. Through its practice of applying concepts, symbols, and analytic methods the community operates as a living curriculum where the members explore both the existing body of knowledge and the latest advances in the field. A practice is denoted by domain specific processes, common approaches and shared standards that ground its memberships' actions, communications, problem solving, performance and accountability (Wenger et al., 2002). One might say that the practice prescribes a mutually agreed upon protocol for these value added functions, where the collaborative membership can benefit in their individual and collective practices.</p> <p>Of interest to this study is what defines effective or successful practice and such guidelines are explored in Wenger et al. (2002). Measures of success presuppose a community's shared understanding of its domain codification and appropriate actions associated to these codes of behavior. Wenger et al. assert that successful practice development relies on a balance between joint activities and the production of things like documentation and artifacts that can carry forward the history of the practice.</p>	<p>The initial research framework consists of an integration of the various views or the predominant view of the concept characteristics that Communities of Practice (CoPs) form to sustain the phenomenon of a Collaborative Learning Community.</p> <p>Practice is a set of socially defined ways of doing things and ways of knowing within the specific domain of interest.</p> <p>Effective practice can be measured along a continuum of evolution within the community of interest in terms of how it integrates into the members work, how it adds value to the organization of knowledge useful to its practitioners and how the mode of communicating and capturing knowledge corresponds to the demands of actual use.</p> <p>The concept of practice in the term <i>Communities of Practice (CoP)</i> is central to defining the subset of interest to this work, Collaborative Learning Communities.</p> <p>The remainder of this table will look at the specific characteristics and concepts associated with these ideas of practice, process, resources, membership, mutual engagement, history and artifacts, knowledge creation and sharing, within the CLC framework.</p>
Processes: Process Design	<p>The process of learning is not equivalent to a production process in a business environment. Lave and Wenger observe that in fact in business, apprentices begin their learning process at the end of the production chain doing simple finishing jobs. In the learning process for academics (and this can be applied to business) we start with the big picture and then drill down into the smaller processes that make up the knowledge area.</p> <p>Learning cannot be designed because it belongs to the realm of experience. With or without a design, infrastructures to foster learning is a high priority (Wenger, 1998).</p> <p>Learning is achieved using a role model, or modeling approach, which enables the learner to internalize the meaning of the knowledge sharing by connecting it to their own past experience and future action in the world. The learning apprenticeship model explains that, "There are rich relations among community members of all sorts, their activities and artifacts. All are implicated in processes of increasing participation and knowledge ability. Furthermore, to achieve success in learning it is necessary to learn</p>	<p>Knowledge sharing in a collaborative learning community can be successfully achieved using a role model (a.k.a. apprenticeship) approach.</p> <p>A design for learning applies to all level of organizations from schools and universities, to public and private sector corporations, to states and nations. The world is fast becoming one large organization, which is the object of design. The conceptual framework of CLCs, which incorporates symbiotic learning and practice, allows those of us involved in this design to contribute to the architecture of the future.</p> <p>Legitimate peripheral participation in the community</p>

Organizational Design	<p>processes out of sequence of the system because first the peripheral, less intense, less complex, and less vital tasks must be mastered before the central aspects of the practice knowledge sharing can be achieved.” (Wenger, 1998; Lave & Wenger, 1991).</p> <p>Organizational design can be optimized for learning and innovation by focusing on all four aspects of design as described by Wenger and including: 1) Negotiation of meaning, 2) Preservation and creation of knowledge, 3) Spreading of information, and, 4) Home for identities, or valuing individuals specifically as part of the community by understanding and fostering an environment that understand the work of negotiating identities steeped in participation (Wenger, 1998).</p> <p>A comprehensive study of CLCs must consider the community itself as a loosely tied organizational structure that is an old sociological concept that has been adopted by business organizations and management researchers as a way to insert informal, organizational design into what may be construed as overly formalized structures and rigid boundaries (Huysman & van Baaten, 2001).</p> <p>Collaborative Learning Communities are a type of organization and they are subject to organizational imagination. Because organizations have intangible process characteristics in the form of connections within and between other organizations, Wenger calls this type of connection a constellation. Imagination plays an important role in bringing the global into the local, and making learning an aspect of organizational participation (Lave & Wenger, 1991; Wenger, 1998).</p> <p>Wenger describes constellations of practice as too far removed, broad, diverse, or diffuse from the scope of engagement of participants to function effectively as single communities. Constellations are analogous to external ties in that they describe a grouping of stellar objects in a configuration that may not be particularly physically or logically close to each other, of the same kind, or even the same size (Wenger, 1998).</p>	<p>allows the learner to internalize the simpler concepts of the knowledge area before attempting to understand the more complex central concepts.</p> <p>Communities of Practice are the social fabric of learning. Removing learning from the community, such as organizational training programs, strips the effectiveness of the endeavor. Learning must be collocated with the Community of Practice and as such contributes to both the newcomers’ knowledge base and the old timers’ awareness. This tension is optimal for community evolution.</p> <p>The concept of imagination in forming and sustaining distributed Communities of Practice applies to CLCs. Imagination is crucial for collaborative learning as a vehicle to integrate local and global affiliation, allegiance and cultural foundations within the community.</p> <p>The concept of external ties can be explored within the CoP processes framework as a loose connection to other components of diverse CoPs. These share any or all of the following: historical roots, related enterprises, institutional ties, similar conditions, members in common, shared artifacts, geographical proximity or interaction, overlapping discourse styles, or competition for the same resources.</p> <p>Learning in a collaborative community can be viewed as a process using Wenger’s theoretical lens of a Social Theory of Learning.</p> <p>A CoP’s way of practicing their pursuit of an enterprise of mutual interest informs the process that the community uses to learn together.</p> <p>Distributed CLCs benefit by a start up methodology that takes into account the social characteristics of learning such as knowledge sharing, level setting, and community building including concepts of common ground and fostering trust.</p> <p>CSCL techniques that enhance learning in a large collocated classroom can be translated into distributed CLC enhancements.</p>
External Ties		
Learning Processes Common Ground Collective Mind Overlaps CSCL & ICT (see Technology, below)	<p>The components of Wenger’s Social Theory of Learning can be viewed in terms of a process which is comprised of four components of learning, these include—Meaning, Practice, Community, and Identity. This Social Theory of Learning is discussed fully in Section 2.1.4 (Wenger, 1998).</p> <p>Over time, collective learning results in practices that reflect both the pursuit of the enterprise of shared interest as well as the social relations that evolve around that enterprise. These practices are the shared property of the community involved in the ongoing pursuit of the enterprise and therefore these communities are called <i>Communities of Practice</i> (Wenger, 1998).</p> <p>In many situations a dialog is needed to come to a joint or common understanding: what Weick calls a “collective mind” (Weick & Roberts, 1993). This idea of arriving at a joint understanding or collective mind through collaboration can be applied to learning systems specifications (Crowston & Kammerer, 1998). When learners engage in knowledge creation activities, there must be intense dialog between the participants (Fraser, Kumar & Vaishnavi, 1994).</p> <p>There are success criteria for online collaborative distance learning that begin with employing a methodology for creating a sense of community among course participants. This is done by establishing initial communication protocols (e.g. email list), face-to-face initial meeting focused on development of</p>	

<p>Initial impact of CSCL on faculty is substantial but can be managed through focus on technology support and designing effective collaborative learning activities that use ICT.</p> <p>CSC—Teams' approach to learning is an important component of international global workforce preparation. There are a number of overlaps between the CSCL and CLC models, and lessons learned can be shared as both movements continue to evolve.</p>	<p>knowledge and skills for participation as well as community building, and inclusion of community building exercises in initial course activities online (Renzi & Klobas, 2002). The initial employment of collocated CSCL techniques to enhance the quality of teaching and learning can be useful in forming distributed CLCs. Components that translate include shared electronic repositories for project materials and space to record and exchange electronic documents or reflections on the project activity. Initial impact of CSCL on teaching staff is substantial, but there are practical techniques that can reduce post-implementation impact by managing communication among students and between students and teachers. Other success factors include strong cooperation among all stakeholders and flexibility in many aspects of course operation. Logistical, technical, and educational cooperation is needed between the stakeholders (Renzi & Klobas, 2000).</p>	<p>In order to support the use of Computer Supported Collaborative Team (CSC—Team) approaches, the learning process for these distributed teams has yielded case study and evaluation literature that can be applied to the CLC environment (Klobas & Haddow, 2000). The CSC—Teams literature developed out of the recurrent theme in organizational design in the 1990s that argues that using teams to achieve greater levels of performance in tasks is indispensable (Katzbach & Smith, 1993). Additionally, the role of CSCW using ICT supporting the distributed team model has been further augmented in the late 1990s and into the 21st century, with the expansion of global telecommunication networks, all of which lead us to the ICT support for CLC agendas for workforce development. Klobas (Klobas & Haddow, 2000) evaluated the internationally dispersed CSC—team challenges of communicating detail and nuances in written text without the assistance of gestures and other non-verbal cues. They concluded that students respond well to CSCL, and although the techniques for incorporating CSCL into coursework have not been perfected, it is effective. This work relies on "Learning to Work in Distributed Global Teams" (Knoll & Jarvenpaa, 1995), which involved 19 teams at 13 internationally distributed universities in 9 different countries. The current CSCL and CLC models draw lessons learned in collaboration, socialization, and global communication skills detailed in this study, while participants were engaged in accomplishing difficult work.</p>
<p>Protocols for Sharing Data</p>	<p>Data sharing is not specifically discussed in much of the literature on CoPs and CLCs (Wenger, 1998; Lave & Wenger, 1991). There is an explicit reference to the production of the CoP as being one of the two critical success factors of a practice in terms of things such as documentation and tools to support the ongoing interplay of codification and interactions (Wenger et al., 2002).</p>	<p>Legitimate peripheral participation (LPP) within a CLC is not a simple participation structure in which an apprentice occupies a particular role at the edge of a larger process. It is rather an interactive process in which the apprentice engages by simultaneously performing in <i>several roles</i>—status subordinate, learning practitioner, sole responsible agent in minor parts of the performance, aspiring expert, and so forth—each implying a different sort of responsibility, a different set of role relations, and a different interactive involvement. One would expect that the role configurations in which LPP takes place would differ widely through time and space, and even over the course of a single apprenticeship, yet the interactive <i>prise de conscience</i>, the way the learner places himself in relation to the whole, would remain consistent (Hanks, 1991, pp. 23-4)(Lave & Wenger, 1991; Wenger, 1998).</p>
<p>Structures</p>	<p>Data sharing occurs through the community's documentation and tools.</p>	<p>A theory of social practice emphasizes the relational interdependency of agent and world, activity, meaning, cognition, learning, and knowing. It emphasizes the inherently socially negotiated character of meaning and the interested, concerned character of the thought and action of persons in activity. This view also claims that learning, thinking, and knowing are relations among people in activity in, with, and arising from the socially and culturally structured world (Lave & Wenger, 1991; Wenger, 1998).</p>
<p>Social Structure</p>	<p>The concept of Legitimate Peripheral Participation (LPP) is a structure by which new participants are able to join and contribute to the CLC. Apprentices move from a solo learning paradigm to a collaborative learning community.</p>	<p>Teaching is a prescription about proper practice in school limits and participation in that practice.</p>
<p>Pedagogical</p>	<p>Social structure explained through a theory of social practice in a CLC that describes the interdependence between the learner and all the other members of the CLC engaged in actively negotiating meaning, resulting in the collaborative sharing and creation of knowledge.</p>	<p>CLCs use a learning curriculum as opposed to a teaching</p>

<p>Structure— Learning Curriculum Versus a Teaching Curriculum</p>	<p>Participation is a legitimate source of learning opportunity that does not complement the goal of prescribed requirement specifications that teaching engenders. Teaching, rather than a CLC environment, results in a practice different from that intended (Bourdieu, 1977). The teaching pedagogical structure moves the CLC away from the LPP structure; however, LPP is still the core of the learning that takes place. We can therefore distinguish between a <i>learning curriculum</i> and a <i>teaching curriculum</i>. A learning curriculum consists of situated opportunities, including exemplars, for the improvisational development of new practice (Lave, 1989). A learning curriculum uses learning resources in everyday practice, viewed from the perspective of learners. A teaching curriculum is constructed for newcomers. A learning curriculum is essentially situated. It is not something that can be considered in isolation from the CLC, manipulated in arbitrary didactic terms, or analyzed apart from the social relations that shape LPP. A learning curriculum is thus characteristic of a community (Lave & Wenger, 1991; Wenger, 1998).</p>	<p>curriculum.</p>
<p>Technology Supporting Structures</p>	<p>Any complex system of work and learning has roots in and interdependencies across its history, technology, developing work activity, careers, and the relations between newcomers and old-timers, and among co-workers and practitioners (Lave & Wenger, 1991). Participation involving technology is especially significant because the artifacts used within a cultural practice carry a substantial portion of that practice's heritage. Understanding the technology of a CLC means more than learning to use tools; it is a way to connect with the history of the practice and to participate more directly in its cultural life⁴. By being a member of a CLC, the inner workings of its technological artifacts are allowed to be transparent to the learner. The "black box" can become a "glass box." The significance of an artifact to a CoP involves more than the function of the technology. ICT is not just a feature of an artifact. ICT is a process that involves specific forms of participation, in which the technology fulfills a mediating function (Lave & Wenger, 1991).</p>	<p>The ICT used by a CLC carries historical cohesion between the CLC members in all stages of their participation. Furthermore, the functional workings of the technology artifacts are made transparent to the CLC members.</p>
<p>ICT; CSCW & CSCL</p>	<p>The role of technology in supporting Collaborative Learning Communities is the mediating factor between the local and the global. Technology advances in the areas of transportation, telecommunications and networking, automation and organizational techniques, systematic record keeping and access to information all provide a means for pushing the limits of transition from local communities to global societies. Technological developments do not translate into straight expansion. They involve trade-offs in that the refication process that ICT can provide allows us to perceive much more complex patterns at the sacrifice of detail (the stories) that make up the data that is refired. Examples include statistical and financial analysis on distilled numbers, whether on divorce statistics or economic trends. Technology enabled globalization of CoPs has the potential to strip away the very practice and negotiation of meaning that goes into the analysis necessary to reduce the data to feed into more complex models. CoPs, while a critical locus of learning are not intrinsically benevolent. They have the potential to propagate negative practice, such as racism, sexism, prejudice, and other abuses. Furthermore, the discourse, often enabled by technology, that ties CoPs to larger organizations, does not replace practice. (Wenger, 1998).</p> <p>ICT application has become a condition for organizational learning in project-related work. ICT affects the structure of organizational learning as a social phenomenon as well as an interrelated social and technical phenomenon. All contexts for learning are constructed in an intertwined network of social relationships and technical artifacts (Broendsted, 2001).</p>	<p>CoPs are a fact of social life providing an important venue for negotiation of meaning, learning, and identity development. ICT is an enabling factor in the complex interactions between the local and the global that must be carefully considered in the research into CLCs.</p>
		<p>The theme of viewing ICT's impact on CLCs in terms of social and technical relationships bears directly on this research, and is explored from many different aspects of literature review and theory.</p>

⁴ Underline indicates overlap with the concept of history discussed below

	<p>The development of the CSCW and CSCL fields of study inform the current role of ICT for collaborative learning communities. It is impossible to study CLCs today without taking into account the infrastructure for CSCW as well as the consideration of how this infrastructure is both an enabler and inhibitor of collaboration. Focused efforts must be made to employ technology to increase the interactions between CLC distributed community members. If pervasive synchronous communication methods, such as video conferencing, cannot be employed, alternatives, such as distributing video clips to increase socializing, can help bridge the gap. For CSCW and CSCL endeavors allow time to learn how to use the technology, to develop appropriate communication protocols and for team members to become familiar with one another (Biblar, Kubar, & Klobas, 1999).</p>	<p>Collaboration at a distance is saved by face-to-face meetings where goal explanations and problem solving reduce the impact of obstacles.</p> <p>Augmenting collaborative work at a distance by employing ICT enabled strategies will have a positive effect on group goal attainment and satisfaction with distributed learning and work.</p>
<p>Membership Criteria Sub-Concept of Organizing Processes Identity Formation</p>	<p>Most CoPs that we encounter in everyday life do not have a name and do not issue membership cards. People participate in multiple CoPs simultaneously. Nevertheless, we can easily identify who belongs to the CoP and why, as well as who are the core members and who are the peripheral members. Theories of social practice and identity form a horizontal axis through a Social Theory of Learning, where social practice addresses the production and reproduction of specific ways of engaging with the world. Theories of identity are concerned with social formation, where markers of membership such as rites of passage, social categories and demographics, such as gender, class, ethnicity, age, and other forms of categorization, are used to attempt to understand the person. We can apply these theories specifically in the CLC environment as it forms the individual through complex relations of mutual constitution between individuals and groups. Membership is a matter of mutual engagement. The level of engagement relates to the concept of LPP, where membership can range from the periphery to the core of the CoP activities (Wenger, 1998).</p> <p>Participation in social practice, such as a CLC, puts the focus on the person as a member, defined as a person-in-the-world, of a sociocultural community. Learning within the CLC is an evolving form of membership, and not just a condition for membership as a legitimate peripheral participant. The concept of identity comes into play through social membership in a CLC. Identities are comprised of long-term, living relations between persons and their place and participation in Communities of Practice. Additionally, membership changes over time, in varying degrees of internalization and externalization by the individual members of the CoP. Membership is viewed as intertwined with the concept of LPP, as it refers to the development of knowledgeably skilled identities in practice, and to the reproduction and transformation of Communities of Practice. CoPs depend on membership to exist, these include CLCs, which are a subset. Specifically membership includes characteristic biographies/trajectories, relationships, and practices. Case study examples of membership criteria vary widely, from no membership criteria per se to formal sponsorship at the other end of the scale. For example, membership may come about through family and community. Members have different interests, make diverse contributions to activity, and hold varied viewpoints (Lave & Wenger, 1991).</p> <p>CLCs can be viewed through a historical theory of social practice lens, which focuses on processes of learning (Lave & Wenger, 1991). The historical theory of social practice relies on several classical dualist oppositions that in many contexts are treated as synonymous, or nearly so: abstract—concrete; general—particular; theory about the world, and the world so described. Theory is assumed to be general and abstract, the world, concrete and particular (Lave & Wenger, 1991). In a theory of practice, upon which CLCs rely, cognition and communication in, and with, the social world occur within the historical development of the CLC through its ongoing activities. One way to think of learning is as the historical production, transformation, and change of people.</p>	<p>CoPs occur as an integral part of daily life, yet the CLC, a subset of the CoP concept, does offer a more focused concept of membership through the sharing of mutual goals for engagement, as viewed through a Social Theory of Learning.</p> <p>CLCs depend on membership and each may define this membership on a scale of criteria from fully informal to fully formal. Membership is tied into the concepts of both the individual and the CLC's identity and the LPP. The role of members changes over time and can vary between more internal and external expression.</p>
<p>History Historical—Cultural Theory</p>	<p>The concept of history plays an important role in CLCs through the CLC's reproduction cycles and its</p>	<p>The historical theory of social practice, as applied to a CLC, focuses on the process of learning transforming the CLC members.</p>
<p>Historical</p>		<p>CLCs go through reproduction cycles that can be viewed</p>

Perspectives on Communities	attendant artifacts(Lave & Wenger, 1991; Wenger, 1998). There are physical, linguistic, and symbolic artifacts that both carry the CLC history and influence its social structures. From a historical perspective one can observe the developmental cycle(s) of a CLC with regard to its trajectory, benchmarks, blueprints, and careers (Staeck, 1989).	from a historical perspective through its artifacts, which carry both a utilitarian as well as a social history of the CLC, thus insuring both evolution and continuity between generations.
Resources	In a CLC, resources can be defined as means to learning and access to the community of learners. The concept of LPP is reflected as a resource of the CLC. The newcomer to the CLC is enabled as a community member and privileged to an opening into the CLC, providing a way of gaining access to resources for understanding. CLCs agree to structure resources for learning. As a peripheral participant becomes more involved in the CLC they can gain more control over the resources of that CLC. Mastery resides not in the master but in the organization of the Community of Practice of which the master is part. This is a decentralized view of power, where the community's learning resources and not its masters contain the pedagogical value of the CLC, but they are only accessible via the ongoing activities of that CLC. It is through participation that the learner has access to information and opportunities for deeper participation. As with the pedagogical contrast between a teaching and a learning curriculum, learning must be understood with respect to a practice as a whole, with its multiplicity of relations—both within the community and with the world at large (Lave & Wenger, 1991)	CLC resources can be viewed in terms of access to a learning curriculum that is interwoven into the activities of the community. The access begins as LPP and allows the learner to become more involved in the activities of the CLC, which in turn leads to more access to the learning resources of that CLC.
Templates Models Exemplars	The shared resources of a community are its repertoire and are an element of the community's history. In other words, resources can be defined in terms of the CoP's history of mutual engagement which creates shared points of reference for the CoP members, yet is ambiguous in that the collective history does not impose meaning. This notion of history influencing the resources of a CoP then ties back up to the coordination, communication, and design processes of the CoP. This inherent condition of ambiguity can be put to work to simulate an environment of mutual engagement so it should not be viewed as an obstacle, but an opportunity to negotiate meaning (Wenger, 1998).	CLCs mutual engagement over time is reflected as a historical resource on which to engage and build negotiated meaning.
Community Descriptions	The apprenticeship model is well documented to justify a theory of legitimate peripheral participation (Lave & Wenger, 1991). Distributed collaborative communities also represent single case studies, including copy-machine repair people and insurance underwriters (Wenger et al., 2002).	There is not one specific template which illustrates the Collaborative Learning Community.
Physical Description	Several single case study descriptions are offered for communities of midwives, tailors, quartermasters, butchers, and non-drinking alcoholics(Lave & Wenger, 1991).	CLCs are documented as single case studies. A community is not a single block, but communities within communities.
Roles	Each single case study offers discrete physical descriptions of the communities. Each of the described communities is in specific physical proximity (Lave & Wenger, 1991).	CLCs each have unique physical descriptions.
Role Models Leaders & Leadership	The roles of the actors in CLCs can be viewed on a continuum where increased access of learners to participating roles in expert performances allows them to acquire the knowledge base of the community. Lave and Wenger reject the view of understanding as something a person does in his or her head, ultimately involving the mental representations of individuals that occur through the acquisition of community structure. Role definition requires that we pay attention to linguistic action in the LPP setting as it provides a means for the actors (learners in a CLC) to engage in the community. Students of conversation have shown that a single party to an interaction may simultaneously fill several roles, and that under proper circumstances, a single role can be occupied by more than one interactant. In other words LPP influences how roles are occupied. It provides a way of engaging, but not a structure in which to engage. There is a close relationship between the roles of the actors in a CLC and the structure of the CLC (Lave & Wenger, 1991; Wenger, 1998).	The concept of roles within a CLC, like membership, occurs on a continuum of learner to expert. Within any given conversation an actor may occupy any one or a number of different roles in the exchange. This implies benefit to all members by virtue of any of them being capable of contributing to the CLC and of learning from others. Learners can be represented as apprentices and teachers as masters. As noted above in the discussion of membership and roles, this is a fluid designation within a

<p>CLC. CLC design, whether strongly hierarchical or relational will gain in knowledge creation proportional to the level of negotiated meaning permitted. The leadership role is one factor in this equation.</p>	<p>The role of leader can be replaced by "master" in a CoP (Lave & Wenger, 1991). Privileging certain perspectives and forms of knowledge, and marginalizing others, may simplify organizational alignment in a CLC, but they do so at the price of greater engagement and imagination(Wenger, 1998). Knowledge creation occurs at the membership interaction between competence and experience. Newcomers to a CLC achieve competence in the CoP by realigning their experience until it fits within that community regime. On the other hand, members with enough legitimacy in the CLC may assert their membership by attempting to change the community's regime to include their experience. They must negotiate its meaning with the CoP in various ways, such as inviting other members to participate in the experience. In fact the very basis for mutual engagement in the community may need to change to include the new knowledge elements in the resources of the community. In the process of changing the regime of competence, new knowledge is created (Wenger, 1998).</p>	<p>CLC. CLC design, whether strongly hierarchical or relational will gain in knowledge creation proportional to the level of negotiated meaning permitted. The leadership role is one factor in this equation.</p>
<p>Collaborative Knowledge Creation</p>	<p>CLCs typically begin because there is enough common ground among the potential members for them to feel connected and to see the value of their mutual engagement through sharing insights, stories, and techniques. The value at the early stages of community formation, what energizes people, is the realization that other people face similar problems, share a passion for the topic, have data, tools, and approaches (resources), and can contribute insights that foster a learning environment. "Wenger et al. note that, "A community is driven by the value members get from it, so people need to see how their passion will translate into something useful" (2002, p. 71). Furthermore, during the incubation or formation of a new CoP, building trust among the members is a function of showing value per time invested (Wenger et al., 2002).</p>	<p>The concept of learning as a transformation of knowing opens the way to knowledge creation in a community.</p>
<p>Value Common Ground Building Trust</p>	<p>CLCs typically begin because there is enough common ground among the potential members for them to feel connected and to see the value of their mutual engagement through sharing insights, stories, and techniques. The value at the early stages of community formation, what energizes people, is the realization that other people face similar problems, share a passion for the topic, have data, tools, and approaches (resources), and can contribute insights that foster a learning environment. "Wenger et al. note that, "A community is driven by the value members get from it, so people need to see how their passion will translate into something useful" (2002, p. 71). Furthermore, during the incubation or formation of a new CoP, building trust among the members is a function of showing value per time invested (Wenger et al., 2002).</p>	<p>There is an underlying theme in the literature of CLCs of mutual engagement (a.k.a. common ground), and benefit from membership within a CLC, that is a function of value attained for time invested.</p>

The table above provides a summary of the concepts, as both individual and related notions, that make up the CLC phenomenon. This table is presented to summarize these concepts, culled from a number of sources in order to determine the initial research framework.

As we review the CLC literature, we see that Lave and Wenger have not really fully explored the role of ICT in Collaborative Learning Communities. Thus, in order to research ICT enabled international Collaborative Learning Communities it is essential to be aware of the Communities and Technologies (C&T) international forum that was initiated via a conference in Amsterdam in 2003. This forum was established as a community for researchers examining the relationship between communities and technology. It includes researchers from the fields of applied computer science, Computer Supported Collaborative Work, and Learning (CSCW and CSCL), Artificial Intelligence, Information Retrieval, Human Computer Interaction, Information Systems, and Social Sciences, including Cultural Anthropology, Communication Science, Economics, Management and Organization Science, Psychology, Political Science, and Sociology (Huysman, Wenger & Wulf, 2003).

The literature from the C&T area is reviewed in greater detail in section 2.3.1. The C&T conference series is beginning to make inroads into the influence of technologies on communities. There is a generalized approach to a number of different domain specific deployments of the Communities of Practice model, of which only a limited number of articles consider specifically the role of ICT in Collaborative Learning Communities. There remains a transitional research space concerned with how the use of advanced information and communication technologies is likely to change the characteristics and concepts associated with CLCs. This gap in the literature happens to compliment our interest in the research question: *How does ICT enable distributed CLCs?* Therefore, this thesis aims to contribute to the body of knowledge in this area.

2.1.1 Key Issues of Distributed Communities

While there are many valuable aspects of globally distributed communities, they have special challenges not found in physically collocated Communities of Practice. Wenger et al. (2002) define a distributed community as, “any Community of Practice that cannot rely on face-to-face meetings and interactions as its primary vehicle for connecting members.” (p.115) Wenger et al. go on to explain that distributed is a preferred term over “virtual” or “online” because many communities do also meet face-to-face on occasion, although they do rely primarily on virtual ICT. Dede’s article (1996), although now nine years old, predicted some of the ICT advances that would come to enable Collaborative Learning Communities. Dede (1996) foresaw that:

The development of high performance computing and communications is creating new media, such as the World Wide Web and virtual realities. In turn, these new media enable new types of messages and experiences; for example, interpersonal interactions across network channels lead to the formation of virtual communities. (p. 1)

Dede predicted that an alternative to traditional instruction, namely distributed learning would result. He further predicted the creation of shared "learning-through-doing environments" that would be at the learner's disposal any time and anywhere. Much of what Dede predicted has come to pass, and we shall see that the any time / anywhere paradigm still continues to be a work in progress.

In 2005 there remain a number of obstacles (Wenger et al., 2002) to employing both technological and structural methods of building a distributed community so that it can maintain informality, build trust across time zones and distance, share ideas from within varied organizational structures, and bridge cultural differences. The benefits of tackling and overcoming these barriers and creating a structure are so that people can both share and create new knowledge about the area of interest that binds the community together. As we will see below, there are techniques, identified by Wenger et al. (2002) to overcome these obstacles.

2.1.1.1 Barriers: Distance, Time, Size, Affiliation, and Culture

Distance can be defined as both geographical and time zone separation. Both aspects make it more difficult for community members to connect with each other. Wenger et al. (2002) note that first of all the ICT available is not a substitute for face-to-face meeting, and secondly the separation of distance is more than just geography and time—it causes community members to feel more remote from one another. In fact they go so far as to comment, "Distance simply makes it more difficult to remember that the community exists." (p. 116). Because community members interacting via ICT are not as visible as they would be in a physically proximate meeting, they represent a less significant presence for their colleagues. If they do not exert themselves to contribute to the interaction by offering an opinion, posing a question or asking for help, the other members might not even notice they are connected. Furthermore teleconferences, videoconferences, web sites, and email lists do not offer the same opportunities for side conversations and informal networking. "Because of these barriers, it takes more intentional effort for members to consult the community for help, spontaneously share ideas, or network with other members" (Wenger et al., 2002, p. 117). In Section 2.2 on distributedness and polycontextuality, we will return to these issues through the review of additional literature and theory.

The size of a community whether physically proximate or distributed, impacts the ability of the members to know one another personally. Wenger et al. (2002) acknowledge that the size of the community does not directly correlate with it being distributed, but that distributed communities have the potential to include a very large membership. It is difficult to connect with hundreds, sometime thousands, of members, even in a collocated environment. Therefore, when trying to do so in an ICT mediated distributed community, size can be a very significant barrier.

The way in which Wenger et al. (2002) discuss affiliation has more to do with the collaborative distributed business environment than it does with collaborative learning. Nevertheless, affiliation must be reviewed and applied, because even in distributed

Collaborative Learning Communities, affiliation of the members can come to influence the way in which they participate in the community. First, let us look at what we mean by affiliation and then how that effects participation. Affiliations in the business sense can mean being attached to a work unit, a company, a country, and a culture of the membership. In the learning sense, affiliation of the learner can mean their practice (i.e. where they work), their location, whether another city, state, or country, and their cultural identities. Furthermore, whether in a business or a learning community, membership can be expected to have concerns with intellectual property produced by the community. An individual business unit or company would need to retain intellectual property rights to turn a profit, while a learner would need to “get credit,” in the form of a grade or acknowledgement from their institution in order to move forward in their individual educational goals. Wenger et al. (2002) suggest a solution employed by business communities that could translate into the Collaborative Learning Community environment. Rather than creating a complex ownership system the membership agrees to share only knowledge that can be disseminated to the other members, without adversely affecting their own individual interests (Wenger et al., 2002).

The issue of culture comes up frequently in any discussion of Communities of Practice, and we will return to culture again in Section 2.2, when reviewing notions of distributedness and polycontextuality. Culture must also be discussed here in terms of barriers to Communities of Practice, because any distributed community is likely to cross cultural lines (Wenger et al., 2002). As with our discussion of affiliation above, culture can include the organizational or professional cultures of the scholar practitioners engaged in the Collaborative Learning Community. As such, distributed communities face the challenge of integrating individual cultural norms. Furthermore, the more obvious cultural affiliations based on nationality, religion, and ethnicity may also color the way in which the members communicate with one another. Wenger et al. (2002) note that, “Cultural differences can easily lead to communication difficulties and to misinterpretation”. Additionally, language differences are known to be a basic barrier to communication even when all the members agree to speak a common language, because idiomatic usage may make the non-native speakers unable to grasp the nuances of the conversation. “Because computer-mediated conversations take place in writing, non-native speakers sometimes feel more comfortable contributing since they have time to check their text before posting” (Wenger et al., 2002, p. 119). This observation needs to be revisited in Chapter 7, when we analyze the role of ICT mediated Collaborative Learning Communities in the case study to determine if or when a text based seminar environment holds more advantages to enabling learning than an ICT enabled face-to-face option.

Finally, before we move forward from this discussion of barriers that effect distributed Communities of Practice, we must address domain affiliations that can also color the membership allegiance to the community. The distributed Community of Practice is a domain distinct from the local business or learning affiliation. As such it is necessary for distributed communities to spend time creating agreements, reconciling priorities and needs, and dealing with competing pressures (Wenger et al., 2002). At this point, Wenger et al. (2002) acknowledge that membership in a distributed community may

require travel time for one or more face-to-face meetings to reach consensus. Physically proximate interaction is essential to working out agreement to integrate competing domain concerns into the distributed community agenda. As we shall see in the learning environment, similar adoption of collocated meeting time is needed to foster collaboration and contract with other members to work on specific goals together.

2.1.1.1 Designing Distributed Communities; Trust

Distributed communities face a greater challenge of offering opportunities for members to create trust that occurs more readily in physically proximate Communities of Practice. Collocated Communities of Practice can take advantage of encounters in private spaces such as hallways, restaurants, walks between venues (Wenger et al., 2002). In a distributed ICT enabled Community of Practice, “fewer opportunities for spontaneous one-on-one networking,” occur between individual members (Wenger et al., 2002). Additional attention must be directed at how individual affiliations and cultures affect trust building in Communities of Practice, and how these characteristics impact the distributed environment in particular.

2.1.2 What Exactly is a Collaborative Learning Community?

In this section, we review the literature on Communities of Practice and Collaborative Learning Communities contributed to by Lave and Wenger, as well as the relevance of e-Learning community building, as a background for the study. This review of the literature will show how this budding discourse offers an excellent field for further exploration.

2.1.2.1 Collaborative Learning Community; Lave and Wenger

A Collaborative Learning Community is a venue for “legitimate peripheral participation,” (Lave & Wenger, 1991) that increases gradually in the level of engagement and complexity as the learner becomes acclimated and joins the discourse of that community. It is often easier to define something by contrasting it to something else. We can contrast a Collaborative Learning Community to the traditional learning model where the learner is a vessel for the reception of factual knowledge or information that is poured in through lecture, reading and assessed through testing. The traditional pedagogical paradigm envisages learning as a solitary learning act conducted by the person being taught.

The wave of interest in exploring the benefits of learning in a Community of Practice environment can be explained in two ways. First, we may have reached the limits of success in learning to use the traditional paradigm. Second, often there is dissatisfaction expressed with the assessment results from the traditional paradigm. A third aspect to be added, is that moving from learning in a physical classroom setting to the online environment, while broadening the available learning community participation, also creates a struggle to address the social aspects of learning that existed in the traditional paradigm. Often dispersed communities are created without much consideration of the social aspects that a physically collocated Community of Practice enjoys. Social support for learning goals and objectives are not easily translated into cyberspace and consequently early attempts in distributed learning made all but the most rote of learning

objectives difficult or impossible to achieve in the online environment (Rudestam, 2002). In Section 2.3.4 we will address the literature of online learning in more depth, but let us now return to the concept characteristic of a Collaborative Learning Community known as legitimate peripheral participation.

Why does this term of legitimate peripheral participation (LPP) align with the need in this section to define what a Collaborative Learning Community really means? Lave and Wenger (1991) explain that LPP stems from studying the apprenticeship model of learning as a stepping stone to defining a theory of situated learning that takes into account both historical and cultural elements. Briefly, LPP is the phenomenon whereby a newcomer enters a CoP on the fringe and becomes acclimated to that CoP's discourse, leading to fuller participation. The argument that Lave and Wenger propose is that the peripheral role is a useful legitimate way to enter into a CoP. There is a relationship between learning and knowledge. Knowledge sharing and creation occurs as the product of active and ongoing negotiation between the actors to create meaning. This leads us to take account of the situation or learning activities of the people involved. We begin to see the full dimensions of the learner as an active participant in the activity and not the empty vessel of the traditional model, waiting to be filled with knowledge. As Lave and Wenger (1991) suggest about LPP:

It implied emphasis on comprehensive understanding involving the whole person rather than ‘receiving’ a body of factual knowledge about the world; on activity in and with the world; and on the view that agent, activity, and the world mutually constitute each other (p. 33).

A Collaborative Learning Community is a type of Community of Practice that concerns itself primarily with learning, and as such the notion of LPP helps us to see how the learner moves from the periphery into the active negotiation of meaning with the other participants, be they learners or masters.

2.1.2.2 A Social Theory of Learning

Wenger (1998) observes that Communities of Practice are everywhere: at home, at school, at work, in sports and hobbies, and in all other aspects of human interaction. Furthermore, the Communities of Practice to which we belong are continuously updating, being added to, and deleted throughout our lives. “Although the term may be new, the experience is not” (Wenger et al., 2002). This broad concept has become the focus of several scholarly works recently that explore the concept of Communities of Practice, grounded in a Social Theory of Learning with a primary focus on learning as social participation.

The concept map reproduced from Wenger, (1998) focuses learning as the centerpiece with satellite elements of community (learning as belonging), practice (learning as doing), meaning (learning as experience), and identity (learning as becoming). We include the map below to provide a visual representation of a Social Theory of Learning, which is reflected in our theoretical lens for the study in Chapter 4.



Figure 1 Components of a Social Theory of Learning: an Initial Inventory (Wenger, 1998)

Any element may take the center position in the above figure and the map still has meaning. It is in this illustration that we find our most succinct explanation of Wenger’s Social Theory of Learning, which is of paramount importance in understanding the concept characteristics of a Collaborative Learning Community.

Wenger goes on to challenge us to review our own current lives and identify the various Communities of Practice to which we informally belong to better understand the notion of a Social Theory of Learning. He writes that most CoPs do not have a title referencing them as such, nor do they issue membership cards. Nevertheless, they are familiar constructs with easily identifiable members as well as a reason for this membership. Furthermore, we can cast an eye backward at our individual histories and add to the list of those Communities of Practice in which we used to participate. We can also look forward and imagine future Communities of Practice to which we might someday belong. Continuing with this exercise, there are probably a small number of Communities of Practice where we participate as core members, with a larger number where we engage in peripheral participation. Note that the relationships between the concepts of membership and legitimate peripheral participation were introduced in Section 2.1.3. A Social Theory of Learning takes into account the interplay of these and other concept characteristics depicted in the table, Concept Relationship of Collaborative Learning Communities, in Chapter 2. Wenger summarizes this below:

In all these ways, the concept of Community of Practice is not unfamiliar. By exploring it more systematically in this book, I mean only to sharpen it, to make it more useful as a thinking tool. Toward this end, its familiarity will serve me well. Articulating a familiar phenomenon is a chance to push our institutions: to deepen and expand them, to examine and rethink them. The perspective that results is not foreign, yet it can shed new light on our world. In this sense, the concept of community or practice is neither new nor old. It has both the eye-opening character of novelty and the forgotten familiarity of obviousness—but perhaps that is the mark of our most useful insights. (p. 7)

By referring to a Social Theory of Learning, we can begin to enlighten our understanding of ICT enabled CLCs, as this theory lets us define the concept of learning as a member of a CoP. Communities (and businesses) are set up with enthusiasm at the beginning but many communities die within a short time. One aspect of this research is to better understand the different crises in the lifecycle(s) of a distributed CLC. Critical mass is a very important moment in time because the participants in the community are creating content themselves. Three other aspects of community building to be aware of and document are exchange relationships, the innovational nature of participation in a community, and heterogeneous communities. Wenger, (1998) provides us with A Social Theory of Learning framework from which to study these aspects of a Collaborative Learning Community.

2.1.2.3 E-Learning Community Building and Collaboration: Bielli, Klobas, Kumar, Renzi and Others

This section of the literature review contains references to several papers produced from a business management viewpoint over the last six years, concerning the use of ICT in distributed collaborative learning: Developing Community in Online Distance Learning (Renzi & Klobas, 2002). The Bielli, Kumar and Klobas (1999) article detailing an experience from CEMS (Community of European Management Schools), represents an early study of learning collaboration at a distance using groups of twenty-five management students divided into teams of three to four students each. "Each joint group of Bocconi and Erasmus students were expected to prepare, at a distance, a business plan for real companies located in Italy during the months of April and May 1998," according to the paper (Bielli et al., 1999). The groups used software tools for collaborative work, Internet, videoconferencing and online chat, augmented by some traditional, physically proximate lectures. One professor moved from one country to the other in order to physically co-ordinate the effort. It is useful to include a brief description of both the obstacles and enabling factors present in this study to use as a comparison to the case study which follows for this research:

Students faced some obstacles, including: some aspects of the use of the workgroup software instrument, different deadlines for the two students groups (Bocconi and Erasmus) due to different Academic calendars and unclear perception of the group roles. Enabling factors which helped them included: an effective exchange of info between the coordinators of the two Universities, face to face meetings to analyze the problems found (related to distance work), video recorded files for self presentation of the groups as material included in the students projects. The project gave interesting results both for learning processes and new teaching methods and the paper also rationalizes the main results obtained by the project from different perspectives: cultural differences, negotiation, role of technology in group working, etc. (Bielli et al., 1999, p. 35).

As with Wenger's description of the challenges of distributed communities (Wenger et al., 2002) recounted above, this study found similar results. In this case the effects of time distance had less to do with the clock than with different academic calendars. Students and faculty benefited from some face-to-face meetings to mediate the distance barriers.

An article by Klobas & Haddow (2000) showed that students respond well to computer-supported collaboration as a technique for learning about behaviors in computer-supported international teams. The study reported that the technique was not perfected and future research was needed to determine how widely it can be applied in management education and training. Even with these limitations, the conclusion reported that computer-supported collaboration can be effectively incorporated into course design: computer-supported collaborative learning about virtual team work is.

2.2 Distributedness and Polycontextuality

Although some Collaborative Learning Communities are collocated, the area of interest for this research is in Collaborative Learning Communities that are distributed over geographical, often global distances. Therefore we must understand the concept of distributedness and the role that ICT plays in bridging the distances between the distributed learners/researchers. In practice people can join open CLCs from all walks of life, socio-economic backgrounds, nationalities, and ethnicities. They can even be distributed around the globe representing a global variety of diverse people. On the one hand, collaborative learning requires a high level of interaction intensity (Kumar et al, 2005) among its members. This intense interaction is needed to establish the member's identification with the community and to develop common ground and shared common understandings. Geographical distribution is a barrier to intense interaction. This dichotomy leads to the need for bridging technologies in the form of both, moving people, and moving bits. The concepts of distributedness and polycontextuality provide us with a useful framework for defining the dimensions of distance. With this foundation we can go on to explore the gaps in the current paradigm of Collaborative Learning Communities mediated by technology.

2.2.1 Distributedness

There are several broad reasons why distance must be carefully considered in the context of distributed CLCs. Even with all our emerging information and communication technologies, distance and its associated attributes of culture, time zones, geography, and language affect how humans interact with each other (Olson & Olson, 2001a). This research into technology enabled collaborative learning focuses on how people interact with each other as they work on common goals to meet their learning objectives. The setting for collaborative learning may be formal, such as a scheduled meeting, or may necessitate informal, impromptu interactions. In order to further understand the challenges, we will explore the dimensions of distance including: Cultural Distance, Physical Distance, Time, Infrastructure, and Regulations in terms of the politics of access to technology (van Fenema, 2002). Each is discussed in detail below.

Distributedness finds its roots of explanation in the fields of computer science, networking, and more recently, the study of globally distributed work. In an effort to define and understand distributedness, Evaristo, Desouza, Scudder, and Sato (2003) analyzed distributedness in the context of project management in distributed settings by conducting a multi-site field study of corporations from the United States, Japan, and Europe. They found ten dimensions that define distributedness, which include characteristics of trust, perceived distance, level of dispersion, synchronicity and types of stakeholders. In another recent study on knowledge management in distributed environments Awazu (2004) drew on the Evaristo study and applied notions of distributedness consisting of two dimensions, “geographical dispersion, meant to indicate physical distance between individuals, and expertise difference, meant to express a perceived distance among individuals” (Evaristo et al., 2003). We now review the various types of distance including Cultural Distance, Physical Distance, Time Distance, Infrastructure Distance, and Governance Distance in the subsequent sections 2.2.1.1 through 2.2.1.5.

2.2.1.1 Cultural Distance

Any review of Communities of Practice must include investigation into cultural differences as they influence the dynamics of actor interactions. First, we can consider the concepts of individualism versus collectivism as cultural characteristics addressed in Hofstede’s study of IBM worldwide (2001). This concluded that, "Culture is more often a source of conflict than of synergy. Cultural differences are a nuisance at best and often a disaster" (Hofstede, 2001). This dark statement resulting from his study, which concluded in 1973, has not deterred the development and success of Communities of Practice from spreading and logging successes, particularly in collaborative learning and research communities under the research and education umbrella.

Trompenaars and Hampden-Turner (1998) do not write about how to understand people of different cultures, but rather about how cultural differences affect the process of doing business and managing. In fact, the author asserts that we can never understand people of different cultures, that management techniques that work with one culture are sure to fail with another, and yet there are ways to cope and move forward. This work allows us to set realistic cultural expectations when studying diverse Collaborative Learning Communities. For example, awareness of cultural distance informs the lens into pedagogical approaches, especially as they are translated into the ICT environment.

2.2.1.2 Physical Distance

Physical distance, also referred to as geographical distance, is recognized as a significant obstacle to collaborative work and learning (McCann & Galbraith, 1981). One strategy to handle work interdependencies is to reduce distance between co-workers or departments in the business environment (McCann & Galbraith, 1981). Even given this strategy, research results from the late 1960s show that the effects of proximity on communication patterns may do little to help us bridge physical distance gaps in the

emerging global work and learning environment (Allen & Cohen, 1969). These earlier findings are confined to spatial environments like office plans, and refer to a time preceding advanced ICT, but we can extrapolate the findings and apply them to global distances. We then can recognize that physical distance is apt to: 1) increase response times; 2) increase coordination costs; 3) be prone to impersonal and/or inflexible forms of communication; and 4) increase the likelihood of conflicts due to limited socialization opportunities (van Fenema, 2002). This theme of physical distance has an overarching influence and is pervasive in the literature and theory we are reviewing. It is the driving factor for the sections above and below concerned with distributedness, polycontextuality, culture, time, and infrastructure. It is an integral part of the concept map and theoretical lens which follows in Chapter 4, and it makes up a key component of the following work into defining a research methodology and case study to help us answer our research questions.

2.2.1.3 Time Distance

The challenges associated with collaboration which spans time zones are a relatively new phenomenon and as such there are not many references available (van Fenema, 2002). The study of distance on collaborative research and development has been an area of interest since the 1960s (Allen & Cohen, 1969), but there are only a few studies that concern themselves with time distance, and then only as a peripheral interest to the main field studies of globally distributed collaboration (Cramton, 1997; Meadows, 1996). Although not the main focus, these findings are applicable to the distributed CLC environment and are therefore considered. We will use the words distance and difference interchangeably in this section, as a way to show that difference does widen the distance gap in distributed collaboration, and by recognizing this obstacle steps can be taken to adjust for it.

Issues and Effects of Time Distance

Time zone differences can be as subtle as normal working hours in two or more locations not perfectly overlapping, or as complex as having significant differences in attempting to synchronize an acceptable overlap, in the case of a distributed video conference spanning from California, Miami, Rotterdam, CERN, and Hong Kong, for example. Our interest in time difference is related to task interdependence, which exists or emerges in the participation within the CLC environment. Our literature review of CLCs, CSCW and CSCL shows that some socialization, preferably face-to-face, mitigates obstacles to collaboration (Klobas & Haddow, 2000; Renzi & Klobas, 2002) and so it is necessary to explore the effects of time distance further.

The most prominent effect of time difference is that participants in collaboration have limited windows of availability for real-time communications (van Fenema, 2002). If collaborative tasks require the synchronous involvement of distributed participants, those interactions must be scheduled to coincide with predetermined windows, or a protocol involving asynchronous communication, such as email, must be employed to identify a mutually acceptable window, resulting in delay. We find this factor more prominent in

the positioning of east-west participant sites if the north-south participants are in the same hemisphere.

A second effect of time zone difference is that it induces participants in collaboration to switch to asynchronous communication modes. While asynchronous communication via email, books, journals and so on, is a useful means of communication, it is recognized as an obstacle to understanding in knowledge creation and sharing endeavors because written communications do not benefit from accompanying human gestures (Renzi & Klobas, 2002). In a globally distributed work (GDW) endeavor, where email or voicemail may become the default communications, the limited number of cues limit interaction. Nevertheless, time differences may necessitate the use of asynchronous media even when more interactive channels would be preferred (Jarvenpaa & Leidner, 1998).

The third recognized effect of time difference reflects back to the first in that people may not be aware of the time zone restraints of their distributed collaborators or may fail to clearly communicate their time constraints and preferences (Cramton, 1997; Meadows, 1996). This lack of a conscious protocol to address time constraints may result in confusion, conflicts, frustration, and incorrect attributions of behaviors (Hinds, 2000). This means that the already limited windows available for synchronous collaboration are not fully utilized, lengthening the cycle time of work processes, especially for the tasks requiring multiple site participation (Jarvenpaa & Leidner, 1998).

Adapting to Time Distance

The research we rely on above to help define the challenges to collaboration presented by time distance also suggests approaches to mitigate the obstacles. The first step is for participants in distributed collaborative endeavors to communicate their time-related constraints and expectations (van Fenema, 2002). The more explicitly this information is communicated the more effective the collaboration (Jarvenpaa & Leidner, 1998). The second step involves an awareness that the collaborators must rely on asynchronous communication means to bridge the time distance when synchronous means are impractical. Furthermore, the asynchronous communication must take into account other collaborative participants' existing knowledge and information needs, so that messages explain issues in detail allowing others to start working without having to consult the originator (Meadows, 1996). The third step to managing the challenge of time distance is to adapt local priorities in such a way as to adjust for remote needs. For example, adjusting local office hours to create a broader window for synchronous communication with remote sites, even to the point where one site participant adjusts their workday to correspond to the remote site's work day (Meadows, 1996).

2.2.1.4 Infrastructure Distance; the Politics of Access

Infrastructure distance is defined on two distinct levels. There is the difference associated with the diversity of local hardware and software management systems to facilitate collaborative work and learning, and there is the difference associated with local to global network access which we have come to rely on to facilitate distributed collaboration. This section seeks to put both the local systems infrastructure and the global networking infrastructure in perspective with this CLC research.

On the local scale, where the attendant hardware and software systems affect the way participants view collaborative infrastructure, we can rely on research studies which found that differences could refer to both the diversity of local systems (e.g. each using their own office automation software), and the lack of integration of software, hardware, or networking systems across distributed sites. Such research is concerned primarily with infrastructural differences in cases of inter-firm projects, such as offshore outsourcing, which find that international projects within multinational corporations can usually benefit from standardized ICT infrastructure (Friedman, 2005, Meadows, 1996). Conversely infrastructure differences can have a significant effect on GDW projects since they rely on ICT for both communication and document sharing (Meadows, 1996). One way this effect can be measured is in the costs of communicating in terms of effort, (Kraut & Galegher, 1990), as well as the hard costs of telecommunication services. On the effort side, measures show that even having to dial a long distance telephone number adds to the perception of distance between participants in the collaboration (Meadows, 1996). As we have established earlier there are strong ties between lessons learned from CSCW, CSCL, GDW, and CLC research into the effects of distance on the success criteria of the collaboration (see Table 1 above).

2.2.1.5 Governance Distance

Distance between globally distributed collaborators in terms of governance differences has been well documented in business management literature. It has been observed that in a collocated setting, collaboration within corporations and across organizational boundaries is purposely embedded in both hierarchical and lateral policy and procedures (Hennart, 1993). Of course it is recognized that there are many volumes of organizational management literature focused on developing business organizational culture to work in this cohesive fashion (Walton, 1986; Johnson & Blanchard, 1998), perhaps indicating that it is not a natural result of physical proximity. On the other hand, people in the same organization tend to adhere to a consistent governance structure and develop a common jargon (Williamson, 1975), which can be viewed as a way of fostering cultural cohesion (see Section 2.2.3). Between organizations, explicit contractual documents or implicit rules that are common to the geographic region of the organizational area govern exchange relationships (Powell, 1990). Such governance documents to outline the protocol of the relationships can also be found in CLCs.

Globally distributed organizations face differences in the governance forms that occur in physically collocated instances (van Fenema, 2002). Distributed sites, even in the same organization, may adapt to local conditions and rules so when they come together to collaborate on a project (e.g. provisioning an advanced network infrastructure (Ibarra, Cox, Alvarez & Silvester, 2004; Schindler, 2005)) differences in management structure and approach will become apparent. Making connections between the participants from the distributed sites requires attention to communication protocols as well as definition of responsibilities (Kumar & Van Dissel, 1996a).

Governance Issues and Responses

The trend of outsourcing is a form of distributedness, and we look at it here because of the knowledge transfer implications to distributed CLCs. Research into the issues and responses when governance distance effects outsourcing projects is well defined (van Fenema, 2002; Meadows, 1996; Kumar & Van Dissel, 1996a). By understanding the issues and responses now employed in outsourcing, we can determine if and when they are appropriate to distributed collaborative learning, since both activities require knowledge creation and sharing.

First, when an outsourcing project begins the vendor's ICT personnel lack intimate knowledge of the client's business. This circumstance occurs with collocated projects as well and the systems analysis and design process is employed to bridge the gap. The same approach in offshore projects represents a greater obstacle due to limited access (Millar, 1999). It was found that managing a vendor team from the remote client site appears unfeasible (Meadows, 1996), so physical collocation of the manager is required.

Second, during system development the outsourcing team needs feedback from the client professionals, but distribution places constraints of communication between them. Prototyping development methodology is employed to promote regular interaction between the distributed sites and facilitate information exchange and feedback (Meadows, 1996).

Third, the outsourcing of the project prohibits the client's IT management from taking on an overall project management role because the client management is not familiar with the remote vendor team resources or culture. Stakeholders prefer a more explicit, documented and formalized development process in comparison to physically collocated projects (Meadows, 1996). By having a formalized project execution plan (PEP) with milestones as a reference it is easier for the client to keep track of progress. This approach also benefits the vendor's expectation management responsibilities and makes the project completion less dependant on individual participants who may leave the project at intermediate stages (Meadows, 1996).

Finally, managing communications that arise out of mutual dependencies in the PEP can result in many threads of discussion, both written and verbal, that present a challenge to project management personnel tasked with maintaining an overview of project progress. To counteract this challenge, contact between the distributed collaborators is encouraged

via visits between sites, in order to promote face-to-face exchanges to build and sustain mutual understanding. These meetings allow participants to build common approaches that facilitate subsequent distributed collaboration (Millar, 1999).

2.2.1.6 Boundary Spanning

While this research is specifically interested in the role of distributedness in the CLC environment, there are good studies to draw on in the broader field of Globally Distributed Work (van Fenema, 2002), which apply an emerging organizational theory on “boundary spanning,” in the context of distributedness applied to aggregated work outcome. Boundary spanning addresses the trend of cross-functional and geographically separated teams whose work is interdependent. Specifically, Engestrom, Engestrom, and Karkainen (1995) applied activity theory to the learning environment to study distributed groups of teachers who crossed boundaries by holding joint meetings and successfully developing a new curriculum. The teachers’ geographical collocation provides us with a simplistic example of boundary spanning. When we introduce either formal or informal networking into the equation there are more variables at play.

Knowledge creators and sharers in informal networks can play one or more of five roles. Those five roles are central connectors, boundary-spanners, gatekeepers, bridges, and experts (Cross, 2002; Kleiner, 2003). These roles illustrate the importance of polycontextuality in the distributed collaborative learning environment.

2.2.2 Polycontextuality

Polycontextuality occurs in a distributed environment and can be described as the challenge experts face when they attempt to bridge multiple communities or contexts (Engestrom et al., 1995). Polycontextuality plays a major role in this research as that is where ICT comes into play as a substitute for the face-to-face boundary spanning aspect of distributedness discussed above. Engestrom et al. explored a combination of cognitive science and activity theory to investigate boundary spanning in the study of expertise. They found that while most researchers view expertise from a top down perspective, they could research the field using a peer-to-peer model; as observed by van Fenema (2002), they took a horizontal view. “In their work, experts operate in and move between multiple parallel activity contexts. These multiple contexts demand and afford different, complementary but also conflicting cognitive tools, rules, and patterns of social interaction” (Engestrom et al., 1995). The proposed research will seek to observe this phenomenon in a graduate studies collaborative learning environment, where adult learners are legitimately experts in their own roles as practitioners, while being apprentices in the role of graduate students. Engestrom et al. address the challenge experts take on while bridging multiple communities or contexts, which can be referred to as polycontextuality.

2.3 Technologies in Collaborative Learning

2.3.1 Technology in Learning Communities

The Communities and Technologies (C&T) field, organized in 2003 through a conference series, was slated to become a major international forum (Huysman et al., 2003). The practitioner journals, such as ACM and MISQ, have run individual and special editions on the growing research and interest in communities and technology. Researchers in The Netherlands, such as Huysman, in collaboration with Wulf (Germany) and Wenger (US) are making strides in the Communities and Technologies (C&T) arena by hosting the First International Conference in 2003, and a second C&T conference in Milan in 2005.

Central to the C&T discussion of research and practice is an approach whereby communities are regarded as social entities where the actors integrate technology artifacts as a way of furthering their common needs, interests, or practices. There is equal emphasis placed on both sides of the C&T equation. First, let us look further at the communities' characteristics. We now learn, work, and interact within a global knowledge-based society, where communities play a pivotal role because the various actors share common ground (Huysman et al., 2003). As we saw in Section 2.2 above, there are various distances separating actors involved in distributed communities and this is where the technology enables and bridges the gaps. However, there is still much work yet to do to equip online communities with the tools, protocols, and understanding to move their interests forward. Information technologies may support or hinder these efforts, "so there are considerable research challenges ahead of us" (Huysman et al., 2003).

The work we are doing within this study is intended to add to the body of knowledge on Communities and Technologies, keeping the perspective of the C&T field which is interested in describing knowledge sharing practices in multiple circumstances within and between organizations. There is a necessary focus on relationships which form the junctures where knowledge creation and sharing takes place within communities. Section 3.1 reviews the Actor Network Theory (Walsham, 1997), as a theoretical lens useful in viewing the C&T phenomenon.

2.3.2 Computer Supported Collaborative Work (CSCW)

In the Computer Supported Collaborative Work (CSCW) research community the Daft and Lengle article (1984a) set a baseline for studying the enabling and restrictive nature of media richness on distributed collaborative endeavors. We will focus on this further in Section 2.3.3, which follows.

Vogel's two articles (2000; 2001) about sociocultural learning help us to understand the way virtual teams which are rapidly developing in organizations spurred on by the move toward a global economy, are enabled by CSCW technologies. This work bears on our research on CLC education as to how to prepare students for work in the virtual

workspace, where teams may cross time, geographical, and cultural boundaries. These articles explore how, “the culturally sensitive theory of sociocultural learning is combined with GSS (Group Support Systems) in an illustration of cross-cultural, globally distributed virtual teams of students located in The Netherlands, Greece, and Hong Kong work on vested interest projects.” (Vogel, Davison & Shroff, 2001, p. 2) The articles are an important reference to a set of critical success factors that inform virtual learning contexts derived from the research findings. Vogel and co-authors provide recommendations for operational practice in the virtual work space which are reproduced in the following table because of the parallels we can draw with a Theory of Social Learning (Wenger, 1998).

Table 2 Critical Success Factors of GSS Derived from the Ten Principles of Sociocultural Learning (Vogel et al., 2001)

1) Activity Setting as Unit of Analysis relates to activity setting comfort. GSS enable creation of an activity setting, i.e. an environment that is conducive to learning, e.g. richly supported and non-threatening.
2) Assisted Learning aligns with facilitation as an aspect of changing instructor roles. GSS help by communicating messages and feedback efficiently to help people learn. The focus of instructors shifts from teaching to assisting in the learning process.
3) Cognitive Apprenticeship illustrates self-directed learning, with the focus on learners taking responsibility. GSS present information in a structured fashion but also allow browsing and encourage exploration. Learners are not forced into specific responses as might occur with a more structured tool. GSS support a flexible structure and varying privileges (e.g. editing) that can be engaged as appropriate to give learners more intellectual freedom.
4) Distributed Intelligence in a Learning Community gives a sense of knowledge management. Web-based GSS provide easy access to external resources, while in addition providing many ways to express individual feelings. GSS not only establish the learner network but further reduce barriers to participation through features such as anonymity, simultaneous interaction and the establishment of a collective learning community memory.
5) Internalization gives a sense of knowledge application. The key here is communication before internalization. GSS support this activity through making information available in an effective and comforting fashion to set the stage for individuals to build on their existing mental models so internalization can take place more easily.
6) Intersubjectivity gives an indication of synergy among team members. GSS support development of shared understanding. The tools promote consensus formulation but enable a broad range of views to emerge.
7) Mediation brings to the fore issues associated with learning transformation. GSS provide a range of technical and structural support (e.g. voting, convergence, messaging, and routing) that can assist in enhancing the communication process and sociocultural learning in a supportive and non-threatening fashion.
8) Scaffolded Learning relates to the impact of external structuring. GSS provide varying degrees of structure to match the needs of the learning environment. It is important to create an appropriate structure and be able to modify the structure dynamically so as to meet evolving learning needs. Having the minimal critical structure is of paramount importance.
9) Teleapprenticeship indicates technology supported learning environment effectiveness. Here, the focus is more on the technology and tools. GSS are a prime example of technology and tools to link remote communities with varying characteristics and degrees of impact.
10) Zones of Proximal Development provide indicators of communication effectiveness over distance. Distance in this sense includes learning from more experienced people, not just those at the same level. GSS provide the means to link up with multiple cultures and facilitate cultural learning with strong support for topic focus. GSS also enable the bringing together of a broad range of participants from multiple levels and perspectives.

Vogel and colleagues help us to make the connections between a Theory of Social Learning (Lave & Wenger, 1991; Wenger, 1998) and the development of a sociocultural learning theory that is based on technology enabled Group Support Systems (GSS).

2.3.3 Media Richness

When talking about ICT enabled Collaborative Learning Communities, the role of technology is to mediate between people separated by distance. One of the ICT components of interest in this context is media richness (Daft & Lengel, 1986). Media richness theory (MRT), sometimes referred to as information richness theory, proposes that task performance will be improved when task needs are matched to a medium's ability to convey information. According to Daft and Lengel's research, media varies in

its ability to enable people to communicate and develop understanding according to the media's richness (Daft & Lengel, 1986). Media with greater language variety such as natural language versus numeric information, and a greater number of cues such as tone of voice and a greater personalization of the message as well as more rapid feedback constitutes a media rich experience leading to greater understanding among the participants.

Media richness theory (Daft & Lengel, 1986; Daft, Lengel & Trevino, 1987) argues that certain media are better able to transmit information depending upon whether the information is used in situations of uncertainty or equivocality. Uncertainty exists when a framework for interpreting a message is available, but there is a lack of information to process it (i.e. there are well understood predetermined responses to potential problems (Daft & Weick, 1984b).) Equivocality exists when there are multiple (and possibly conflicting) interpretations for the information or the framework with which to interpret it. Equivocality requires negotiation among members to converge to consensus on one interpretation. Here we can see a parallel to Wenger's emphasis on the negotiation of meaning for collaborative learning to take place (Wenger, 1998).

Media providing higher richness are preferred. In contrast, uncertainty requires someone in the group to provide, locate, or create the needed information, and in this case leaner media may suffice. Daft and Lengel (1986) argue that media capable of sending "rich" information are better suited to equivocal tasks, while those that are less "rich" are best suited to tasks of uncertainty. However, research suggests that the degree of media richness may be relatively unimportant for reducing uncertainty (Rice, 1992).

Lee and Ngwenyama present a critique of media richness which helps set the stage for the current state of the technology (Lee & Ngwenyama, 1997). This research into information systems and their organizational implications is informed by critical social theory (CST). Media richness theory informs us that collaboration demands clear communication. Shannon and Weaver's Model of Communication (1948) defines media richness in the number of bits – i.e. media richness in that the more bits you can send the better the communication. The Shannon and Weaver model has withstood fifty years of critical analysis and can be summarized as follows:

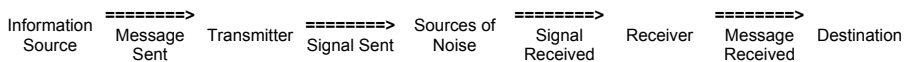


Figure 2 Shannon and Weaver Model of Communication

The model above represents a message beginning at an information source, which is relayed through a transmitter, and then sent via a signal towards the receiver. But before it reaches the receiver, the message must go through noise (sources of interference). Finally, the receiver must convey the message to its destination. Even in the simplest form of communication from one person to another, when they are standing right next to each other, there are boundaries to the receiver understanding the message from the sender. When we add electronic media and distance to the equation it is easy to understand how simple it is to misconstrue the message.

There are varying perspectives of the socially defined role of media richness, especially when referring to electronic media (Fulk, Steinfeld, Schmitz & Power 1987; Schmitz & Fulk, 1991). We can draw conclusions from this research as to the role of media richness in the CLC environment, where the group, organizational experiences and norms, as well as knowledge of the collaborators (Sproull & Kiesler, 1986) can alter participants' perceptions of media richness. In other words, media that are lean to one group may be richer to another, and these perceptions may change over time. While research by Rice (1992), concluded that social factors have only minor effects on media richness perceptions, this research work was done between one and two decades ago, before the pervasiveness of the World Wide Web had begun, and does not factor in the rapid ICT advances that global learning has been subject to since then.

2.3.4 Online Learning

Any discussion of applying advanced technologies to Collaborative Learning Communities must be grounded in the current Internet based conventions for online learning, in order to understand how tools developed for this environment translate into usage for Collaborative Learning Communities as well as where they fall short. There are several decades (Rudestam & Schoenholtz-Read, 2002) of research available on the subject of online learning, although much of this study has been aimed at developing content for the solitary student or in the traditional instructor lecturer mode. The Fielding Graduate University faculty has contributed some breakthrough literature to online learning, such as their Encyclopedia (Distefano, Rudestam & Silverman, 2004). To fill out our picture of the online learning movement the introduction to this is presented below:

With the increasing acceptance of distributed education in both the public and private sectors, it seems timely to publish this book to capture the concepts and methods that reflect this phenomenon. In the not-so-distant past, distributed education was a topic of limited interest to a relatively small number of educators. That is no longer the case. The tentacles of distributed education have spread to mainstream public and private education, from elementary school to graduate study and adult continuing education. It has become big business in the corporate world and an indispensable resource in the public sector. As such, this encyclopedia should be of interest to a large constituency of educators, students, managers, consultants and policymakers. (Distefano et al., 2004)

This passage reflects the parallel interests of the stakeholders for this study and those engaged in all aspects of online learning. As noted in Section 2.1.3.2, there are overlapping interests between researchers engaged in E-Learning Community Building and Collaboration and the online learning movement.

Rudestam and Schoenholtz-Read's handbook (2002), explores how the advent of technologies, such as the Internet, have opened up new avenues of knowledge creation

and sharing. This fundamental technology change, akin to the invention of the printing press, both inspires and forces educators and institutions to re-examine pedagogical approaches and allows students vast access to experts, library resources and each other. “The Internet gives everyone who seeks information access to resources once held within the ivory tower” (Rudestam, 2002).

As we have seen above there are a number of references describing the process and technologies of online learning for the individual, but there is a gap in the literature for CLCs because the role of technology enabled CLCs for learning, knowledge sharing and knowledge creation is evolving rapidly. Few researchers have addressed Collaborative Learning Communities specifically, though it is certainly of interest for online learning. Furthermore, there are many connections to be made between theories of social learning and sociocultural learning mediated by technology.

2.4 Evaluation

Part of the Sage Publications bibliography (Guba & Lincoln, 1989) provides the methodology for the case study survey instrument. This also provides the vehicle for gathering pertinent data to help answer the research questions, and specifically how to analyze the findings for the question: *What are the issues and problems that may arise in the context of technology enabled collaborative learning?*

Material for designing educational evaluation is undertaken here to insure a balanced and well-considered approach to qualitative research methods. Before making a decision to take a qualitative Interpretivist stance, review of mixed method texts explain why social science approaches require multi-disciplinary consideration. Methodology formulation is drawn from the psychology, sociology, anthropology, health and education fields (Bernard, 2000). There is both an art and a craft of educational program evaluation, and through workbook exercises it is possible to inform research endeavors with creativity, as well as proven methodology (Freeman, 1989). Even within a qualitative research approach, associated methodologies encompass a variety of discipline specific philosophical stances (Marshall, 1999). In spite of this variety there are some common considerations and procedures to guide its conduct and some “habits of mind and heart” (Rossman & Rallis, 2003) that transcend the differences. Rossman says that there is a specific vocabulary of qualitative research. Specific processes, approaches, uses and perspectives are applied by the qualitative researcher to produce knowledge (Rossman & Rallis, 2003). The subsequent texts offer a clear guideline as to these common attributes of qualitative analysis and how to apply them to a research study.

Using a common interactive approach framework to qualitative research enables us to step through the process in a way that is identifiable and accepted by peers within the community of practice. Steps outlined by Maxwell (1996), such as reflecting on the researcher’s purpose and experiential context related to a study, help to eliminate bias, as well as focus the research questions. These steps to qualitative research result in studies that carefully consider the following major topics: Research Context; Contextual Concept; Concept Map Diagram; Research Questions; Research Methods; Description of

Study; Research Relationship; Sampling – Data sources, places, persons, times; Data Collection; Data Analysis; and Validity. By taking this hands-on approach to integrating these qualitative design components, the research proposal and execution flow into a rational product.

Most of the literature on educational assessment assumes a face-to-face, collocated learning environment, but there are significant enough differences when moving to an online distance learning model. Morgan argues that theories and models of assessment must be evaluated and modified according to the dimensions of distribution in the program (1999). On the other hand, Denzin and Lincoln (2000) approach the collection and interpretation of qualitative materials from a stance informed by postmodern theory, rather than whether the subject of investigation is proximate or distributed. It is not, however, a contradictory stance as much as a cautionary one to qualitative researchers to recognize the colonial, imperialistic approach to social sciences and to guard against a hegemonic outlook to the subject of the inquiry. The following three contributions provide a means to design and apply a thoughtful research methodology.

Case study research is one of five research strategies (including the experiment, survey, archival analysis, and history), that can be compared and considered in the social sciences (Yin, 1994). Yin argues that the form of the research question informs us as to when to use each strategy. In Chapter 5, the research methodology contains a comprehensive review of each strategy, and it is through Yin's approach that the appropriate decision to use the case study can be reached. Yin's comprehensive approach to case study research carefully considers problem definition, design, data collection, data analysis, composition and reporting (Yin, 1994; Yin, 2003).

An applicable text on qualitative research and case study applications, focuses on the field of education (Merriam, 1998) and is complimentary to Yin's work cited above. Merriam contrasts the nature of qualitative with positivist research in the context of education. Guidelines are provided for when to select the case study approach or ethnography, phenomenology, grounded, theory, or the generic qualitative study. Merriam says, "A qualitative case study is an intensive, holistic description and analysis of a bounded phenomenon such as a program, an institution, a person, a process, or a social unit" (1998, p. 21).

Researchers in the social sciences have turned to Miles and Huberman's (1994) qualitative approach to data analysis to draw reliable meaning from qualitative data. There are over sixty methods of data display and analysis represented, making the criteria provided for selecting the most appropriate options and analysis packages very useful. The goal of, "deriving knowledge that we and others can rely on," from qualitative data is fraught with problems, while offering many advantages. Qualitative data usually takes the form of words which contain vivid descriptions and explanation, but do not lend themselves to the same analysis as numerical data sets. Qualitative data issues include labor-intensiveness, extended time for analysis, and subjectivity to researcher bias (Miles and Huberman, 1994). As with Yin, Maxwell, and others in this section, Miles and

Huberman advocate employing tested strategies of data display and analysis to overcome these known issues.

2.5 Literature Review Summary

The above literature provides a basis to answer the question: *What are the issues and problems that may arise in the context of technology enabled Collaborative Learning Communities? How does IT enable Collaborative Learning Communities?* As we look at the literature on Collaborative Learning Communities we see that it has really not fully explored the role of ICT in Collaborative Learning Communities so there is a gap in our knowledge base. Huysman, Wulf and others, through the C&T conference series, have begun the work of compiling literature on the role of technologies on communities in general. However, there is sparse literature available on the role of ICT on CLCs specifically, and even less on how the role of advanced technology is likely to change this. The gap we have found in the literature happens to compliment the research question: *How does ICT enable Collaborative Learning Communities?* Therefore this thesis is increasing the understanding of this question.

The literature review presented above in Chapter 2 has four main sections that together provide input to the context of this research. Section 2.1 begins the chapter with a review of literature about Communities of Practice and provides a detailed table, which extracts the characteristics of Collaborative Learning Communities from the relevant literature in Section 2.1.1. In Section 2.1.2 we have attempted to answer the question: *What Exactly is a Collaborative Learning Community?* This is done by referring to the preceding table. Section 2.2 delves into the concepts of distributedness and polycontextuality to help answer the question, *What can advanced ICT contribute to enhancing learning in distributed Collaborative Learning Communities?* The literature review looks at the meaning of distributedness in its various forms in Section 2.2.1, and at polycontextuality in Section 2.2.2. The next sections from 2.2.3 to 2.2.7 review aspects of distance, including cultural, physical, time, regulation and infrastructure distance.

Section 2.3 reviews literature on the Technologies in Collaborative Learning in order to help answer the question: *What can advanced ICT contribute to enhancing learning in distributed Collaborative Learning Communities?* We survey the literature on Technology in Learning Communities in Section 2.3.1. Section 2.3.2 reviews relevant work on Computer Supported Collaborative Work to gain insights into the contributions of this field to collaboration, as it relates to distributed learning. We also perform a review of Media Richness theory as it relates to the ICT environment for Collaborative Learning Community activities in Section 2.3.3. Concluding the technologies in collaborative learning, Section 2.3.4 reviews Online Learning literature to extract the technical development and current state of the ICT environment as it relates to both solo and group online learning.

Section 2.4 is concerned with evaluation standards and norms for both the qualitative research study as well as the hermeneutics involved with measuring Collaborative Learning Community metrics. This literature informs the notion of value toward sharing

and creating new knowledge, as well as how to measure results from demographic and anecdotal data collection. The Fourth Generation Evaluation literature review leads this section, which is supplemented by a number of books from the Sage series, as well as other prominent work in the areas of case studies and qualitative analysis methods. This literature review now leads us to Chapter 3 to make the connections between the grounding theories for this research with the research questions included above, as well as a Theory of Social Learning as put forth by Wenger et al.

3.0 Theoretical Underpinnings for the Study

The theoretical basis for this study can be understood at three levels. First, in the Chapter 2 literature review we provided the overall context of the Collaborative Learning Community enabled and enhanced by technology. At the second level, Chapter 2 outlines theories related to the relevant literature that look at phenomena such as Communities of Practice, Media Richness, Computer Supported Collaborative Work (CSCW), and Collaborative Learning. At the third level, here in Chapter 3, we examine more general theories from social sciences that may provide us with a broader theoretical lens for examining the phenomenon discussed in chapter 2.

In order to answer the research questions and to inform and frame our answers we examine Actor Network Theory (Callon, 1987; Latour, 1993), Activity Theory (Leont'ev, 1977, 1981), and Structuration Theory (Giddens, 1984). In Section 3.1, Actor Network Theory puts the relationship between CLC actors, defined as both people and technological artifacts, into context. In Section 3.2, Activity Theory describes how the conscious mind behaves in a social setting to contextualize the CLC participant psychology in a distributed technology setting. Then, in Section 3.3, Structuration Theory (Giddens, 1993) uses concepts of social structure and human action to describe and explain the intersection between the human and the artifacts. In our case, the humans are the CLC participants and the artifacts are the ICTs that enable them to interact in a distributed environment. Section 3.4 summarizes the concepts contributed by these theories to provide the frame for our empiricism via the Fielding case study.

3.1 Actor Network Theory

Actor-network theory (ANT), is a theory of scientific, technological, and organizational research. It was developed by two leading French Science and Technology Studies (STS) scholars, Michel Callon and Bruno Latour, together with a British anthropologist, John Law (Callon, 1987; Latour, 1987, 1993; Law, 1987, 1992). ANT stands apart from other STS and sociological network theories due to the concept that an actor-network contains people, along with material objects and organizations. All of these elements are referred to as actors and are treated equally. They are collectively referred to as Actant. ANT uses the principle of generalized symmetry, which states that human and non-human actors should be treated with the same vocabulary. ANT is among the theories commonly used by scholars in the interdisciplinary field of STS, as well as in sociology and feminist studies.

ANT is applicable to information systems and we can rely on Law's (1992) observations to make that claim. He says that although actor-networks have been described in a science environment they translate to other institutions because the product of actor-networks is knowledge creation:

I put "knowledge" in inverted commas because it always takes material forms. It comes as talk, or conference presentations. Or it appears in papers, preprints or patents. Or again, it appears in the form of skills embodied in scientists and technicians (Latour, 1979). "Knowledge", then, is embodied in a variety of material forms. But where does it come from? The actor-network answer is that it is the end product of a lot of hard work in which heterogeneous bits and pieces -- test tubes, reagents, organisms, skilled hands, scanning electron microscopes, radiation monitors, other scientists, articles, computer terminals, and all the rest -- that would like to make off on their own are juxtaposed into a patterned network which overcomes their resistance. In short, it is a material matter but also a matter of organising (sic) and ordering those materials. So this is the actor-network diagnosis of science: that it is a process of "heterogeneous engineering" in which bits and pieces from the social, the technical, the conceptual and the textual are fitted together, and so converted (or "translated") into a set of equally heterogeneous scientific products.

So much for science. But I have already suggested that science isn't very special. Thus what is true for science is also said to be true for other institutions. Accordingly, the family, the organisation (sic), computing systems, the economy and technologies -- all of social life -- may be similarly pictured. All of these are ordered networks of heterogeneous materials whose resistance has been overcome. This, then, is the crucial analytical move made by actor-network writers: the suggestion that the social is nothing other than patterned networks of heterogeneous materials (Law, 1992).

In ICT enabled CLCs, knowledge creation is a major goal of the participants, and the Actant comprise the actor-network. ANT is applicable to this study because we have actors that are both people as well as technology components. Furthermore, Walsham (1997) writes that ANT treats the social and the technical as inseparable—and argues that people and artifacts should be analyzed with the same conceptual apparatus. Latour gives the rationale for this symmetric treatment between “technical” computer systems and “social” organizations:

It is no longer clear if a computer system is a limited form of organization or if an organization is an expanded form of computer system. Not because, as in the engineering dreams and the sociological nightmares, complete rationalization would have taken place, but because, on the opposite, the two monstrous hybrids are now coextensive (1996, p. 302).

While Latour's preceding observation is more alarming than reassuring, the ICT enabled distributed CLC can be considered a hybrid and the actor-network would include people, organizations, software, computer and communications hardware, and infrastructure standards. ANT is useful to this study because it provides a framework for considering all

the Actant related to the research question: *What can advanced ICT contribute to enhancing learning in distributed Collaborative Learning Communities?*

3.2 Activity Theory

Activity theory is a Soviet socio-cultural approach to describing those processes “that realize a person’s actual life in the objective world by which he is surrounded, his social being in all the richness and variety of its forms”, (Leont’ev, 1977). Leont’ev (1977, 1981) collaborated with Vygotsky (1978) and Luria (1976) on the development of a mechanism to explain human behavior. Both Vygotsky (1978) and Luria (1976) can be credited with some contribution to the activity theory, but Leont’ev takes primary responsibility for its development. The activity theory is widely used in theoretical and applied psychology, in areas such as education, training, ergonomics, and work psychology. Furthermore, “the activity theory emphasizes the importance of a systemic analysis of an organizational setting by considering it as an activity (Boer, Kumar &, van Baalen, 2002, p. 2). We can apply the activity to the distributed collaborative learning community setting which is the knowledge sharing context of the phenomenon under study.

Activity theory is also applied to information systems for user interface design, collaborative work, computer-mediated communication, and theoretical approaches to technology design and evaluation (Nardi, 1996). Nardi wrote that activity theory is

...a powerful and clarifying descriptive tool rather than a strongly predictive theory. The object of activity theory is to understand the unity of consciousness and activity... Activity theorists argue that consciousness is not a set of discrete disembodied cognitive acts (decision making, classification, remembering), and certainly it is not the brain; rather, consciousness is located in everyday practice: you are what you do (1996).

Nardi also argued that "activity theory proposes a strong notion of mediation—all human experience is shaped by the tools and sign systems we use." Furthermore, she identifies "some of the main concerns of activity theory: [as] consciousness, the asymmetrical relation between people and things, and the role of artifacts in everyday life."

Activity theory has also been applied by information systems scholars to problems of learning (Engeström, 1987, 2004), and in particular, the question of how to obtain tacit knowledge, as a key goal of learning. Tacit knowledge acquisition is important to the study of learning in organizations, according to Nonaka (1995). He wrote that tacit knowledge is highly personal and hard to formalize. Because of this, tacit knowledge can be difficult to communicate or share with others. Internalization has become a key term of the theory of tacit knowledge. Vygotsky (1978) described the process of learning as the internal reconstruction of an external operation.

Activity Theory is useful to include in this study's theoretical lens because it suggests that tools or artifacts influence how people interact with their environment. Moreover, the externally manifest involvement of a person with the tools influences their internal being. This helps us describe the process CLC stakeholders experience as they interact with the technological environment to acquire tacit knowledge. For example, the human mind exists, develops and can be understood within the context of meaningful, goal-oriented, and socially determined interaction between human beings and their environment (Bannon, 1997). In a distributed CLC, the interaction between learners and their shared technological artifacts (a.k.a. objects) mediate learning. Bannon notes that the basic principles of activity theory include object-orientedness, internalization and externalization, tool mediation, hierarchical structure of activity, and continuous development.

In the context of Collaborative Learning Communities, this theory indicates that the ICT tools we select to employ in the distributed CLC environment can have a profound effect on the experience of the people involved in the learning activities. When distributed CLC designers select ICT tools, they can be influenced by activity theory to consider that the actual tools in question express the experience of the people who were faced with a problem. This awareness can be applied to the invention or modification of the artifact to make it work better. Experience accumulates in the structure of the tool, and it therefore becomes part of the shared collective history of the distributed CLC. Additionally, the knowledge of how the tool is used is passed from one person to the next during the collaborative activity. This transfer of social history influences both the external behavior of the participants and the internal mental functioning (Bannon, 1997).

Naturally there is a leap to be made from the 1917 Marxist psychologist's activity theory, to developing new understanding of advanced ICT enabled CLCs, but the essential elements do coincide: i.e. technology equals the tools, the collaboration for learning equals the activity, and the creation of knowledge through the activity of learning in a virtual environment produces an internal change in the participants. We will apply activity theory to help answer the research question: *How is technology enabling collaborative learning in learning communities as well as in individuals that belong to that community?*

3.3 Structuration Theory

The Theory of Structuration, developed by Anthony Giddens (1979, 1984), set out to bring together the theoretical divisions between mutually exclusive or contradictory social systems such as agency/structure, subjective/objective, and micro/macro perspectives. All of these examples consider individuals as either acted upon, as elements within a structural context, or as autonomous agents; whereas the structuration approach only focuses on "social practices ordered across space and time" (Giddens, 1979, p. 2). Proponents of structuration theory adopt this balanced position, by attempting to treat influences of structure, including culture and agency, equally. Giddens' theory of structuration is in line with the activity theory since the activity system (the CLC) is

affected by activity systems at other context levels and also exerts influence in a bi-directional manner (Boer, 2002).

Structuration theory does not focus on the individual actor or societal totality. Giddens argues that social structure leads to human action by both enabling and constraining that action. On the other hand, human action leads to social structure by both producing and reproducing itself and its artifacts. Structuration theory provides a theoretical lens into the duality of structure in social interactions, such as collaborative learning. Structuration helps us reconcile two opposing viewpoints of interpretive sociologies where actors are either seen as strong on action but weak on structure, or conversely weak on action but strong on structure (1993). The following table shows the duality of structure in social interaction expressed as the three integral elements of meanings, norms and power:

Table 3 Duality of Structure in Social Interactions

	(Meanings)	(Power)	(Norms)
INTERACTION	Communication	Power	Morality
(MODALITY)	Interpretative scheme	Facility	Norms
STRUCTURE	Signification	Domination	Legitimation

(Source: Giddens, 1993, p. 129)

Modality links action and structure. For example, the action of communication occurs when the actor applies an interpretation schema to signification. The three columns express three integral elements of interaction that bear on the social organization of collaborative learning.

Information technology and organization research has adapted and augmented this theory to study the relationship between technology and social structures. DeSanctis and Poole (1990) borrow from Giddens in order to propose an "adaptive structuration theory" with respect to the emergence and use of group decision support systems. In particular, they use Giddens' notion of "modalities of structuration," how social structures are appropriated into concrete situations, to consider how technology is used. Orlikowski (1992) also relies on Giddens' structuration theory for a critique of the duality of structure to technology: "The duality of technology identifies prior views of technology - as either objective force or as socially constructed product - as a false dichotomy" (p. 406). She compares this to previous models including the technological imperative, strategic choice, and technology as a trigger. Orlikowski (2000) revisits the theory of structuration in order to replace the notion of embedded properties for enactment (Desanctis & Poole, 1990; Orlikowski & Gash, 1994). The practice lens permits the examination of how people, as they interact with a technology in their ongoing practices, enact structures which shape their emergent and situated use of that technology.

Structuration Theory offers a concept of the duality of structure in the ICT enabled CLC. It also provides a deeper understanding of the social structure of CLCs by providing a context for a Social Theory of Learning (Wenger, 1998). Whereas a Social Theory of Learning describes a structure focused on learning as the centerpiece, with elements of community, practice, meaning, and identity forming satellite concepts, structuration

theory (Giddens, 1993), delves deeper into the duality of structure itself, having at its center a cyclical relationship between social structure and human action.

4.0 Concept Map

The concept map in Figure 3 below depicts what we believe is going on with the collaborative learning communities phenomenon under study. The map is intended as a guide or lens for our observation of collaborative learning communities and the role of information and communication technologies in them. Through the concept map and the discussion in this Chapter we are able to formulate a tentative theory of what is happening within the phenomenon. It identifies the system of concepts, theories, relationships, assumptions, expectations, and beliefs that support and inform the study.

The research questions and objectives, described in Chapter 1, provide the reasons for the overall design of the concept map, while the literature and theory reviews, in Chapters 2 and 3, along with conjectures derived from the researcher's own professional experience, help in identifying the relationships between learning, research, ICT, and distributedness.

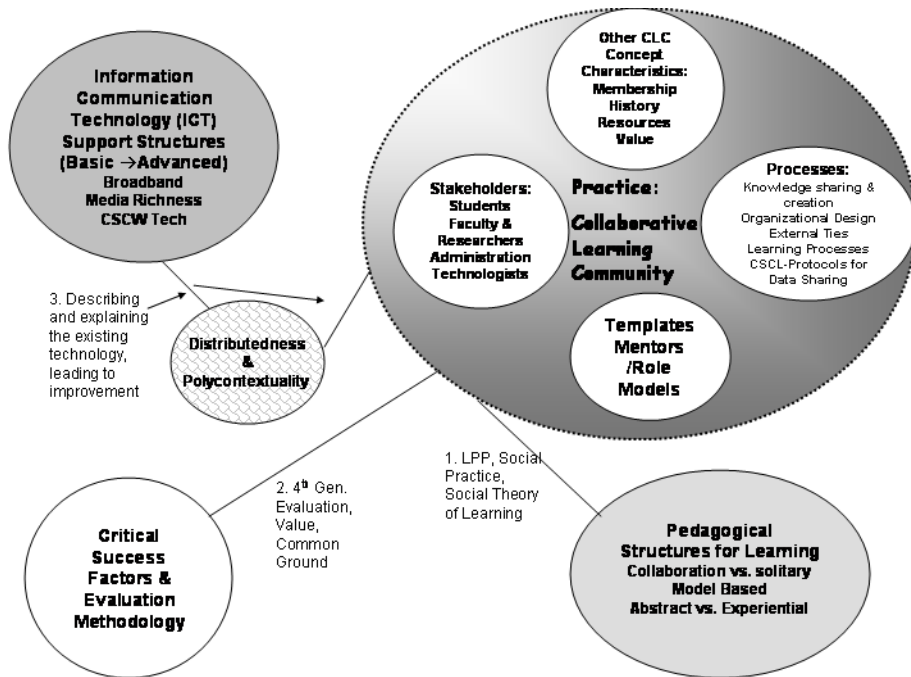


Figure 3 Collaborative Learning Community Mediated by Technology Concept Map

4.1. Concept Map Background Information

The concepts which inform this study are tightly integrated with one another and their

relationship to the research questions. A useful reference for a comprehensive discussion of these concepts is presented in Chapter 2, Table 1. The literature is limited about how ICT enables distributed CLCs. However, the literature on Communities of Practice (CoP) addresses the role of ICT more broadly. As a result, we find the literature on CoP ICT concepts applicable, but often not directly applied to the literature on CLCs. This study seeks to bridge the gap between the available literature that addresses the more general concept of the role of ICT in communities of practice and specifically addresses the role of ICT in collaborative learning communities.

4.1.1 Unit of Analysis

This research has two levels of analysis. One is the community itself, and the other is the individual learner imbedded in the community. On the first level, the basic unit of analysis is the collaborative learning community made up of a number of smaller groups and individuals. Activity theory informs the description of the unit of analysis for this study, providing a framework to avoid simple explanations of the CLC phenomenon including knowledge sharing. This is done by describing the organizational setting of the CLC, “as an ensemble of multiple systematically interacting elements” (Boer, 2002, p.2). Therefore, on the second level, the basic observable entity being analyzed by this study and for which data are collected, are the individual stakeholder activities in the CLC. So, in the case study, the unit of analysis is a single person (a.k.a. learner), including students, faculty, administrators, and technologists acting in the CLC.

4.2 Concept List

Table 4 lists the concepts that make up the context map. They were derived from Table 1 and Table 2 (Chapter 2), and as the theoretical underpinnings of the research described in Chapter 3:

Table 4 List of Concepts from the Concept Map

Concepts & Connectors	Description (organized clockwise on the concept map)
Practice: Collaborative Learning Community (CLC)	A subset of the Community of Practice (CoP) concept. Within the Community we have a number of underlying concepts that describe the CLC specifically.
Practice	Describes a set of socially defined ways of doing things and heuristics within the specific domain of our interest, the ICT enabled CLC,.
Processes	There a number of processes that work together to contribute to the phenomenon of interest, which include: <ul style="list-style-type: none"> • Knowledge sharing, knowledge creation and a design for learning, as a result of CLC membership interaction between competence and experience. The activity theory approach (Boer, 2002) for studying these processes is one of the key influences for the research framework.

	<ul style="list-style-type: none"> • Organizational design, such as legitimate peripheral participation and fostering a social fabric of learning. • External ties within and between other organizations, which are also described as constellations of practice. • Learning processes comprised of meaning, practice, community and identity. • Computer supported collaborative learning overlapping with the broader concepts of information communication technology and computer supported collaborative teams. • Protocols for data sharing.
Templates	Models that we rely on to demonstrate ways of building and sustaining the CLC.
Mentors/ Role Models	The roles of the actors in the phenomenon can be viewed on a continuum beginning with the novice learner and progressing to the master facilitator. Within this concept one can also imagine a wrapping around of the continuum whereby the master is also the learner by interacting in the CLC.
Stakeholders	These represent the students, faculty, researchers, administrators, and technologists that make up the CLC. Each role both contributes to the CLC and derives benefit by participation. (Related to Mentors, Role Models, and Value concepts).
Other CLC Concept Characteristics	
Membership	This concept covers a discussion of what CoP membership means and the criteria of belonging to a community.
History	The concept of history as viewed through a historical theory of social practice as it relates to learning, where activity within the CLC creates the historical development. Think of learning as the historical production, transformation, and change in people.
Resources	This concept includes both the human and inanimate artifacts that interact to create the means to learning and access in an ICT enabled distributed CLC.
Value	This concept relies on the notion of common ground among the members whereby they feel connected and see value in their mutual engagement.
Connectors: CLC ↔ Pedagogical Structures	
	Legitimate Peripheral Participation. Social structure, including a theory of social practice emphasizing interdependency of agent and work.

Pedagogical Structures for Learning	A Social Theory of Learning. Contrast between a learning curriculum (collaborative, experiential model) versus teaching curriculum (solitary, abstract model). Situated learning including knowledge sharing activities within and between the different CLC organizational entities.
Connectors: CLC ↔ Critical Success Factors	
4th Generation Evaluation Common Ground	Provides a theoretical and practical grounding for the research methodology. The ICT Definitions Map (See Section 4.3, Figures 4 & 5) is used to provide common ground between the researcher and the informants.
Critical Success Factors	Table 2 (see Section 2.3.2) is derived from a Group Support Software (GSS) study. The success factors identified will be adapted to the CLC evaluation in Chapter 7.
Evaluation Methodology	This concept represents a synthesis of information systems and educational evaluation approaches (see Section 2.4).
Distributedness	Distance attributes (culture, time zones, geography, and language) affect how humans interact with each other.
Polycontextuality	Polycontextuality occurs in a distributed environment. It presents a challenge to bridge multiple communities or contexts. In a CLC there are many constellations representing multiple CoPs, and the stakeholders approach their membership in the CLC from multiple contexts.
ICT Support Structures	Because technology is a key element of this research we highlight this structure concept so we can investigate it thoroughly. Technology collaboration research and artifacts from ICT, CSCW and CSCL are of interest. More importantly the continuum from no or low basic technology to advanced technology with regard to ICT's role in enabling distributed CLCs is of primary interest.

4.3 ICT Cyberinfrastructure Map

The following figures depict the continuum of ICT in two different formats. The matrix is used in the case study data collection process described in Chapters 6 and 7 to communicate the definition to the informants. The figure was developed to provide a means of determining common ground between the researcher and the informants regarding the definition of ICT. Please see Appendix D for a complete description of the map's development.

Advanced Technology



Collaborative and Immersive media rich environments (Access Grid, Immersadesk, CAVE), Grid-enabled Collaboratories, web-based collaborative environments



Internet (2+) Networking (including optical, wireless, ubiquitous)

Services (education, training, consulting, user assistance)



Software (operating systems, middleware, domain specific tools/platforms for building applications)



Digital libraries/data bases
Sensors/effectors



Mass storage (disk drives, tapes, ...) and persistence



Computational engines (supercomputers, clusters, workstations – capability and capacity)



Internet (1), Cellular Technologies, Video Conferencing via the Internet, broadband, the Web

Phone, Fax



No Technology



Figure 4 ICT Cyberinfrastructure Map (Front)

Information Communication Technology (ICT) / Cyberinfrastructure Map

	Physical Layer	Logical Layer	Collaborative & Learning Technologies	Content Layer
Advanced		Internet2, IPv6, Multi-cast, Software (operating systems, middleware, domain specific tools/platforms for building applications)	Collaborative and Immersive media rich environments (Access Grid, Immersadesk, CAVE), Grid-enabled Collaboratories, web-based collaborative environments	Re-usable learning objects
Mid-Range	Cellular Technologies, broadband, Satellite, Fiber Networks, Computational engines (supercomputers, clusters, workstations – capability and capacity)	Internet (1), TCP/IP, The Web	FELIX, Web-CT, Centra, Blackboard, etc, CSCW technologies, Video Conferencing via the Internet, Services (education, training, consulting, user assistance)	Digital libraries/data bases Sensors/effectors
Low Tech/ No Tech	Twisted-pair networks, Frame Relay, telephone, Fax, telegraph	PBX, POTS	Meetings, Mail	Paper based books, journals, etc.

Figure 5 ICT Cyberinfrastructure Map (Back)

4.4 Concept Propositions

The following propositions were used to guide the research methodology decisions that follow in Section 5.3 **Research Methods**. They provide a bridge between the earlier introduction, literature, and theory reviews and the following case study design, analysis, and conclusions which follow. Moving clockwise around the concept map, each proposition corresponds to the connector between concepts.

1. The map reflects the specific boundaries in which the research will take place. We construct the activity system from a birds eye view and at the same time identify stakeholders in order to view the CLC activity through their eyes. We have identified a unique single case study of the Fielding Graduate University PhD programs as the specific Collaborative Learning Community to be involved in this research. Within that community we further stratify, based on programmatic criteria. This proposition corresponds to the connector between the Practice and the Pedagogical Structures for Learning. Notions of legitimate peripheral participation, social practice, and a Social Theory of Learning apply. Social variables may express themselves in terms of learning styles. The theories and

literature on culture in a virtual organization seem to indicate that we will not bridge the differences, but we will learn how to manage them. The empirical data can be used to contribute further understanding to this perception.

2. Evaluation and assessment are important factors within the study and the information systems practice. The Fourth Generation Evaluation methodology (Guba & Lincoln, 1989) serves as an established approach and guide to the case study research. Additionally we acknowledge that establishing common ground between the researcher and informants in the study will contribute to the critical success of the CLC. This proposition corresponds to the connector between the Practice and the Critical Success Factors.
3. Describing and explaining the existing technology should take us to a point where we are able to suggest improvements to advanced ICT Collaborative Learning Communities. Our goal is to be able to suggest improvements and describe future work that can test these suggestions through implementation. This proposition corresponds to the connectors between the Practice, Distributedness, and ICT Support Structures.

4.5 Concept Map Concluding Remarks

During the course of the study, adjustments to the above concept map were made in order to understand it more completely. After this map was created several questions remained that could only be answered in the design of the research. Additionally, through the course of doing the empirical research, revisions of the concept map suggested themselves. These will be reflected in Chapter 7 with the analysis of the empirical data. Therefore this is the first pass, or in other words: it is the theoretical lens that provided a first look at the situation of ICT enabled distributed CLCs. As the data was collected in the Fielding case study, the real world situation provided input for revisions to the theoretical lens into a concept map. The concepts that relate directly to the research questions are appropriate, whereas the broader or tangential concepts are moved to the periphery or drop out altogether for the purpose of this research.

5.0 Research Approach

This chapter identifies our research stance and describes the research methods employed in this research. Section 5.1 explains how observation and investigation support the Interpretivist research stance as the appropriate choice for this study. In Section 5.2 we review the research design followed by the research methods in Section 5.3. Section 5.4 discusses the data collection method for the study. Included in this section are the units of observation and analysis, the criteria used to select these units, the data collection protocol and the plan for recording the data. Section 5.5 describes the analysis plan as well as the validity and reliability of both the data and the analysis. Section 5.6 sums up this chapter and leads us to Chapter 6, recounting the Fielding Graduate University case study.

5.1 Observer-Investigative Research Stance

Recently, the information systems research community has gradually begun to accept an interpretive epistemological stance (Orlikowski, 1991; Weber, 2004) as compared to the traditional, overwhelmingly positivist epistemological stance for research. There is a realization within the social science community that both of these stances have their virtues, and can sometimes be combined (Lee, 1991; Orlikowski, 1991; Weber, 2004). The debate between these two research stances is even considered irrelevant by portions of the community. For example, Weber (2004) wrote that the time had come to relegate the rhetoric of positivism versus interpretivism to the scrap heap since it did not serve a useful purpose. In agreement with this point of view, it is not our purpose to debate which approach is more meritorious, but only to justify our choice for this study.

Interpretive research methods adopt the position that the knowledge of reality is a social construction by human actors (Walsham, 1995). This tradition of research considers that the observer (researcher) and the observed (the phenomenon or situation under study) cannot be separated if one were to acquire a fuller understanding of the phenomenon. The interpretation of the phenomenon and behavior of the actors in a given context is essential (Weber, 2004).

In contrast, the positivist tradition of research supposes that the subject (the researcher) and the object of research (the phenomenon or situation under study) are two separate things, and it is possible to objectively acquire an understanding of the phenomenon without getting involved in it (Weber, 2004). Positivist research is based on the existence of a deducible fixed relationship within a phenomenon and serves primarily to test a theory to increase predictive understanding of the phenomenon (Orlikowski, 1991).

The interpretive epistemology involves subjective understanding and interpretive analysis of a situation or phenomenon, and draws from phenomenological sociology, hermeneutics, ethnography, and participant-observation. Whereas the positivist approach consists of theoretical propositions, rules of formal logic, and rules of deductive logic. Both stances can complement each other (Lee, 1991). Qualitative data is "a source of

well-grounded, rich descriptions and explanations of processes in identifiable local context” (Miles & Huberman, 1994, pp. 1).

It is generally believed that interpretive approaches help uncover a deeper structure of the phenomenon or the process under study (Orlikowski, 1991). By assuming an interpretive epistemological research stance, this research can focus on how individual CLC stakeholders and the community as a whole view and understand the world and construct meaning out of their experiences. Qualitative research is essentially narrative-oriented, able to accommodate the rich data collection that supports it, and is consistent with this stance. Furthermore, the factors that govern interpretive research are necessary to answer the research questions posed. With a deeper understanding of the structure of the phenomenon, which will be possible only when the phenomenon is understood and interpreted in the social context in which it takes place, will theoretical and practical answers be found. Thus, for developing a plausible and rigorous theory, an interpretive stance seems appropriate.

It is through the use of qualitative methods that we are able to use the research questions as the driver to formulate appropriate related questions for the interview process. Thus, we build an understanding of ICT enabled distributed CLCs. Interpretivism provides the overall shape of the research design, data collection and analysis. By following qualitative analysis guidelines (Miles & Huberman, 1994; Maxwell, 1996), the rich data collected and analyzed will inform back into answers to our the research questions.

5.2 Research Design

Taking into account the conceptual framework discussed in Chapter 4, this research design is concerned with both describing and explaining the phenomenon of ICT enabled Collaborative Learning Communities. The Research Design figure below depicts the research design relationships. It provides a graphical expression of the research purpose, conceptual context, primary research questions (see Chapter 1 for the detailed list of sub-questions), and our concern with a methodology to investigate these questions. Finally, we show the connection to employing safeguards to validate the data collection, analysis, and conclusions from the case study.

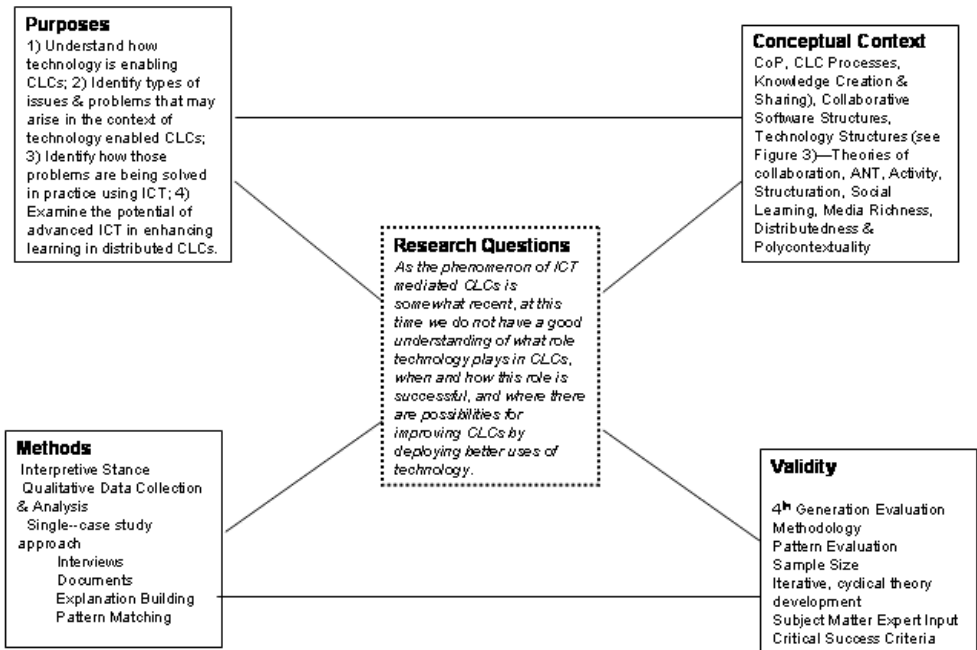


Figure 6 Research Design (Adapted from Maxwell, 1996, p. 5)

5.3 Research Methods

In general, case studies are the preferred strategy when "how" or "why" questions are being posed, when the investigator has little control over events, and when the focus is on a contemporary phenomenon within some real-life context (Yin, 1994). Such explanatory case studies can also be complemented by two other types of case studies -- exploratory and descriptive. The case study method was selected because we are posing "how" and "why" questions, we seek to describe and explain the phenomenon, and we are using an exploratory (Observation and Investigation) Interpretive stance.

Case studies have been increasingly used as a research tool (Hamel, 1992; Perry & Kraemer, 1986). The easy to follow table below describes the three conditions that provide general help for choosing the research approach, including: (a) the type of research question posed, (b) the extent of control an investigator has over actual behavioral events, and (c) the degree of focus on contemporary as opposed to historical events:

Table 5 Research Methods Selection Table

Strategy	Form of Research Question	Requires Control of Behavioral Events?	Focuses on Contemporary Events?
Experiment	how, why?	Yes	Yes
Survey	who, what, where, how many, how much?	No	Yes
Archival analysis	who, what, where, how many, how much?	No	Yes/No
History	how, why?	No	No
Case Study	how, why?	No	Yes

(Source: Yin, 1994, p. 5, unmodified)

The “how” and “why” research questions are likely to lead to the use of case studies, histories, and experiments according to the table above. Furthermore, the case study is preferred when investigating a contemporary phenomenon when the events cannot be manipulated. Specifically the requirement of our research questions, where there is limited or no control of behavioral events and the focus is on the contemporary event phenomenon of distributed CLCs enabled by ICT, leads to the decision to employ a case study methodology.

The case study methodology provides a unique way to deal with a variety of evidence—documents, artifacts, interviews, and observations (Yin, 1994). With careful planning and following systematic procedures the case study offers a rigorous approach. Additionally, it can provide a basis for scientific experiments in the same way that a single experiment is generalizable (Yin, 1994). The following passage from Yin (1994) makes this argument and it is presented here because it is a goal of this research to make the same transition to generalization to theory in the concluding Chapter 8:

Case studies, like experiments, are generalizable to theoretical propositions and not to populations or universes. In this sense, the case study, like the experiment, does not represent a “sample,” and in doing a case study your goal will be to expand and generalize theories (analytic generalization) and not to enumerate frequencies (statistical generalization). Or, as three notable social scientists describe in their *single* case study done years ago, the goal is to do a “generalizing” and not a “particularizing” analysis (Lipset, Trow & Coleman, 1956, pp. 419-420, as cited in Yin, 1994, pp. 10-11).

We believe that studying the phenomenon in the context of a distributed ICT enabled CLC is pertinent to answering the research questions. Because the phenomenon and context are not always distinguishable in real-life situations, the case study inquiry allows us to address all of the technical characteristics that arise, including data collection and data analysis strategies. To summarize, a case study research approach provides an

overarching method—covering the logic of design, data collection techniques, and specific approaches to data analysis (Yin, 1994).

With the selection of the case study methodology described above, we can now focus on the decision to perform a single— rather than a multiple—case study approach. The rationale is that the Fielding Graduate University case represents a *unique* case (Yin, 1994). It is the only fully distributed graduate education program focused on the social sciences that has been in operation for over three decades. Another applicable rationale for choosing a single—case study approach is a *revelatory* case when, “the investigator has access to a situation previously inaccessible to scientific observation” (Yin, 1994, p. 43). Fielding is a revelatory case because this is the first time that access has been granted to investigate the role of ICT on this distributed CLC. Based on these two rationales, Fielding Graduate University meets the criteria of a single—case study. While only one rationale is needed to justify the single—case study approach, Fielding provides two compelling reasons to proceed: reasons that stand to mitigate any concerns with single—case studies. Furthermore, we can further acknowledge that due to the multiple stakeholder concerns documented in Section 1.5.1, we can recognize this research approach contains an embedded design within the single—case study. In Section 4.1.1 we saw how there were two levels of analysis. The CLC represents the larger context. Each stakeholder group member of the CLC represents an embedded unit of analysis of the CLC. This aspect is handled below in both the data collection process, as well as the analysis.

5.4 Data Collection

5.4.1 Decisions about data collection

As noted above in the research methods discussion, we have created a table to map the initial research questions to our sampling decisions, and from there to determine the data collection methods as well as the analysis methods. This section will discuss, in detail, these data collection method decisions after reviewing the sampling decisions. Following this, in Section 5.5, we will delve into the analysis plan.

5.4.1.1 Questions and Methods Matrix

Table 2 provides a path to move from Figure 1, presented above, to the actual execution of the case study data collection and analysis. The research questions are mapped into interview questions paying close attention to understanding the technology support processes at Fielding. The elements are discussed in further detail in the following table.

c.1. What are the facilitators or enablers of collaborative learning? (Institutions, protocols, trust/ social capital.	IQ: 1) How does Fielding enable collaborative learning? 2) When did you begin to understand and trust these methods?		
c.2. What are the inhibitors? (environment [lack of structure]distance, time, etc)	IQ: Is there anything you would change or improve about the Fielding collaborative learning environment?	Follow-up: How do collaborative technologies help you in your program?	Refer to the handout and point to the CSCW examples on the map.
d. How does distance effect this process?	IQ: How does your geographical location impact your learning process with Fielding?		
e. How is ICT at present reducing the affect of distance?	IQ: Which ICTs help to reduce the affect of distance on your PhD program?		
f. What are the current short-comings of ICT in reducing the affect of distance?	IQ: What are the current short-comings of ICT in reducing the affect of distance?		
g. What can we propose in terms of usage of ICT to reduce the remaining affects of distance? It is a question of degree. ICT is a moving (changing) target.	IQ: If you could design an ideal ICT environment to aid your collaborative learning for your PhD, what would it look like?		
	How do you contract (student / faculty) on a knowledge area?	This is not directly tied to a research question, but may lead to interesting discovery.	

The table above provides systematic links between the research questions and the questions formulated to interview case study informants. There may be no way to logically or mechanically convert each research question into method (Maxwell, 1996), but this matrix helps us with the links we need by using a systematic approach. The research questions pose what we want to understand about collaborative learning mediated by technology and distance, and the interview questions are what we asked the stakeholders in order to gain that understanding. As such, the interview questions are far more context-specific and diverse than the broad, general research questions.

In addition to asking these questions, a decision was made to disclose the research questions to the informants as a method of establishing trust and conveying a genuine interest in their answers. Care was taken to avoid asking contrived questions designed to elicit certain answers. We did, however, attempt to anticipate the information we would actually be able to collect in the Fielding winter session setting, using interviewing techniques such as observation during and after the interviews, since they were videotaped.

By relying on the literature review in Chapters 2 and 3 as well as previous interviewing experience, it was expected that revisions to the interview questions above could occur during the actual data taking process to better tailor the interviewing techniques to the

setting, informants and research goals. This did in fact occur, and the refined interview question guide is available for reference in Appendix D.

5.4.2 Sampling – Data Sources, Places, Persons, Times

“As much as you may want to, you cannot study everyone everywhere doing everything,” (Miles & Huberman, 1994, p. 27). In this section we explain the decisions made about sampling, including where and when to sample (Fielding winter session in January, 2005), who to sample (Psychology and Human & Organizational Development PhD students in their second year and close to completion, associated faculty, and administrators; consider an alumni email survey as a follow-on sampling), and what to sample.

Following guidelines available from Miles and Huberman we were able to think in sampling-frame terms to develop a methodical plan. In other words, thinking about why the informant(s) selected for the case study are appropriate, and categorizing the kind of informant they are, as well as if they need to be balanced with other kinds of informants is “a good, bias-controlling exercise” (Miles & Huberman, 1994). Additionally, consideration into the sampling settings, events and processes influenced the decisions discussed below. Finally, the sampling parameters were compatible with the research questions.

Qualitative research uses neither probability sampling nor convenience sampling, but instead uses purposeful sampling, “a strategy where particular parameters such as informants, settings, or events are selected deliberately in order to provide important information that can’t be gotten as well from other choices” (Maxwell, 1996). The Fielding sample size represents a large, somewhat random sample, selected from a total population of over 800 current PhD students of Psychology and Human & Organization Development, which are the only PhD programs offered at the University.

5.4.2.1 Fielding Case Study Possible Purposeful Sampling Approaches

Maxwell (1996, pp. 70-72) suggests four approaches to selecting respondents in a case study: 1) randomization; 2) deliberate selection of typical individuals; 3) deliberate selection of a variety of types within the population; and 4) deliberate selection to study comparison between individuals in the population. We reviewed these four different approaches to either combine or reject them for our purposeful sampling of the Fielding informants. Each of these approaches and our sampling decisions are discussed in this section.

In this case study the first approach incorporated some randomization, since we expected to have more volunteers than we could possibly interview in the setting window. This is considered a random approach, but it does contain an element of self-selection of informants that are willing to participate for a variety of personal reasons. Fortunately, our institutional liaison publicized the research study and coordinated the informants’ schedule. This approach also respected the Informed Consent process (see Appendix C).

This qualified random sample was partially directed to include the unique points of view of Fielding administrative, executive, and technology support personnel, which would not have otherwise been represented. The third approach of deliberately selecting a variety of respondents was combined with the random sampling.

The second approach, of deliberately selecting individuals that are known to be typical and relatively homogenous to insure confidence that the study conclusions represent the average members of the Fielding PhD population, would only have worked if there was consensus between the investigator and the sponsor that Fielding does have an average PhD student demographic. In fact it was agreed that such a homogenous description could not be identified, although our demographic data sampling, provided in Chapter 6, does allow for new conclusions to be drawn on this account.

The third approach, a deliberate selection of a variety of respondents, was used to achieve the opposite effect of approach two, or to capture the heterogeneity of the population. This approach was used to insure that the results of the study represented the range of variation of the participant population, otherwise known as maximum variation sampling (Guba & Lincoln, 1989, Miles & Huberman, 1994). To do heterogeneous sampling we defined the dimensions of variation in the Fielding PhD population that was most relevant to the study and then systematically selected individuals, times and settings that represented this range. Heterogeneity was expressed in the variations in age, sex, ethnicity, geographical locations, profession, and educational background of the informants. At first, this approach appeared not to be practical, because of the investigator's limited access in advance to the population of interest. However, it proved to work out quite well due to the cooperation of institutional liaison, as well as the willingness of the various stakeholder informants.

Finally, the fourth approach of purposely selecting a sample "to establish particular comparisons to illuminate the reasons for differences between settings or individuals" (Maxwell, 1996), was rejected in favor of approaches one and three. While Maxwell notes that such comparisons are less common in qualitative than in quantitative analysis, the use of a control group has a long and respected history in anthropology and is common in multi-case qualitative studies. Since this is a single—case study it does not lend itself to this approach, however, it could be considered for future work in this area. Selecting a combination of purposely sampling according to approaches one and three for the case study, mitigated tradeoffs between a completely random sampling that risked not getting the full range of defined stakeholder perspectives and a study that insured heterogeneity of the population. It allowed us to get a generalized view of the ICT enabled distributed Fielding PhD collaborative learning experience.

5.4.2.2 Decisions about Sampling

Taking into consideration the sections above, these are the decisions made about the data sampling for the case study:

Where: Fielding Graduate University

When: Winter Session, Jan 13 - 18, 2005

Who: Students, faculty, administrators, and technology support personnel

What: The relationship between collaborative learning and ICT questions, as well as demographic data, collected through personal resumes or curriculum vitae of the participants in the study.

The data collection formats included a written questionnaire (see Appendix D) that was used by the researcher as a guide for the live half hour interviews with the Fielding stakeholder sample, including students, faculty, administrators, and technology support professionals. All interviews were video taped using digital media and transferred immediately to DVD for analysis and transcription. As a backup, audio recordings of the interviews were also made, to insure that no data was lost due to problems with the video technology. Through the use of the Informed Consent process, the researcher had the option to return to the subject population via telephone interview or email survey. Once we have described the context at Fielding in Chapter 6, we will provide further details about sampling in Section 6.3.

5.4.3 Triangulation of Data Collection Methods

Triangulation is the principle of collecting information from a diverse range of individuals and sources, using a variety of methods (Denzin & Lincoln, 2000) to reduce the risk of the study conclusions reflecting systematic biases or the limitations of a specific method (Maxwell, 1996). Triangulation allows the study to express a better assessment of the validity and generality of a theory developed from the data. For example, data was collected on both audio and video digital tape, thus enabling observation of the informants' body language and voice inflexions. A thirty-minute video interview of each informant was recorded in its entirety. Aside from the actual digital media documentation, working notes were made on the printed sheets of the individual interview. Nevertheless, the primary data sources were the interviews, first written up as transcripts and then transferred to contact sheets. Triangulation occurs in the analysis in Chapter 7 through the confirmation of multiple interviews with one another. The transition of the data from the transcripts to the contact sheets was done using a coding algorithm. This allowed us to identify the type of stakeholder from the interview data, in the form of quotations. This procedure was used to insure strict adherence to the guidelines of the Interview Review Board (IRB) and the Informed Consent agreement.

Specifically we observed: 1) comfort level of each informant in the interview environment, allowing for adjustments to physical and verbal cues from the investigator; and 2) eye contact to gauge the level of understanding by the informant to the questions, allowing for adjustments to support a phenomenological approach. These observations occurred during the real interview situation. The video tapes enabled us to review the interviews daily and draw inferences about the meaning and point-of-view of the informant that might not have been revealed by analyzing only the transcribed interview

data after the conclusion of the data collection phase. So, the use of observation, coupled with interview data and analysis, provides a means of triangulating.

The interview methods drew on questions that asked about specific occurrences in the Fielding PhD curriculum and cohort interactions since we were interested in drawing conclusions based on specific events and actions. We also guarded against posing questions that only allowed for a generalized answer as a possibility. Triangulation of observations and interviews offered the opportunity of a more complete and accurate picture of the phenomena than either a focus on specific events or actions could alone (Maxwell, 1996).

5.5 Data Analysis and Validity

Chapters 2 and 3 lay the groundwork for the analysis presented in Chapter 7. This section benefits from the prior development of the theoretical lens and the propositions in Chapter 4 as well, which guide both the data collection and analysis. Section 5.5.1 describes the data analysis, while Section 5.5.2 provides the means by which we ensure the validity and reliability of the data and the analysis.

5.5.1 Data Analysis

In Section 5.3 above we explained and justified the single—case study research design and mentioned that our case study has more than one unit of analysis. Now let us explain this feature in more detail, as it bears on the analysis of the data collection. Within the Fielding case, attention was given to the overall scholar/practitioner distributed learning model, as well as to the stakeholder sub-units including the administration, faculty, students, and technology researchers. There is a recognized pitfall with the embedded single—case study, which is to only focus on the sub-unit or stakeholder level, and to lose sight of the larger unit, in our case, the Fielding construct (Yin, 1994). By recognizing this pitfall it was possible to mitigate it by returning to Fielding as a whole during the analysis in Chapter 7. Furthermore, the sub-units of analysis can add, “significant opportunities for extensive analysis, enhancing the insights into the single case” (Yin, 1994). In the following sections we establish the analysis structure to take advantage of those opportunities.

During a two-week period in January 2005, time was built into the data collection schedule to begin analysis, rather than letting everything pile up, finishing collection, and then starting analysis. This was a very arduous compressed schedule corresponding to the Fielding winter session. We built in half- to one-hour intervals between each interview during the day for reflection and modification, following the phenomenological technique. More time was allotted between the last interview of the day and the evening break for this practice. The items which follow also serve to structure Chapter 7, which is concerned with the data analysis.

This interactive phenomenological approach (Maxwell, 1996) was useful in insuring continuity of approach and purpose throughout the case study process. The following

four points were considered to optimize the data analysis phase of the study during the data collection process, including: 1) data charting 2) interview note review; 3) tentative ideas about categories and relationships; and 4) cost benefit analysis of using software for qualitative data analysis. Sections 5.5.1.1 through 5.5.1.4 discuss each of these points in more detail.

5.5.1.1 Data Charting

Attempts were made to try to chart interview data each day on an MS-Excel spreadsheet. The data tracked did not include the actual interview quotes that appear in Chapter 7, which were drawn from the contact sheets. It did include program information about each informant, such as their stakeholder position(s) at Fielding, their period of association at Fielding (e.g. second year PhD student; doctoral candidate; faculty program; administrative position; or technological support role). This preliminary data charting insured that all stakeholder communities were sampled as planned. Adjustments were made during the data collection to add or substitute informants as needed to achieve our sampling goals, based on this charting. The chart samples are not included in the appendices because they contain informant's names and personal data and this information cannot be made available according to the stipulation of the Informed Consent form.

5.5.1.2 Interview Note Review

Interview notes were reviewed each day in order to refine the interview techniques. The following two examples illustrate this practice (see Appendix D: Interview Questions Guide for a complete list of questions).

First, before the interviews commenced, we had written these questions to begin:

- 1.) How does ICT enable collaborative learning?

Then, we revised the questions after the first couple of interviews so that they began with:

- 1.1) How does FELIX support learning individually and with others?

We then followed up this question to determine the various aspects of learning with others:

- 1.2) To what extent do you:
 - 1.2.a. Share literature?
 - 1.2.b. Discuss literature you have read?
 - 1.2.c. Share data?
 - 1.2.d. Review each other's work?

Another example of this refinement of the interview questions was applied to the fifth question in the series:

5.1) What activities do you do with other PhD students?
and the sub-questions:

5.1.a) How does Fielding encourage collaboration? and

5.1.F.2) Do you feel that there is anything in Fielding policy or operation that discourages collaborative learning?

We found that the questions after this were not necessary because the information then flowed naturally from these initial questions. Therefore, we cut three questions specifically asking what, how and where activities took place between PhD students and faculty.

We were able to move directly on to question **5.5)**. This change put the informants more at ease because the interview style was more phenomenological and less structured, which was our intention so as to collect rich description. Previous interview experience with the research interview process was useful background for refining the interview technique and following the research design outline. Furthermore, as the interviews progressed it was possible to further hone the questions as well as the meaning, from the observer-investigator research perspective.

5.5.1.3 Ideas about Categories and Relationships

We took notes about the interviews to develop ideas about categories and relationships in the tradition of grounded theory work. We set up the analysis in Chapter 7 to include the following steps:

- Informal memos were written to self during the data gathering process to exercise analytic thinking about the data and stimulate analytic insights.
- We gave consideration to a database formation approach (Yin, 1994), linking the memos and codes developed to identify the stakeholder category without having to refer to them by given name, which would have violated the IRB and Informed Consent agreement.
- Contextualizing the data: we established links between individual whole interviews and the Fielding programs, administrative structures, and technology support environments, especially The Fielding Education Link and Information Exchange (FELIX). FELIX provides the website environments for seminars, forums, e-mail and other formal and informal learning activities.
- We displayed the data in the form of one Contact Sheet per interview, together with a compilation of data from individual questions. This technique parallels the memos in the first step since both make ideas and analysis visible and permanent, and facilitate thinking about relationships. Table 2 shows how each interview question and method relates to the research questions and goals. This was done as a systematic method of linking questions and data analysis. Chapter 7 provides a

detailed discussion of our findings in this format. Additionally, Appendix E contains all of the Contact Sheets, representing the case study database. We do not provide the spreadsheet which cross-references the actual names and positions of the informants to the alias codes we assigned. We do, however, provide a description of how those alias codes are constructed. The codes are used as the reference to each quote in Chapter 7.

5.5.1.4 Qualitative Analysis Software

A decision was made to review the costs and benefits of employing qualitative analysis software for working with transcripts such as NVivo or NUD*IST. We decided that although the cost of the software itself was reasonable, the data collection was ultimately manageable using standard MS-Office tools for our particular single—case study. Managing large data collections is one of the primary reasons to use the software, but our data collection size did not warrant such a use.

5.5.2 Validity

The validity of the study was a goal that remained prominent throughout the research design and execution phases. Section 5.5.1 describes a structures process at the sub-unit level with inferences drawn back up to the community of practice level of the Fielding CLC. We were able to do this by using the scholar/practitioner approach to collecting data as a researcher/observer, and then categorizing the collection as it applied directly to answering our research questions. This effort guarded against study results that only applied at the sub-unit, or individual stakeholder level.

Maxwell (1996) identifies four general types of threat to validity in any qualitative research studies: (1) description; (2) interpretation; (3) theory, and (4) generalization. Additionally, Yin (1994) says:

Because a research design is supposed to represent a logical set of statements, you also can judge the quality of any given design according to certain logical tests to establish the quality of the case study research. Four tests...have been commonly used to establish the quality of any empirical social research. (pp. 33-37)

These tests are: 1) construct validity; 2) internal validity; 3) external validity; and 4) reliability. The threats and tests listed above were taken into account in the research design for the Fielding case study and are discussed in greater detail in Sections 5.5.2.1 through 5.5.2.4, this is organized by potential threat and then interwoven with the test elements to mitigate these threats.

5.5.2.1 Description

Inaccuracy or incompleteness of the data could threaten the acceptance of the descriptions of what is seen and heard during the interview process (Maxwell, 1996). Audio and video recordings of interviews, together with observations and verbatim

transcription of the recordings largely solve this problem. Additionally, the observational notes, that were not digitally recorded, are detailed, concrete, and chronological. The test of construct validity was applied during the data collection phase by using multiple sources of information, employing a protocol to carefully label the interviews on both video tape labels, digital audio recordings and external written and spreadsheet documentation. We can also apply a test of reliability (Yin, 1994) by noting that a structured case study protocol is available, as well as the development of a case study database in the form of Contact Sheets (see Appendix E) to contain the documentation from the case study.

5.5.2.2 Interpretation

Here the threat to validity is in imposing our own framework or meaning instead of understanding the perspective of the people studied and the meanings they attach to their words and actions (Maxwell, 1996). To avoid imposing a biased theoretical lens (see Chapter 4) on the participants' responses, care was taken during the interview process to "seriously and systematically" (Maxwell, 1996) learn how they make sense of what was going on and not categorize the informant's responses solely on the research design structure described in Section 5.2.

Within our analysis strategy we employ the concept of member checks through the mechanism of the Informed Consent process noted above in Section 5.4.2.1. The Informed Consent form insured a method of systematically soliciting feedback about data and conclusions from the informants in the study. The Informed Consent process insured privacy for the informants, freeing them to speak candidly and without fear of reprisal or criticism from the University, or any outside observers. It also alleviated any false expectations on the part of the informants that they would be able to review or alter, prior to publication, the interpretation of the study and understanding of the data. These tests of internal validity help to counter any threat to the interpretation of the data and are employed in the data analysis in Chapter 7, by pattern matching, explanation building, addressing rival explanations, and using logic models (Yin, 1994).

5.5.2.3 Theory

Discrepant data may be a threat to theoretical validity if we did not pay attention to it. We did encounter some minority opinions that went against the majority of information in the data collection. We handled this discrepant data by reporting it and then either accommodating or refuting its validity through consideration of alternative explanations or understandings, as suggested by Maxwell (1996).

5.5.2.4 Generalization

Because we are using a qualitative research design to study a single setting (i.e. Fielding) with a relatively small number of individuals using purposeful rather than probability sampling, any generalized claims might be considered more appropriately internal than

external. In other words, it could be expected that the sample included in the case study should generalize to the population of Fielding PhD students, faculty, administrators and technologists. It might not be expected that the case study would reflect an external generalization to all populations of PhD students participating in an ICT enabled distributed collaborative learning environment.

Furthermore, while generalizability is known to be a major concern to researchers, and statistical sampling-based generalizability is accepted practice, methodologists have long been aware of conceptions of generalizability beyond the statistical (Lee & Baskerville, 2003). There is a distinction between empirical and theoretical generalizability. By recognizing both the ways in which statistical sampling generalizability is legitimate, as well as the ways in which researchers in information systems and other fields may claim generalizability leading to broader relevance, we can in fact develop such external generalization from the Fielding case study. The development of a theory may be extended to other cases, and this step in the research process will be presented later in Chapter 8.

In concluding this section we acknowledge that case study research can act as the precursor to a pilot study, or actually be the pilot study, resulting in a major study that leads to externally generalizable results and conclusions (Maxwell, 1996). While it is certainly possible to apply our research design to replicate the study at multiple sites engaged in a program of distributed graduate education today, Fielding remains a unique and relevant single-case study as outlined in the introduction to this chapter. As such, the research design of this single—case study is meant to stand on its own as a complete work.

The data analysis presented in Chapter 7 is presented in both graphical and tabular format. The analysis bears directly on answering the research questions by illustrating the effectiveness of the ICT enabled distributed Collaborative Learning Environment under investigation.

6.0 The Fielding Graduate University Case Study

The Fielding Graduate University is focused on the educational and professional needs of adult learners and mid-career professionals. The University has developed an educational model that builds on the student's existing learning and professional experience and features collaborative, competency-based learning and assessment, providing flexible scheduling to accommodate the many demands placed upon the learner's time as a working professional. The purpose of this chapter is to provide the necessary contextual information describing Fielding as the focus of our case study of an ICT enabled distributed Collaborative Learning Community. It is helpful to keep in mind the structure of Table 1 from the Chapter 2 literature review, as we move through these concepts in describing Fielding. In Section 6.1 we will cover the practice, history, community and physical descriptions, and values associated with the Fielding Community of Practice. In Section 6.2 the processes and structures are covered relating to membership criteria, resources, templates, roles, and collaborative knowledge creation and sharing. Then, Section 6.3 describes the Fielding Case Study Guidelines, followed in Section 6.4 by a discussion of the use of the ICT Map we introduced in Chapter 4 as an important concept for our study.

6.1 Introduction to Fielding

Within Section 6.1 we will provide an institutional description of Fielding. Next, in Sections 6.1.1 through 6.1.3, we describe the Fielding Collaborative Learning Community in general terms, including its mission, vision, values, and historical context. Fielding offers fully accredited⁵ graduate education programs that are considered both rigorous and demanding (Fielding Graduate University). The Fielding faculty challenges the students in many ways to help prepare them for the life of the scholar-practitioner. Fielding students become part of a community of scholars dispersed throughout the country and around the world. This community is committed to transforming graduate education and research to advance individuals, organizations and society. Fielding students and graduates are self-directed, academically talented men and women who combine their practical experience with scholarly pursuits and make contributions in highly meaningful ways.

6.1.1 Fielding History

Fielding Graduate University was founded as Fielding Institute in March, 1974, in Santa Barbara, California, the realization of the vision of three founders: Frederic Hudson, Hallock Hoffman, and Renata Tesch. The founders, all distinguished higher education administrators and educators⁶, in their capacities as President, Executive Vice-President, and Secretary respectively, each contributed an essential ingredient to the establishing of

⁵ Accreditation review by the Western Association of Schools and Colleges, Accrediting Commission for Senior Colleges and Universities (WASC)

⁶ Please see Appendix F for educational and professional information about the Fielding founders.

the Institute. Many other key individuals, through their diligence, hard work, and firm belief in the national need for mid-career professional education, gave substance to the dream (Fielding Graduate University).

6.1.2 The Fielding Collaborative Learning Community

Fielding maintains a geographically dispersed, yet closely-knit community of scholar-practitioners who value learning, creativity, relationships and respect for individual differences. Fielding's faculty, administration, and technologists are highly skilled at creating communities that are dispersed, regional and online, as we shall see through the remainder of this chapter. As we saw in Chapter 2, most of the literature about Communities of Practice that are concerned with collaborative learning focuses on a core business or technical process other than learning itself. At Fielding we see the core process of the community is learning and knowledge creation.

The Fielding campus is the globe. There is no physical campus. People bring their diverse perspectives in working with each other and creating knowledge. Unlike knowledge in engineering or hard sciences, knowledge in softer sciences, like sociology or psychology, is socially constructed and socially agreed upon. Consequentially the common ground needs to be negotiated between the diverse participants. There is not one single common ground. In each knowledge area they need to create a common ground, so this is a continuous process. This common ground also includes existing literature and partly from the faculty mentor. A lot of it is derived from discussion and negotiation back and forth. Given the distributed nature of these people that have to be in this community, their membership is due to being members of Fielding and not really anything else. Unlike a traditional metropolitan university which draws a large part of its student body from adjacent locations, Fielding draws its student body from all over the US and Canada and even around the world. They come from different cultures, geographies, socio-economic and ethnographic situations. Collaborative learning is the only reason they are together. However, they have a collaborative learning model requiring intense interaction between these people. This collaborative learning model is building common ground.

6.1.3 Fielding's Mission, Vision, and Values

The mission, vision and value statements are reproduced here because these items provide the conceptual concepts for example for the Fielding practice, processes, structures, and values. All of these concepts bear on the analysis of the data collected in this study and are considered more closely in Chapter 5.

Table 7 Fielding Mission, Vision, and Value Statements

Fielding Mission Statement	Fielding Vision Statement	Fielding Value Statement
<i>Fielding Graduate University prepares its students to serve as reflective professionals through its innovative doctoral and master's programs, collaborative learning model, and continuing professional education. We support professional and personal transformation through a learning model which integrates theory, research, and values with high integrity practice and scholarship in Psychology, Human & Organization Development, and Educational Leadership & Change.</i>	<i>Fielding Graduate University sets the standard world-wide for quality and innovation in transformational distributed graduate education and research. We support the well-being and success of our students as they pursue their goals and seek significance as life long learners and leaders in their professions in the service of ethical social change and social justice.</i>	<i>Fielding Graduate University values include academic excellence through a commitment to the highest quality academic performance in the context of respect for and attention to the student as a whole person in the learning process.</i> <i>Truth, Integrity, and Meaning displayed through a willingness to serve others as ethical change agents in our search for truth in learning, in our work and our lives.</i>

As reflected in the mission, vision, and value statements above, transformational learning is a key component of the Fielding process. The Fielding mission statement in the table above expresses the University’s strong belief in the collaborative learning model. Each of the Fielding programs mentioned in this mission statement also recognizes collaborative learning as a program benefit.⁷ All stakeholders, including students, faculty, administrators, and technologists in the Fielding process, are challenged to re-evaluate their personal vision, roles, goals, and priorities to gain an outcome of new understandings of self and new commitments to life-long learning and future life possibilities. This re-evaluation occurs through many collaborative learning activities. Complimentary to this philosophical stance of transformational learning, is an emphasis on, “Human Diversity, Dignity, and Worth expressed as a respect for the dignity and worth of all individuals in the Fielding Community in an environment of openness, and celebration of diversity in the service of social justice.” (Fielding Graduate University) In order to understand the choice of Fielding as the focus of this single—case study research into Collaborative Learning Communities enabled by ICT, it is helpful to know how Fielding came into existence, a little over thirty years ago.

6.2 Fielding Processes

Above, we have learned about the Fielding Practice of ICT enabled distributed Collaborative Learning in a scholar/ practitioner community. Now, we will examine the Fielding socializing and technical processes. There are two primary processes that enable Fielding’s mission, vision and values as reviewed above. The first is the knowledge creation and sharing process, which underlies the learning, and the second is the administrative technological process that provides the ICT enabled collaboration and record-keeping infrastructure for the University.

In Section 6.2.1 we will investigate the way in which these processes support the Fielding PhD student community and constellations. Then, in 6.2.2 we will describe the Fielding

⁷ The Fielding online program information documents the University’s collaborative learning model extensively. These URLs are just a sample of this documentation.
<http://www.fielding.edu/om/program.htm>; <http://www.fielding.edu/about/mission.htm>;
<http://www.fielding.edu/about/overview.htm>; <http://www.fielding.edu/elc/howitworks/collaborate.htm>

Technology Support Processes, which include the administrative record-keeping, technology support for students, faculty, and administrators, as well as the digital library services.

6.2.1 Fielding PhD Student Support Processes

The Fielding community is physically distributed and employs administrative and learning processes that are sustainable over long distances and long periods of time. The community has roles and leaders. Temporary groups come together and disband, such as the participants in collaborative learning and sharing Knowledge Areas (KA). Knowledge Area Assessments comprise the means by which students move through the PhD program requirement, and they are roughly equivalent to required courses and credits in other US PhD programs. The instrument that sets up the requirements for a KA is called the Assessment Contract. Students have the responsibility for developing and negotiating an assessment contract with a faculty member for each required and elective knowledge area. The contract contains four elements: 1) a description of the student's educational objective within a specified knowledge area; 2) the specific knowledge to be acquired; 3) the methods used to acquire it; and 4) a timetable for its completion. The assessment contract document is an example of protocols for sharing data, referenced in Table 1. How Fielding characterizes the process and structure of developing the assessment contract for a KA using study guides is illustrated below.

Table 8 Assessment Contract Structure for a Knowledge Area (KA)

The study guides are intellectual maps of knowledge within each area. They emphasize key issues in the area and define the competencies that form the basis of the knowledge area. Commonly selected means for documentation of competence include: research papers, course development, scholarly lectures or videotaped presentations, and tutorials. Assessment consists of three elements: the overview, the in-depth, and the applied.
The overview portion of an assessment demonstrates a broad integrative/evaluative understanding of the major conceptual and research issues in an area. Major theoretical issues are addressed as well as current methodological and political debates.
In-depth projects focus on a narrow topic of special interest to a student. In-depth reading generally includes current research and contemporary criticism of work around a focused subject.
The applied portions of assessment are hands-on projects. Students might conduct a small research project, a focus group, and experiential exercise, or design an intervention at work (www.fielding.edu).

(Source: Adapted from <http://www.fielding.edu/hod/howitworks/ka.htm> and <http://www.fielding.edu/hod/terms.htm>)

There is a stipulation that a student cannot contract with a faculty member for more than two Knowledge Areas, and there are additional guidelines that govern the number of KAs for specific programs. We return to this KA process and its significance to our research in the interview analysis in Chapter 7.

As we saw in the Chapter 2 literature review in Table 1, a community is not a single block but communities within communities, called constellations (Lave & Wenger, 1991). Another word for constellations, used in the Fielding community, is cluster. A cluster has several definitions, depending on the program. The Human Organizational & Development (HOD) program defines a cluster as, “A group of Fielding students living geographically close enough to make group meetings feasible at least every other month provides members opportunities for intellectual and professional development, as well as peer support⁸.” There are two yearly University-wide sessions focused on all academic work held in the winter in Santa Barbara, California and in the summer on the East Coast; in addition, there are two yearly University-wide sessions focused only on research held in the spring and fall in varying locations. Some other examples of constellations at Fielding are virtual clusters that meet online monthly, group KA learners that self-assemble to form an assessment contract with a faculty member, special interest groups that initiate online forums, and self-forming study groups. At Fielding, some constellations persist throughout a student’s learning process, while others are formed and disband throughout the process.

Support processes of the collaborative learning model involve both face-to-face and distributed methods, which begin with the Fielding web site and enrollment procedure. Fielding offers information sessions, typical of universities around the U.S. in a face-to-face mode, but also as teleconferences that can be attended from anywhere through the online registration process. Right away, we can see that there is a tight integration between the student support processes and the technological and administrative record keeping processes.

Students become attracted to Fielding as a result of its long established brand through the community of psychologists and HOD professionals. Being a respected university brand name, professionals come to Fielding for the same reasons people apply to other universities for educational and professional qualifications, to learn and develop the subject matter of their practice, and to fulfill personal goals. Despite the fact that these people are globally distributed the use of technology has made it possible for the students who do not reside in North America to keep up with their studies in a seamless fashion. Moreover, even the students in North America are distributed over continental distances and occasionally move from one location to another. Similarly, the faculty members are also distributed in the U.S. and abroad. Thus the distributed nature of the Fielding learning community is an important concern that needs to be addressed. The following quote from a student illustrates the distributedness of Fielding.

“I have lived overseas for periods of time during my time at Fielding. And the wondrous thing about Fielding and in fact my advisor who I should really speak to and who has been wonderful is that they haven’t required me to be either in the country or be at a cluster meeting every single month. Fielding has also been flexible in that if I’m no longer living where my advisor’s cluster is which is in North Carolina, and I move some place else in the country. And as of right now I’m living in

⁸ <http://www.fielding.edu/hod/terms.htm>

Boston. I have then the option usually to attend a cluster there. So geographically I have not had any real requirements set upon me (PSY55).”

6.2.1.1 Membership Criteria: Entering the Fielding CLC

There is an emphasis on excellence in reading and writing skills that are essential for the successful completion of Fielding PhD Programs. Applications are considered for both fall and spring starting sessions, and the Orientation and Planning Session (OPS) is held for new students in Santa Barbara. The OPS represents an initial face-to-face approach to building a community environment for new students and introduces the collaborative learning model. It is mandatory, and students are assigned to their first cluster with other beginning students in the same discipline through the OPS process. The students may hail from any of the fifty states or from anywhere in the world, but groupings are not geographically based for the OPS cluster.

The OPS carefully shepherds students into the Fielding collaborative learning process, which emphasizes the formation of a community of scholars and practitioners. This is also the first exposure students receive into the use of the online seminar software called FELIX. They receive an understanding of how Fielding’s CLC is structured to advance their individual higher education aspirations through a distributed ICT enabled Collaborative Learning Community. Also covered in the OPS is the process of contracting to obtain Knowledge Area (KA) credit.

6.2.1.2 FELIX

When we speak about the ICT enabled component of the Fielding distributed Collaborative Learning Community, we are referring to the private areas of the Fielding web site called "FELIX⁹." FELIX is an acronym for the Fielding Education Link and Information eXchange. The system was first established in 1996, before which Fielding did not have an Internet presence. The FELIX software environment is updated regularly. It provides the Fielding scholar/ practitioner participants with links to information and resources that they need for the academic programs within the University. Further, community members make extensive use of the forum software module for cluster communications, seminars and general community communications.

The FELIX Online Tour Guidebook, as well as an introductory course during the OPS process, helps new members of the Fielding CLC find their way around easily and participate in group conversations. Fielding asserts that competency with FELIX facilitates academic work and enhances enjoyment of the Fielding experience. FELIX is documented as “a concept and refers to a collection of on-line tools and does not refer to a single application.” Fielding provides online and telephone technical support for the various modules, including for example, discussions, a particular web page, login, and digital resources.

⁹ <http://www.sitescape.com/>

The software product set that has been customized by Fielding to create FELIX is called SiteScape¹⁰. The SiteScape company offers software, hardware and Internet hosting solutions for business process improvement, document control, program management, contact management, integrated web and teleconferencing, knowledge networking, and consolidated instant messaging. The SiteScape collaboration technology enables Fielding to meet their mission-critical requirements for sharing information across organizational, geographic or temporal boundaries. They offer integrated web conferencing, teleconferencing, instant messaging, user presence detection and contact management.

In Chapter 7 we provide an in-depth analysis, from the stakeholder perspective, to determine how well FELIX fulfills the role of ICT enabler for the student support processes. Now, to help us understand the role of other ICT in supporting geographically and temporally distributed CLCs, we will delve into a detailed description of the Fielding technology support process in the following section.

6.2.2 Fielding Technology Support Processes

In order to investigate the research questions for this study, the minimum technology requirements needed to participate in a Fielding program, sometimes referred to as the lowest common denominator, plays a pivotal role in driving the use of technology for collaboration. This technology requirements baseline is initially introduced to members when students, faculty and administrators join the Fielding collaborative learning community and access the General Computer Recommendations on the Fielding web site. Prospective and enrolled students are provided with information about what kind of computer they need to participate in the programs. PCs and Apple™ Macs are used by Fielding community members. Some members are able to use the computer they currently own and others make a new purchase based on the computer specifications documented. In the tables below are the current 2005 hardware and software specifications that document the computer evaluation guidelines.

¹⁰ <http://www.sitescape.com/>

Table 9 Fielding Software Recommendations

Operating System (OS)	Word-Processor	Web Browser	e-mail Account	Virus Protection & Firewall Security Software
Windows: ME, 2000 or XP	None specified	Netscape Navigator Version 6.2 and 7.x Microsoft Internet Explorer Versions 5.5 and 6.1 Firefox	Both PC and MAC users are advised to check vendor privacy policies, email storage limitations, spam-flagging procedures, and attachment handling	McAfee is listed as an example, but there is not a specific requirement for either PC or MAC users
MacIntosh OS 9 or OS X	None specified	Netscape Navigator Version 4.7 on OS 9 Netscape Navigator Version 6.2 and 7.0 on OS X Firefox on OS X Internet Explorer Version 5.2 on OS X		Firewall software is recommended for both PC and MAC users for additional security

(Source: Adapted from <http://www.fielding.edu/admission/computer.htm>)

Additional software may be desired or needed for individual research projects, such as for quantitative and/or qualitative data analysis, and for managing the bibliographic information. Fielding Graduate University does not endorse or recommend third-party software products and does not provide technical support for them. Users with the following software have reported access difficulties with Fielding online library databases: Norton Personal Firewall, Norton Internet Security, AOL's native Web browser, and Windows XP Firewall. We document this information to set up the Fielding technical support parameters for the case study stakeholders.

Table 10 Fielding Hardware Recommendations

PC	Minimum	Recommended
Processor	Pentium 3 800Mhz or AMD Athlon 1600+ (we do not recommend a Celeron processor)	Pentium 4, 2.4 GHz or AMD 2400+
RAM	128MB	512 MB
Internet connection	56K V.90 Modem or DSL or Cable broad band access	DSL or Cable broad band access
Video	64MB	128MB or greater
Monitor	15" or greater	17" flatscreen or better 15" LCD panel or better
CDROM/DVD	48X CD	48X and/or DVD player, CD-RW
Sound	Sound Blaster Compatible	Sound Blaster Compatible
Speakers	Any	Any
Approximate Cost	\$400 +/-	\$800+/-

Mac	Minimum	Recommended
Processor	iMac G4 or eMac G4	Dual G5, 1.8GHz
RAM	128MB	512MB
Internet connection	56K V.90 Modem or DSL or Cable broad band access	DSL or Cable broad band access
Video	64MB or better	128MB or better
Monitor	15"	17" flatscreen or better 15" LCD panel or better
CDROM	24X	48X and/or CD-Writer
Sound	Sound Blaster Compatible	Sound Blaster Compatible
Speakers	Any	Any
Approximate Cost	\$1299+/-	\$1999+/-

(Source: Adapted from <http://www.fielding.edu/admission/computer.htm>)

As with most computer access requirements in the professional and academic world today, Fielding students are expected to have a certain amount of computer savvy regarding hardware, software and security.

6.2.2.1 Supporting Distributedness

The case study sought to determine exactly what kind of technology is supporting collaboration within the distributed Fielding community, and to identify what worked optimally, as well as problems, concerns, issues, and opportunities for improvement. Given that Fielding's day-to-day processes and people are distributed, they require a coordinated strategy of support to bring them together. We briefly recounted the role of technology related to how people join the Fielding community above.

Specifically, we seek to understand how distributed collaborative learning operates for the purpose of Knowledge Area (KA) acquisition, and also to contrast this approach to solo learning. We therefore refer back to Table 1, Concept Relationships of Collaborative Learning Communities, and we analyze this in more depth in Section 2.1, Chapter 7. Furthermore, information about the way in which Fielding supports distributedness and issues of polycontextuality is essential for answering our research questions. For example, we investigate how individuals talk to each other within the clusters and across the broader Fielding community.

As we have seen above, this support is provided partially by ICT through the FELIX environment, coupled with protocol agreements on how to interact. These protocols are negotiated using the assessment contract between students and faculty. They include variables such as meeting times, meeting places, both physical and virtual, and meeting agendas, that range in detail from somewhat informal to highly structured. Additionally, the FELIX environment provides the means for knowledge creation and sharing through the seminar module and document sharing capabilities. The research seeks to understand what the optimal requirements for technology are for supporting distributedness and how these can translate on a broader basis.

6.2.2.2 Private Conversations within a Distributed CLC

In order to understand what private conversations are and why they are important to a collaborative learning community, it is useful to reflect back on the concept of trust, discussed in Section 2.1.1.2. Collocated Communities of Practice can take advantage of encounters in private spaces, such as hallways, restaurants and walks between venues (Wenger et al., 2002). In a distributed ICT enabled Community of Practice, “fewer opportunities for spontaneous one-on-one networking,” occur between individual members (Wenger et al., 2002). Additional attention must be directed at how individual affiliations and cultures affect trust building in Communities of Practice, and how these characteristics impact the distributed environment in particular. Because of our interest in how ICT can support the private, unstructured interactions of the members, which are important to building trust, the case study investigates technology supported private conversations using email and public conversations using FELIX, as well as why private conversations are being carried out. Questions related to what drives people to these private conversations in the collaborative learning environment are of interest, especially as the thread of private conversations is being lost. Additionally, why the FELIX forum software does not support or encourage private conversations is investigated.

6.2.2.3 External Ties

The external ties to the Fielding PhD graduate community are socially- rather than technologically based, and include clinics involved with the Psychology track, external accreditation, granting bodies, and a vast array of human organizational structures, where the HOD PhD graduate students conduct their research. The Fielding alumni association provides another avenue for social networking in support of the Fielding CLC, but alumni investigation was beyond the scope of this research. This aspect may be of interest for follow on research related to this study.

6.3 Fielding Case Study Guidelines

The setting(s), events and processes of the Fielding Graduate University PhD program are all parameters that were considered. Also, of paramount importance, was the careful selection of people that provided data input under our purposeful sampling methodology. We have covered the Fielding Processes above in Section 6.2. Here, in Section 6.3.1 we will explain the informant selection, and in Section 6.3.2 we review the physical setting and events that influence the case study.

6.3.1 Informant Selection

Using the principals of purposeful sampling and triangulation discussed above in Sections 5.4.2 and 5.4.3 to collect data from a diverse range of individuals, we were able to reduce the risk that the study conclusions could be biased. Interviews were scheduled at the Fielding 2005 winter session meeting at a conference hotel in Santa Barbara, California. Interviews respected the various stakeholder interests, and included students, faculty, administrators, and technology educational research and support professionals.

While direct thirty-minute interviews within a structured framework (see Appendix D: Interview Questions Guide) formed the basis for this study, we also relied on direct observation through the use of digital video recordings. The decision to use video in addition to audio recordings was so the richer media of video would be available for the review of both body language and audio cues for the data analysis, presented in Chapter 7.

6.3.1.1 Student Interviews and Observations

Our goal was to interview twenty PhD students split as evenly as possible between the Psychology and HOD. We wanted half the students to have from twelve to twenty-four months experience in the program, and the other half to be nearing graduation. The justification for this approach is driven by the research question: *How is technology enabling collaborative learning in learning communities, as well as in the individuals that belong to those communities?* In order to understand the phenomenon, we had to find out why Fielding has been successful over several decades using a low technology online environment and very limited physical interaction among the student body.

Splitting the sample into students that have not been in the community very long and those that have the experience that has made them successful (measured by their imminent graduation), we gain this understanding from two different perspectives. We can begin to discuss those parameters that make early integration into the community possible. We can also identify any boundaries to early integration, coping mechanisms to acclimate to the community, and those factors that provide long term sustainability. If the sample included only new students (defined as less than twelve months in the program), we may have picked up noise generated by an unfamiliarity with the Fielding culture, use of the Internet, use of FELIX, as well as the informants' own doubts and insecurities about their choice to enter into a distributed learning community.

So, we wanted students that had for the most part passed the initial learning curve, and committed to their program choice. They had had enough time to acclimate to the Fielding environment. Without a representation of students nearing graduation in the sample, we could not confidently analyze the data findings and point to the specific success factors of the Fielding environment. Our success criteria in the Fielding case study, as derived from Table 2, includes earning a PhD within the ICT enabled distributed CLC paradigm.

To summarize the student sampling approach: we were interested in focusing on relatively new students that have already had a chance to learn to negotiate the FELIX online learning environment and become familiar with Fielding processes. We also needed an equal representation of students nearing completion of their programs. We did allow for a minor percentage of students that were on the fringes of these guidelines to round out the sample, drawn from newer students that were just becoming versed in Fielding processes. We also accepted a small sample of mid-section students who have been in the system beyond 24 months, are mid-way to three-quarters into their programs, but are not yet at the dissertation stage. Including these students added an additional

dimension to our qualitative analysis, without posing any danger of diluting the results, since they have acclimated to some degree but may or may not complete the program successfully.

6.3.1.2 Faculty Interviews & Observations

We were able to interview two Psychology program faculty: one from the Clinical Psychology PhD program and one from the Media Psychology Program. We also interviewed two Human Organizational & Development (HOD) faculty. Initially, our goal was to coordinate the sample to claim that the faculty is directly involved with the student informants, but this proved to be logistically unrealistic. We set the goal to interview faculty that was seasoned in the Fielding environment and processes and had a strong track record of successfully guiding students toward the completion of their PhD programs. This goal was easily attained. In order to further balance the purposeful sampling, we were initially interested in expanding the number of faculty interviews to also include a couple of relatively new faculty members to learn how they are acclimating to the distributed learning environment. Such individuals were not available during the winter session, so this is another possible follow on study area.

6.3.1.3 Technologists, Educational Research and Support Interviews

We were able to interview the director of library services who has specific information about knowledge management and collaboration at Fielding. Also of essential interest, was the interview with the FELIX online learning community software administrator, who also happens to be a graduate student at Fielding. This individual is exclusively positioned to discuss the technology environment, as well as the interaction within this environment, both from the point of view of an administrator and a student.

It was of critical interest to interview these key technologists at Fielding, as ICT support bears directly in bringing us closer to understanding the ICT component of our research question: *How is technology enabling collaborative learning in learning communities as well as in the individuals that belong to those communities?* We also needed their perspective to enlighten us on: *What is the role of technology in enabling Collaborative Learning Communities?* Naturally, this was of primary concern from all the stakeholder perspectives. The technologist stakeholders, because of their role of providing the ICT support for the Fielding CLL, provided a unique point of view regarding the question: *What are the issues and problems that may arise for communities or individuals in the context of technology enabled collaborative learning?*

6.3.1.4 Executive and Administration Interviews

To round out our stakeholder interviews we included the associate deans who oversee the psychology and HOD PhD programs directly. These associate deans are very involved with the tone and nature of research of the graduate students, as well as the way they learn. Finally, the study benefited from an in-depth interview with Dr. Anna

DiStefano, Fielding Graduate University Provost, to obtain an overarching context for the Fielding graduate program goals and objectives.

6.3.1.5 Preliminary Demographics of the Case Study

Background demographics about the informants are important to obtain a well-rounded picture of the experience level, similarities and differences within the population under study. The following table shows the demographic information that was distilled from the informants' CVs and resumes, collected during and after the interviews in January, 2005.

Table 11 Demographic Metadata

Demographic Metadata	Database Values	Statistical Values
Age		
Ethnicity		
Language ¹¹		
Home state or province		
Home country		
Work status ¹²		
Distance from program ¹³		
Educational Experience ¹⁴		
Work Field		
Non-technical or Technical work		
Work state or province		
Work country		
Time of courses ¹⁵		
ICT experience ¹⁶		

Demographic Data Analysis & Values provided in Chapter 7 & Appendix D

6.3.2 Physical Setting

The primary physical setting for the study occurred at the Fielding Winter 2005 Cluster meeting at the Fess Parker Doubletree¹⁷ conference hotel, located in Santa Barbara, California. The secondary setting was the FELIX online collaborative learning environment where I was granted access to the software modules. Furthermore, researcher visits to the Fielding Summer 2004 Cluster meeting at the Alexandria, Virginia Hilton conference hotel and the Fielding Administrative offices in Santa Barbara provide additional dimension to the study. Descriptions of FELIX have already been

¹¹All Fielding courses are conducted in English. Is English the 1st, 2nd, or 3rd language of the informant? Are there correlations between this demographic and the qualitative data collected?

¹²1 = Full time, 2 = Part-time, 3 = Not employed

¹³0 = Santa Barbara, 1 = California, 2 = Pacific Time (Not CA), 3 = Mountain Time, 4 = Central Time, 5 = Eastern Time, 6 = Global / Outside of the Continental US & Canada

¹⁴All informants have at least a Master's Degree. 1 = 1-2 years with Fielding, 2 = PhD Candidacy status, 3 = PhD obtains (e.g. Faculty, Administration), 4 = Fielding Technology Support

¹⁵Globally distributed synchronous sessions may be at different times of the day. Asynchronous participation may still be influenced by time (e.g. what does time of taking the course mean?)

¹⁶Correlates to the ICT map in Chapter 4 from No Technology to Advanced Technology

¹⁷<http://www.fpdtr.com/index2.html>

provided above in Section 6.2.1.2. Now, we will describe the cluster hotel settings and the administrative offices.

We include the description of the Santa Barbara conference hotel, a large sprawling multi-building two-story structure that is used year after year for this special meeting, because it provides a context for the face-to-face community building process that takes place within. Built in 1986, the hotel has 360 guestrooms and 45,000 square feet of meeting rooms available for the event. The hotel is taken over for two weeks by Fielding's stakeholders, providing the physical campus where all of the formal and informal relationships can begin or be maintained. There are multiple two-story buildings dotting several acres across the street from the Pacific Ocean. The case study was assigned one guestroom that had been emptied of the beds for the video interviews. We put a poster-sized sign on the door indicating the title and purpose of the study. Inside we had several straight-backed chairs, a serving tray with iced water and glasses, another to hold the video and audio recording equipment, and a sliding glass door with curtains leading out to a back patio. The air conditioning hummed steadily all day, each of the four interview days. The interview schedule called for thirty minute breaks between informants but that time was quickly dissipated with tape changes, and reviews of the data collected. We had very little time from early in the morning until nightfall to enjoy the Santa Barbara sun and beauty outside. Our informants were equally hurried, with full schedules of meetings, seminars, and presentations, but nevertheless very generous with their time and interested in contributing to the case study. The Winter session setting was one that was both physically and mentally demanding because everyone there had multiple goals and purposes to fulfill within the community. The atmosphere was charged with energy and excitement, making this event exhilarating and exhausting!

Contrast the winter session setting to the Fielding administrative offices, set in a historic complex in downtown Santa Barbara. There, the atmosphere is contemplative and filled with beauty through the Spanish style windows and arches that are liberally dispersed throughout the buildings. The offices house 87 administrative staff¹⁸, including the technology and library support personnel, the institutional research office, provost, and president. From this headquarters Fielding supports 130 full and adjunct faculty members, 1,500 current students, and over 2,200 alumni.

Our first introduction to the Fielding face-to-face cluster concept was during the Summer 2004 Cluster, an annual event in Alexandria, Virginia. There, we were invited to sit in on several seminar meetings where our first introductions to the Fielding learning model occurred. It was through this initial exposure that the case study design began to take form. There are smaller cluster meetings that occur periodically throughout the nation, the world, and online, that foster the ICT enabled CLC, but the Winter and Summer Clusters are the centerpiece events. We shall hear more about these in Chapter 7, through the analysis of our qualitative data collection.

¹⁸ <http://www.fielding.edu/about/at-a-glance.pdf>

6.4 Chapter 6 Summary

This chapter has provided the background history of the Fielding Graduate University for our case study in Section 6.1. Then, in Section 6.2 we have recapped the Fielding processes that support the ICT enabled Collaborative Learning Community, including membership criteria, the FELIX online environment, and technology support for distributedness. Both Sections 6.1 and 6.2 offer the foundation for how Fielding operates, manages and achieves successful outcomes with its global distribution of students. In summary, Fielding focuses on a population of adult professional learners using a collaborative learning model that emphasizes scholar practitioner activities. It has put into place ICT to support distributedness, while at the same time providing a framework of face-to-face activities to build trust, common ground and a collective mind among the stakeholders.

In Section 6.3 we reviewed the Fielding Case Study Guidelines to understand the Informant Selection, as well as particular components of the student, faculty, technologist, executive and administrative stakeholder interviews and observations. We also introduced the preliminary demographics of the case study in tabular format and discussed the physical setting. Now we have laid out all of the groundwork for the analysis of the qualitative data collected through the interview process, following in Chapter 7.

7.0 Results

7.1 Introduction to the Analysis

In Chapter 2, Table 1, the concepts and characteristics particular to collaborative learning communities were introduced. Section 7.2 utilizes that foundation and expands upon it to report direct observations made during the Fielding case study. Section 7.3 analyzes the deployment of ICT at the Fielding Graduate University collaborative learning community, and describes what is working, and where there is room for improvements. Within this section we also focus the analysis specifically at the role of media richness. Section 7.4 revisits the critical success factors from Table 2, and analyzes how they apply to the case study data. In Section 7.5 we analyze how distributedness and polycontextuality are expressed through the data collection and Section 7.6 concludes this chapter with a summary of the findings.

7.2 Fielding CLC Concept Relationships

The following sections comprise direct observations from the Fielding case study displayed in conjunction with the concept characteristics of a Collaborative Learning Community we examined via the literature review process in Chapter 2, Table 1. It is constructed from the Table 1 Concept Relationships of Collaborative Learning Communities' summary combined with the Concept Relationships which came to light from our empirical investigation of the Fielding Winter session PhD data collection. The initial research framework consisted of an integration of the various views or the predominant view, with regard to the concept characteristics defining Communities of Practice. These concepts form and sustain the phenomenon of a Collaborative Learning Community. Information was distilled from the case study interviews with the Fielding stakeholders, as well as from a review of the written material about Fielding, presented in Chapter 6.

The left-hand column of the table lists the concept, whereas the right-hand column shows how the concept was observed in practice at the Fielding Institute. The left column also includes quotations from interviews as illustration, and detailed concrete evidence of observation. Appendix E contains a complete table of the reference codes at the end of each quote. Briefly, the first three letters of each code designates which primary or subunit the informant is associated with in the Fielding case. The number was assigned in order of the interviews and is used to differentiate informants and to create a link to the Contact Sheets, which follow. The final letter is used to indicate stakeholder type: "S" = Student; "F" = Faculty; and "A" = Administrator. These final letters are only used for subunit members.

7.2.1 Practice

The practice umbrella we studied at the Fielding Graduate University was instantiated by the founders in 1974, through a pedagogical philosophy of graduate studies outreach to adult learners using a scholar/ practitioner model. Fielding Graduate University has a 30-year history of integrating basic social science, applied research and practice, together with education to produce doctoral dissertations by scholar practitioners. As a capstone to that history, Sewell and DiStefano (2002) reviewed the Fielding model, the work of the Boyer Commission, the products of the Scholarship of Teaching or Learning (SoToL) research, and related social science research. They produced an extended model of the scholar-practitioner and the role of basic research, research and practice, and education in the professional life of scientists, practitioners, and educators (Sewell & DiStefano, 2002). As we will see in Table 12 below, the concept of practice is central to the Fielding Graduate University.

Table 12 CLC Concept Characteristics Reflected in Fielding Case Study

Concept Summary	Reflected in Fielding Case Study through researcher observations and the interview data
Practice is a set of socially defined ways of doing things and ways of knowing, within the specific domain of interest.	<p>Fielding has defined a practice by fostering a series of social norms, as evidenced through the structure of the Fielding Education Link and Information eXchange (FELIX) environment, the Orientation and Planning Session (OPS), which constitutes the first cluster experience, and Knowledge Area (KA) learning contracts, either solely between a student and faculty member or KA student group learning contracts with a faculty member. These KA learning contracts define how the practice of acquiring knowledge (i.e. learning) will occur in the domains of interest. Therefore in Fielding they are defining practice by making contracts, doing things that are imparted through the OPS, and by continued socialization through the practice of clusters.</p> <p>“Because Fielding’s faculty and student population are distributed across the US and in other countries, it (FELIX) provides a virtual space for people to meet. So that provides an online space where both seminars can take place. Whole community discussions, whole institute wide discussions as well as project teams (ADM1).”</p> <p>Quote in response to: When did you begin to understand and trust these collaborative learning methods at Fielding?</p> <p>“OPS. Trust is an interesting thing, because it builds over time. So one doesn’t immediately...I don’t know what levels of trust I will grow into when I actually experience some of the seminars and collaborative learning. But finishing a KA, like 753A, I was collaborating with my faculty in order to complete that, and that was a very satisfying and confidence building experience, so trust is building most definitely” (HOD10S).</p> <p>“When I got to the end of my first FELIX (based) KA. At first, I’d plug in and I would be scared of how the professor responded, about what everybody else thought about my paper, etc. And so there was this, “Oh I’m going to do it now, so close my eyes and I’ll learn from the practice” (PSY7S).</p>
Effective practice can be measured along a	There are three key concept characteristics that are reflected in the Fielding data. First, members of the Fielding CLC view their work as learning, as do the other stakeholders.

<p>continuum of evolution within the community of interest. Practice can be defined in terms of how it integrates into the members' work. Practice is also defined as to how it adds value to the organization of knowledge useful to its practitioners, and how the mode of communicating and capturing knowledge corresponds to the demands of actual use.</p>	<p>Second, they all add value to the organization, whether participating in a KA learning group or cluster, they learn together from each other. Third, communication and knowledge capture is done primarily using Felix. Within the shared electronic repository the knowledge is both communicated and captured.</p> <p>Quote about viewing their work as learning:</p> <p>"I think it (FELIX) can support student learning by, number one, serving as a repository for all kinds of learning resources. There's information on FELIX like study guides and expectations about the dissertation process, and forums and things of that sort. The second thing is it's the platform that we use for our online seminars. So there are actually structured learning experiences, especially for the masters' degree programs; that's where it actually happens. But even for the doctoral programs. " (ADM2).</p> <p>Quote 1 about KA learning group or cluster:</p> <p>"There are benefits to both, having in group KAs and doing individual KAs. So having the give and take of other people in a group is very helpful. Yet having to feel like it holds you back in a time sense that it seems to take longer, even though there's the pressure of deadlines. It's not always relevant to my own work, so in that respect I prefer the individual. But then, the ability to bounce back and forth ideas, I miss when I do it individually. But doing it online, having that interaction, I find works well" (HOD8S).</p> <p>Quote 2 about KA learning group or cluster:</p> <p>"We're doing a group KA, it's going to be assessed at my house. And I do cluster group meetings and FELIX seminars and winter, well I went to this winter session, summer session, there were group meetings where we presented materials that we had already gathered" (PSY1S).</p> <p>Quote about communication and knowledge capture using FELIX:</p> <p>"We have online a form that's called a Forum Request Form. And the faculty or students or administrators use this to fill out and request a forum. I put this together. And so one of the questions is, is this for forum members only, in which they would list it, is this for the community. And so I will get request for forums for special interest groups or project teams and deciding how and we've got a few different ways to create forums. Deciding which of these we're going to use in which instants and whether we're going to stick them in the whole workplace or if it's open to everybody or make them small groups. So there's collaboration that goes around that" (ADM1).</p>
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7.2.2 Processes: Process Design, Organizational Design

<p>Knowledge sharing in a collaborative learning community can be successfully achieved using a role model (a.k.a. apprenticeship) approach.</p>	<p>In this section we examine the knowledge creation process through a Theory of Social Learning (Wenger, 1998), which was introduced in depth in Chapter 3. Specifically, we were able to identify key characteristics of “role models” or “apprenticeship”. The geographical, virtual, and face-to-face clusters provide an environment where the more seasoned students can mentor the newcomers. The process of appointing student readers on dissertation committees is a clear example of apprenticeship.</p> <p>Quote example of knowledge creation:</p> <p>“FELIX seminar is a group KA where you have groups of students working together in the discussion of a topic but there are other group KAs that are not FELIX seminars that may not be electronic at all. They may be more of a synchronous as opposed to what I just described were asynchronous. They may be more of everyone log on at the same time and it’s in some ways a little more like a traditional classroom, in which there’s discussion and you know even administration of assignments and responses. WebEx is one of the main tools for doing that” (PSY13F).</p> <p>Quote from a student reader on the dissertation committee:</p> <p>“Being on other dissertation committees as a student reader and having a student on my committee and then there are a few students and we interact by phone and email in between sessions or something like that. It’s kind of a support system” (HOD1S).</p>
<p>A design for learning applies to all levels of organizations, from schools and universities, to public and private sector corporations, to states and nations. The world is fast becoming one large organization which is the object of design.</p> <p>The conceptual framework of CLCs, which incorporate symbiotic learning and practice, allow those of us involved in this design to contribute to the architecture of the future.</p>	<p>Fielding’s organization of faculty and administration recognize their role as participants in learning along with the Fielding students, rather than set high above in the proverbial ivory tower. Furthermore, the basis of Fielding’s pedagogical scholar/practitioner structure recognizes this application of learning in the worldly organizational sense. As such, there is a conscious interest in contributing to the design and improvement of the CLC architecture.</p> <p>Quote from ADM about participating in learning:</p> <p>“With Fielding I think that it’s been appropriate for the diversity within Fielding in that there are, it’s always a push pull. But that’s okay because, and there’s a lot of disgruntledness but that’s okay too, because people are always looking forward and trying to improve things. I think that because we’re not autocratic but we are collaborative, then the development of the online technologies and uses of them for me has been very appropriate for a genuinely collaborative learning environment. Our approach is continuously encouraging online seminars, having specific faculty training and the facilitation of online seminars. Learning between faculty in our masters program, which is our primary online collaborative learning environment” (HOD14A).</p> <p>Quote about applying what is learned in the work environment, i.e. the scholar/practitioner model in response to the question: Does your PhD program involve shared knowledge creation activities?</p> <p>“Yes, it’s part of our learning model as far as I’m concerned. When you’re doing doctoral education with people who are as professionally, at minimum professionally accomplished and as experienced as our students</p>

	<p>are, and when we believe in a learning model that is about, that is not a kind of expert model of faculty having knowledge sort of just... I don't know. Telling it to students. I think one of our tremendous value added in this is the notion of a learning community, is of the community. And the community is the context for collaborative learning. And I think our students will often...I think one of the reasons our alums come back or seek to remain connected with Fielding, or there have been a number of conversations about how to do that, is in their experience once they graduate there are very few other learning communities like this one, where there is some sort of shared conceptual framework. Where there's the kind of individual and interpersonal respect and caring. And three where there's the kind of diversity and richness of experience that people bring here. So I think absolutely it's part...I mean it's what sells... It's one of the main selling points for Fielding" (ADM2).</p>
<p>Legitimate peripheral participation (LPP) in the community allows the learner to internalize the simpler concepts of the knowledge area before attempting to understand the more complex central concepts.</p>	<p>We can see how LPP supports the apprenticeship model at Fielding as discussed above. This happens at Fielding.</p> <p>Quote from a new student explaining how they joined the Fielding community in response to a question about trusting collaborative learning methods at Fielding:</p> <p>"I think it started right from the OPS (orientation program) session, when we started to pair up as students and figure out how we were going to get started. So I remember in the beginning meeting somebody that was interested in working together on something and that's how it started right from the beginning. But it was only one other person and then as we went along, I found more opportunities for groups, to get involved in groups" (HOD7S).</p> <p>Quote about the OPS mentorship process:</p> <p>"I think if somebody agrees to be your mentor, you have to choose somebody at OPS, only somebody temporarily for six months, then they have an obligation. I think they should be obliged to call you once a month and see what it is you're doing. And how you're doing. And they really don't have any requirement like that. So...or maybe they have the requirement" (HOD5S).</p> <p>Quote from a more seasoned student including about the use of enhanced ICT for this purpose:</p> <p>"I would say that because we're distributed, the way I work with my mentor and my committee is through email. I'm a student reader and my, you know, I have a colleague, we're each other student readers on our committees and we speak on WebCam once a week and are constantly in contact on email. I would say that probably since I've been here, the most common use of you know furthering discourse, has been on email. That, we actually did a paper on that because we did a knowledge area and it was information systems. And we used the WebCam to see whether it would enhance our collaboration. And our conclusion was that it did enhance our collaboration" (HOD2S).</p>
<p>Communities of Practice are the social fabric of learning. Learning must be collocated with the Community of</p>	<p>At Fielding, most learning is community based. For example people work in geographical and virtual clusters to inform each other and discuss the object of the learning. The Fielding model owes part of its success to the ongoing discussion and informing. Unlike organizations where the core business is something other than learning, such as producing a</p>

<p>Practice and as such contributes to both the newcomers' knowledge base and the old timers' awareness. This tension is optimal for community evolution.</p>	<p>product, Fielding's core business is learning and this learning takes place in a social collaborative setting. Fielding is a community of practice and the learning is often virtually collocated, if not physically, through FELIX and adjunct ICT. Both old timers and newcomers to Fielding have diverse working experience and their own knowledge-base which they can contribute to the endeavor.</p> <p>"This kind of group assessment, as it's called, the knowledge area assessment, we do it together. And I've noticed that our first group has spun off already into two or three other directions one on one without anything that's counting for credit or involving the faculty. We've agreed to share our papers, written on any topic of media and set up a separate forum or intend to set up a separate forum while we're here this week to do that. One of us has a server, access to a big server, and he's already created a list or kind of single source email address that we're all using. And people use that. I must get every day two or three different things that people want to share that they've seen in the press or some other magazine, they found on the Internet or something. So we've, I've got parallel things going outside of FELIX with my fellow students. Some of whom I've never met, yet" (PSY4S).</p> <p>"I've done national sessions, research practice sessions. I'm also in governance committees so that involves students, student activity involvement, with faculty involved in that arrangement as well, in the governance process here. I've done other workshops like the online facilitation. I did the program at the Highlander Center that building [unintelligible], that was a collaborative, or working together process. I have not been involved in cluster meetings. I've been to a couple of those in two years. I also was a student anchor at an orientation week and that was a really good experience of not only interacting with new students and the faculty but experienced students as I was at the time and they were being able to interact too. Being on other dissertation committees as a student reader and having a student on my committee and then there are a few students and we interact by phone and email in between sessions or something like that. It's kind of a support system" (HOD1S).</p>
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7.2.3 External Ties

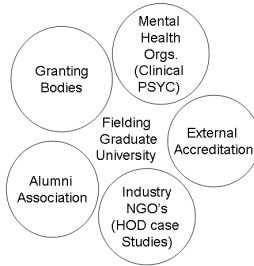


Figure 7 Fielding External Ties

<p>The concept of imagination in forming and sustaining distributed Communities of Practice applies to CLCs. Imagination is crucial for collaborative learning, as a vehicle to integrate local and global affiliation, allegiance and cultural foundations within the community.</p>	<p>Fielding leverages both local and global affiliations among its student body, faculty and alumni association. They do this by instilling a sense of distributed community that is driven in part by the imagination of its stakeholders in being able to retain and proliferate the cultural foundations of this distributed virtual organization.</p>
<p>The concept of external ties can be explored within the CoP processes framework as a loose connection to other components of diverse CoPs. These share any or all of the following: historical roots, related enterprises, institutional ties, similar conditions, members in common, shared artifacts, geographical proximity or interaction, overlapping discourse styles, or competition for the same resources.</p>	<p>Clinical Psychology and Human Organizational & Development (HOD) students bring in their own CoPs to bear on the educational process by arranging to do either case studies or practicums that are required for their PhD programs. Fielding administrators and faculty respond to external accreditation reviews. Both individuals and the institution propose to external granting bodies for research support and write reports of these activities. Alumni of Fielding both contribute to the ongoing mission of the University and interact as a social network. The picture shows each of these interrelated to Fielding.</p>
	<p>"In the clinical psychology program we also rely upon a fair degree of face to face work. I mean clinical practical training, working with clients, requires that you get into a place that you can be supervised by someone; you work in a clinic or some kind of setting like that. But right now at least telehealth is sort of a new blip on the horizon" (PSY13F).</p>
	<p>"Since I'm doing my research in Israel, and I lived in Detroit, an Israeli said to me: "Well, how can we collaborate? How will we be able to share the information? And I said: "I'm very comfortable doing that, because that's my whole way of life at Fielding, is by sending other people something to critique and getting their answers back and integrating them." So I think it has made me, overall, a stronger researcher and practitioner, because I can communicate, you know, writing things out succinctly and clearly, and being able to then communicate that to somebody else in a way that they can understand it. So it's helped me focus" (HOD8S).</p>
	<p>"The only data that I can think of that we shared, that we created together was when we did a little mini research activity, a research session: they sent us out for a day to collect any kind of data we wanted to. So there were three of us that went into a restaurant and we made observations around the activities in a restaurant and we wrote those up and brought them back to use that data for simulating a research exercise. We posted some of the results on FELIX and then discussed it" (HOD7S).</p>

7.2.4 Learning Processes¹⁹

<p>Learning in a collaborative community can be viewed as a process, using Wenger's theoretical lens of a Social Theory of Learning.</p>	<p>In Section 3.4 we described Wenger's Social Theory of Learning which posits learning as the centerpiece with satellite elements of community (learning as belonging), practice (learning as doing), meaning (learning as experience), and identity (learning as becoming) (Wenger, 1998). As we can see from the following direct quotation, this theory is supported by our case study.</p> <p>"Since there are people in my cluster (<i>learning as becoming</i>) where I live (<i>learning as belonging</i>), I have a lot of activity (<i>learning as doing</i>) with people in person. I am highly into technology so I am online constantly whether I'm at work or at home and I love that type of format because I'm so used to it and I find that it gives me a lot of interaction with people on a regular basis. Clusters usually meet on a monthly or bi-monthly basis and we meet for a few hours during a Saturday if not longer...we come together either to do learning (<i>learning as doing</i>), de-briefings about where we are and what we want to do in the future and any kind of commentaries or questions that people want to have. So it's a face to face support group, which is really nice" (HOD4S).</p>
<p>A CoP's way of practicing their pursuit of an enterprise of mutual interest informs the process that the community uses to learn together.</p>	<p>At Fielding everyone is pursuing creation of knowledge in order to get a PhD, so that is the mutual issue. They are practicing their pursuit, i.e. getting a PhD, and that is the process that holds the CoP together.</p> <p>"The cluster groups or the group KAs really encourage you to get a group together and not try to do all the KAs on your own. And they're very flexible about how those groups are formed you know. Any person can form a group as long as they can get a professor to assess the group and enough members to agree to do the work" (PSY1S).</p>
<p>Distributed CLCs benefit by a start up methodology that takes into account the social characteristics of learning, such as knowledge sharing, level setting, and community building, including concepts of common ground and fostering trust.</p>	<p>The FELIX collaborative learning environment provides the Fielding community with the start up methodology, which sustains its mission. The description from an HOD PhD student mentions how FELIX helps to establish common ground, enable knowledge creation and sharing, building trust and a community environment. One example of the indoctrination of new members through the OPS helps to build trust.</p> <p>"On an individual level it (<i>FELIX</i>) connects me with resources that I can use to drive and enhance my own learning...like library services or information other students have posted on the forum or discussion areas. It also enables me to learn and understand and read about what it takes to move through this process. From a collaborative level, it enables me to solicit feedback or comment on other people's questions.... The program structure supports the sharing of knowledge and the creation of new knowledge. Somebody would put a thought out there, and several people would be involved in an online dialogue with a shared understanding or perception or hypothesis about what was happening and why it was happening. (<i>This shows they are trying to create a common ground and there is an existence of trust between the CLC members</i>)."</p> <p>(HOD6S).</p> <p>"I began to understand and trust the collaborative learning methods at</p>

¹⁹ Overlaps 7.2.7 ICT; CSCW & CSCL, 7.2.6.3 Technology Supporting Structures, and 7.2.15.1 Value; Common Ground; Building Trust.

	<p>Fielding at OPS. Trust is an interesting thing, because it builds over time. So one doesn't immediately...I don't know what levels of trust I will grow into when I actually experience some of the seminars and collaborative learning. But finishing a KA, like 753A, I was collaborating with my faculty in order to complete that, and that was a very satisfying and confidence building experience, so trust is building most definitely" (HOD10S).</p> <p>"I guess trusting probably was after I did my first KA, my first group intensive" (HOD3S).</p> <p>"I would say it was probably during my second year. I think my first year I was not that comfortable or feeling that trust, just becoming acclimated, beginning to understand the model of, the learning model and taking my ownership in that model" (PSY12A).</p>
<p>Computer Supported Collaborative Learning (CSCL) techniques that enhance learning in a large collocated classroom can be translated into distributed CLC enhancements.</p>	<p>Some examples of CSCL techniques include sharing documents electronically, critiquing other student's work, sharing the syllabus and class assignments. Our informants observed that traditional universities typically use software like Blackboard or WEB-CT to do these CSCL sharing techniques. The same thing is being done at Fielding through FELIX.</p> <p>"On types of learning media used: FELIX online forums, virtual offices environment. Some colleagues use WebCT, Blackboards. Telephone conferencing as an alternative to video conferencing" (HOD14A).</p> <p>"It (FELIX) allows us to communicate with each other individually, or faculty members with peers, and allows students who are new in the program to communicate with students who are older in the program, without public disclosure necessarily. It allows us to take classes online" (PSY9S).</p> <p>In the following quote we also find that although a lot is working, there is room for improvement in the methodology for using the CSCL application.</p> <p>"We should pay closer attention to taking the results of the collaboration and having those available to students who want part of the collaborative, and this is something that we're also working on. It's kind of akin to if you're not part of the session, a way of having people who are not part of the session. By the same token some of the online collaborative work, they really do some really good things and I'd like to have a culture where there's also sharing developed. Or even if you weren't part of that online seminar, at the end of the online seminar, people could take out anything personal from the text that they didn't want shared but the rest of it would be shared in the online environment" (HOD14A).</p>
<p>Initial impact of CSCL on faculty is substantial but can be managed through focus on technology support and designing effective collaborative learning activities that use ICT.</p>	<p>The faculty at Fielding develops their own ways of using FELIX and other ICT to design effective collaborative learning activities. Additionally, Fielding offers a degree of technology support.</p> <p>"It's an information resource, and by that I mean that materials are posted. As an administrator I post materials pertinent to academic requirements and explanations and helpful hints and suggestions, examples of how people have met those requirements. FELIX provides an opportunity for students then to seek clarification to say, "Gee, I don't get it; this doesn't make sense." Or to dispute things and get some response</p>

	<p>to that. And the thing that's useful is that those are on, those being on the electronic forum, on FELIX, to some extent I don't have to answer the same question over and over again" (PSY13F).</p> <p>"Well there's the technology piece of it, you know. And then there's the social issues piece of it. And the technology, of course, I would like everyone to have broadband, video cams and all of these little pieces to work with it" (ADM1).</p> <p>"FELIX per se is really kind of used in two different ways. We'll say FELIX to everything that requires a log in to get to at Fielding. And sometimes more narrowly to the SiteScape software driven forum software. So I will say I'll take the broader interpretation of the two where library services are underneath FELIX. FELIX overall aids the students by providing information resources to them about Fielding, about the research process, about learning materials that they should be looking at, about knowledge areas that they should be studying etc. And that gives them a place also...and this is the narrower interpretation of FELIX...to exchange ideas with faculty with each other and to post their papers" (TEC1).</p>
<p>The Computer Supported Collaborative (CSC)—Teams' approach to learning is an important component of international global workforce preparation. There are a number of overlaps between the CSCL and CLC models, and lessons learned can be shared as both movements continue to evolve.</p>	<p>Fielding recognizes that the Computer Supported Collaborative Teams' approach informs the University's outreach to international as well as nationally dispersed students and faculty involved with the programs offered. On the other hand, there was a message that Fielding currently employs the lowest common denominator with regard to computer and communications platforms, whereas other educational segments are taking a higher end approach, as we see from the following quote.</p> <p>"I know some universities are supplying people with laptops when they come in as freshmen so that they have the technology they need. I can't imagine what our tuition would be if we did that, but if everybody had the same level playing field, with their own technology, then that would be awesome" (PSY9S).</p> <p>"Well we certainly use email and meetings, and we use Forum Software, and when I say meeting that includes that WebEx. Well we didn't use in person meetings but we're talking about the online environment. So, email, NetMeeting and WebEx, that synchronous kind of thing, and many people do use instant messaging. And one of the things we make, whatever we use has to be available at an individual person's home for the most part. So we tend not to use much video conferencing. The other thing is we've got an uneven situation in terms of bandwidth" (ADM1).</p>

7.2.5 Protocols for Sharing Data

<p>Data sharing occurs through the community's documentation and tools.</p>	<p>At Fielding the protocol for data sharing is negotiated on several levels including the security and access controls within FELIX as well as the negotiation process that occurs when contracting KA's.</p> <p>This quote explains how FELIX is set up to limit and grant access based on a stockholder's seminar participation:</p> <p>"The creation process of how we're going to structure their online learning environment, what kind of group forums we have, how we're going to deal with them—I should say, we have online a form that's called a <u>Forum</u></p>
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	<p><u>Request Form</u>. And the faculty or students or administrators use this to fill out and request a forum. I put this together. And so one of the questions is, "Is this for forum members only, in which they would list it, is this for the community?" I will get a request for forums for special interest groups or (literary) groups or project teams and decide how, and we've got a few different ways to create forums. Deciding which of these we're going to use in which instants and whether we're going to stick them in the whole workplace or if it's open to everybody or make them small groups. So there's collaboration that goes around that" (ADM1).</p> <p>The following quote explains the protocol for sharing data about a KA with a faculty member before a student enters into a contract.</p> <p>"We use a tool that lays out all the curriculum and you see what the professors are looking for when you contract. You can also have separate discussions with somebody you want to have as your faculty assessor to really determine what should be in that contract. We have three parts to the contracts: an overview of whatever it is your area of interest that you're looking at; an applied, where you take a piece of what you're interested in and apply it to a professional or a more realistic type of environment; and the in depth part, where you take a piece of theory or something you have a deep interest, passion of in that grouping and write about that." (HOD4S)</p>
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7.2.6 Structures

<p>The concept of legitimate peripheral participation (LPP) is a structure by which new participants are able to join and contribute to the CLC.</p>	<p>As we discussed in Section 7.2.2 which is concerned with the concept characteristics of processes, legitimate peripheral participation (LPP), is a central theme. Again, in this section we revisit LPP in terms of a learning structure observed at Fielding. Given that the processes and people are distributed they require some sort of support to bring them together which is partially met by ICT and social protocols such as agreement on how to interact with regard to time, place to meet, rough agenda and so forth. LPP provides a means observed at Fielding for new students and faculty to enter the CoP on the periphery at first, and then gradually move into the center of activities through participation with others in the OPS, clusters, online seminars, and group KA participation. As we observed in the following quote, the online groups provide a way for people to become more active in the Fielding CLC.</p> <p>"The format (within FELIX seminar software) supports learning in terms of communicating to the entire school population about what's going on. People share information such as web sites that they've found. Sometimes people have little disagreements and express themselves, and it supports learning through dialogue and discussion of the different points of views" (HOD5S).</p> <p>This next quote from an HOD student illustrates how cluster groups provide a mechanism for coaching that help students move from the periphery into the CLC and take on a more active role.</p> <p>"Cluster groups, coaching, helping people figure out... using my experiences to share with other people to help them understand Fielding processes and help them move along in their work in areas that I feel experienced at, and vice versa. That was how I started learning. Also being a student reader on other students' committees" (HOD8S).</p>
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7.2.6.1 Social Structure

<p>Social structure explained through a theory of social practice in a CLC describes the interdependence between the learner and all the other members of the CLC engaged in actively negotiating meaning, resulting in the collaborative sharing and creation of knowledge.</p>	<p>We observed that participation in the Fielding CLC can be a range of very different experiences according to geographical proximity to Fielding (in California) as well as proximity to active clusters throughout the US and internationally. This experience can be anywhere from almost totally virtual to more of a socialized physically proximate group environment. In all cases the national cluster meetings which take place twice yearly, provide an important catalyst to collaborative learning activities throughout the year.</p> <p>“The larger group activities that I’ve done usually have formed at a national session, where we were thinking about doing something together and then we searched for a faculty that was willing to work with us. And in that conversation, I can remember a couple of times sitting out in the lobby with the group in the faculty constructing a contract concept” (HOD7S).</p> <p>“I’ve heard that collaborative learning in groups works very, very well for some people, so I’m looking forward to doing that on some KAs, or some sections of KAs. As I meet more people over the course of coming to more things, I have met other students who’ve said to me: “Oh, we should collaborate on X, or we should do this together. Maybe we could do something on that together.” So I can see where in the future, as I move along, that I will combine with people on studying something” (HOD10S).</p> <p>“When I first started the program I was involved with the clusters. I had a high need for that kind of community attachment” (HOD12S).</p>
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7.2.6.2 Pedagogical Structure

<p>CLCs use a learning curriculum as opposed to a teaching curriculum.</p>	<p>The Fielding pedagogical structure is a learner driven model by design.</p> <p>“There is a much stronger commitment on Fielding’s part for collaborative learning. It was mostly the students that would put things together and facilitate it and make it happen...now the faculty puts these online seminars together more...they’ve initiated it, as opposed to the students initiating it before” (HOD3S).</p>
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7.2.6.3 Technology Supporting Structures

<p>The ICT used by a CLC carries historical cohesion between the CLC members in all stages of their participation. Furthermore, the functional workings of the technology artifacts are made transparent to the CLC members.</p>	<p>FELIX is used from the starting point of entry into the community, which is admission into the PhD program, through all stages of student work, up to and including their participation as alumni. Private conversations can occur in special interest group areas of FELIX as well as outside of FELIX using a variety of ICTs. The following quote describes this activity within FELIX:</p> <p>"I was a part of a couple of special interest groups (on FELIX) where we actually used it as a way to do asynchronous discussion. The one that I was part of was a spirituality forum. We took turns moderating it once a month. There is another one now, Our Sister's Place, and it's all about women's issues. Usually it's one or two students who moderate it, and they have to have a faculty who okay's that" (HOD12S).</p> <p>We asked the informants: Which ICTs help to reduce the affect of distance on your PhD program? This student response encompasses a range of options:</p> <p>"Having the FELIX forum (software) definitely. Having access to Internet libraries and definitely email. For me that is the fastest way to find people in a way that makes it convenient for them as well so that you actually get to have conversation. There are times where we work as teams that we always have the option to do those things. So you can develop a collaborative learning (group), if you want to do that" (HODS4).</p> <p>Currently, the minimum basic technology requirement, also referred to as the lowest common denominator, is driving the use of technology for collaborative learning in the general Fielding population. The following quote by a Fielding administrator explains this approach, as well as acknowledging that there are segments of the Fielding CLC that are pushing that limit:</p> <p>"My personal philosophy is to go for a low common denominator, technologies that would be accessible to everyone. That's not everybody's philosophy. So we have a certain segment in psychology particularly making use of more synchronous, bandwidth intensive technologies, and I would include WebEx in that environment" (ADM1).</p> <p>We were interested in finding out how much of the ICT enabled Fielding CLC takes place in public spaces and how much in private. Additionally, we wanted to know what drives people to private conversations using ICTs? For example, why not enable instant messaging through FELIX as opposed to outside of it so the thread of private conversations would not be lost to others as potential knowledge creation and knowledge sharing processes. The following quotes shed some light on these inquiries, although they only provide the starting point for future more in-depth investigations.</p> <p>This student does use the online environment to perform asynchronous conversation with their cohort. Notice how it is a satisfying experience using a combination of FELIX and external means:</p> <p>"Chat back and forth view email and phone; chat back and forth on FELIX; get on the phone and work our way through FELIX together, "I'm trying to find this, do you know how to find it?" One of my colleagues (will</p>
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say), "We'll work our way through there together." Just discuss and chat about our studies and our personal things in forums like this" (HOD6S).

One informant plays two roles as a PhD student and a technologist with Fielding. Evidence indicates that when there is a CL group interested in employing more advanced ICTs they do so. The following quote is in response to a question about which ICTs she uses in her PhD program:

"WebEx software which is a web based software that allows for a group of people to come together via one web interface and ask questions and chat and share documents and show presentations and such. Telephones, of course, TCP/IP networking and web access, FELIX is already on here. A few of my colleagues and myself use NetMeeting for one to one meetings with camera and headsets and so on. Telephone, fax..." (TEC1).

Based on the research results we can pose the question: "Why are private conversations being carried on?" While this was not directly asked, the following quote clearly indicates that private conversation does occur and implies that the reason it does is because the chat function within FELIX is not enabled, although that capability does exist in the software:

"FELIX has the capacity of real time chat. I had one student who was from the United Arab Emirates and her entire dissertation was online. And we chatted once a week with Instant Messenger. Like I'm right now assessing with a group of three students who are doing work studies. And they're meeting like every two months face to face. They are engaged in email and then they have one meeting every week using Yahoo! Instant Messenger in which they're discussing their papers. And about every month or so I join them electronically using Instant Messenger" (HOD14A).

The interview process was structured to identify problems, concerns, issues, and opportunities for improvement. These two quotes from Fielding administrators reflect a high degree of understanding and are representative of a desire to raise the bar on ICT advances in support of a superior CLC environment:

"Well there's the technology piece of it, you know. And then there's the social issues piece of it. And the technology, of course, I would like everyone to have broadband, video cams and all of these little pieces to work with it" (ADM1).

"Fielding should offer better infrastructure support for students...and provide enough support so students could learn how to use the technology well; not just know which sort of tools to use, but actually use tools to maximum advantage" (ADM2).

These quotes from students and administrators are also reflective of the current problems with FELIX, all of which point to a desire for a media rich environment:

"FELIX provides informative data: study guides, policies...not a very alive or interactive tool...lacks speed, ease of navigation; need something that doesn't look like 1960s in its graphic design and layout; needs more efficient ways to find things. I just find it extremely cumbersome and difficult and not user friendly. I'm not a really big fan of FELIX as you can

tell.” (HOD1S).

”I think being an online environment hampers the kind of face-to-face work that people engage in just because... There’s a great area of study now called geographic sociology that things are different when you’re in the same geographic space” (HOD14A).

”Well you know you just don’t have the person in front of you. You don’t get all of the visuals, you don’t get the aura, and you know the atmosphere that’s created by the person, maybe the intensity of their interest or lack thereof. You know you don’t get that. You just get whatever they’re writing. You can only read one layer” (PSY1S).

”We have the WebEx, and we’ve done fairly instantaneous communication with people all over the country and in a couple of other countries at the same time, with statistical analysis. If there was anything that was going to be improved, it would just be we’d all have WebCams and could look at each other while we’re doing it. My only big complaint about FELIX right now, is the administrators have everything locked down, so I can’t communicate with work right now, and even signed on as an administrator, because of all the firewalls. Everybody’s protecting everybody from bad things, but now there’s been problems accessing” (PSY9S).

We asked our informants to describe their ideal ICT environment to better understand the optimal requirements for technology to support the community. The range of answers was broad:

”I have an opinion from my personal use that FELIX is complicated to figure out for a first time...for a new, first year student. Anything that I can attend that helps me understand how to sort through the layers upon layers in FELIX, it’s good, because it’s just very difficult to decipher where things are, exactly” (HOD10S).

”We’ve got to go to some kind of same time or web chat, I think it would be so much more helpful. There are some times where that real time conversation is important, either video conferencing or some kind of web chat so that you can continue those discussions. The thing I would say I miss the most in Fielding is real time conversations” (HOD12S).

”It would probably include a place where you could actually do a web cam environment at some point, you know. And that would be your choice, that you could enter that forum and have a conversation that was synchronistic, as much as it can be on a web cam” (HOD4S).

”I think moving into a bandwidth capacity that would allow us to do what ought to be real simple, like a PDF document of a chapter or something like that, but then beyond that into video files and pictures and things like that, would certainly be an advance in terms of learning. Another advance that I think would be really important and that’s personally frustrating me at the moment, is where to place a lot of documents. When I was teaching in traditional universities students would come by the office, sit in the corner, read my books, as a way of getting

	<p>immediate access to documents. What I'd like to do is to put a lot of my documents into some sort of digital form where my students can access it. And doing this now on my own private web site as a way of achieving this, there are a couple of problems with that. One is I have to pay for the web site myself - and the other is copyrighting because that web site's in public domain and I think the copyright laws are different if it is restricted to the students within a program" (HOD13F).</p>
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7.2.7 ICT; CSCW and CSCL

<p>CoPs are a fact of social life providing an important venue for negotiation of meaning, learning, and identity development. ICT is an enabling factor in the complex interactions between the local and the global that must be carefully considered in the research into CLCs.</p>	<p>Fielding was selected as the subject of this case study due to the success of the University in balancing the local with the global, mediated through the use of ICT. We see in the quotes below by a Fielding administrator and student that care has been taken to present a venue for the characteristics mentioned to the left.</p> <p>"Different programs have different designs: original Masters in Organizational Development initially designed to be online, so very tight structure meant it was clear what and how students were to read, write, and respond to each other" (ADM1).</p> <p>"The collaboration is a very important part of the motivation for a student to continue the learning process, so on a personal level, the collaborative learning is motivating, because you're sharing with other people in a learning process that everybody is energized with that collaborative energy. At another level, it's the sharing of ideas and concepts that broadens one's horizons. And so, I think, just in terms of my own individual perspective, I think I have a pretty good understanding of this area. And then someone else comes in and gives me a different perspective, and I grow by leaps and bounds by incorporating those different cognitive views of things" (PSY6S).</p>
<p>The theme of viewing ICT's impact on CLCs in terms of social and technical relationships bears directly on this research and is explored from many different aspects of literature review and theory.</p>	<p>There are various types of literacy (tool literacy, research literacy and publishing literacy) that a person might need. The individual also needs knowledge of how to act as a member of a community among all these technologies...</p> <p>"Regarding support, different platforms have different problems that people have, and there's not a uniform culture of use; everyone working at their own level of expertise.... Regarding communications, people haven't had enough time really to put together the norms for online communication in a way that is satisfactory to all (netiquette) " (ADM1).</p>
<p>Collaboration at a distance is saved by face-to-face meetings, where goal explanations and problem solving reduce the impact of obstacles.</p>	<p>"I feel that there is richness to our communication that happens face to face that is not going to be the same as a text-based learning experience. Now I understand that the trade offs are that we are influenced by the visual aspects of people and there is also you know the group dynamics, the intimidation, I mean all of those things that happen in a face-to-face group experience that don't happen, you know, in a text base. But, I'm not really promoting necessarily a synchronous environment. I mean, it can still be asynchronous, but if we've got this richer more multimedia thing I think it would be much richer for me, instead of reading your message" (HOD9S).</p>
<p>Augmenting collaborative work at a distance by employing ICT enabled strategies will have a</p>	<p>"FELIX supports student learning by serving as a repository of learning resources. There's information on FELIX like study guides and expectations about the dissertation process and forums... also serves as a digitized resource room with all kinds of information, like information</p>

positive effect on group goal attainment and satisfaction with distributed learning and work.	about faculty” (ADM2).
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7.2.8 Membership Criteria- Sub-Concept of Organizing Processes; Identity Formation

CoPs occur as an integral part of daily life, yet the CLC, a subset of the CoP concept, does offer a more focused concept of membership through the sharing of mutual goals for engagement as viewed through a Social Theory of Learning.	<p>At Fielding there is ample evidence that the concepts of a Social Theory of Learning, as discussed in Chapter 3, are at work through the many planned opportunities students have to learn from each other and more advanced participants in the CLC, at different phases of their graduate studies. The following quote reflects this:</p> <p>“There are national sessions, research practice sessions, governance committees with student and faculty involved; many have had good experience of not only interacting with new students and faculty but experienced students as well... Being on other dissertation committees as a student reader and having a student on my committee ... we interact by phone and email in between sessions ...It’s kind of a support system. Groups are organized in various ways: some faculty will suggest pairing with another student with a similar interest, there are also intensive sessions when a group of students will work with a faculty member and form a group with that collaborative learning experience” (HOD1S).</p>
CLCs depend on membership and each may define membership on a scale of fully informal to fully formal criteria. Membership is tied into the concepts of both the individual and the CLC’s identity and LPP. The role of members changes over time and can vary between more internal and external expression.	<p>Here we see that within the Fielding CLC membership there are many subject matter experts that bring an individual identity and inform the group identity of the University.</p> <p>“I think with the shared knowledge piece, especially since the population that comes to Fielding are people that have been within the field themselves for some time that the shared knowledge comes from their expertise and the faculty’s expertise, and then each individual student’s piece. That becomes a shared knowledge that we all learn” (PSY5S).</p>

7.2.9 History:

7.2.9.1 Historical—Cultural Theory

The historical theory of social practice focuses of the process of learning transforming the CLC members.	<p>The Fielding founders, as described in Chapter 6, began the enterprise to fill a void for mid-career adult graduate learners participating in a CLC as a transformative endeavor. The study found evidence that this goal is now a practice.</p> <p>“I think our dissertations themselves are not done in isolation but developed collaboratively. Even we’ve had collaborative dissertations in which people have worked together online. But there are many areas in which we are developing new knowledge. There’s a research</p>
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	methodology that's very rarely used in the United States and it's Phenomenography ²⁰ which is not phenomenology but Phenomenography that is primarily used in Australia and Scandinavian countries and we've had probably about 12 dissertations that are using Phenomenography, particularly in the online environment. Our folks are now being invited to Scandinavian countries to share what's being developed here so there's a lot going on" (HOD14A).
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7.2.9.2 Historical Perspectives on Communities

CLCs go through reproduction cycles that can be viewed from a historical perspective through its artifacts, which carry both a utilitarian as well as a social history of the CLC, thus insuring both evolution and continuity between generations.	This would be an example of evolution, but a barrier to the continuity: "Every one to two years they seem to upgrade FELIX and the look and feel changes. So, it takes a little bit of time to get adjusted to that and then it will change again, so it's a little bit too dynamic for me. And it also, they've done that same thing with the referencing, the searching capability. So you get used to doing something a certain way and you can do it very quickly, but then when they change it, it has become more confusing and taken longer" (HOD7S).
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7.2.10 Resources

CLC resources can be viewed in terms of access to a learning curriculum that is interwoven into the activities of the community. The access begins as LPP and allows the learner to become more involved in the activities of the CLC, which in turn leads to more access to the learning resources of that CLC.	As we have seen in Chapter 6, as well as many of the comparisons between the general CLC concept characteristic and Fielding's characteristics, FELIX is the primary access resource. "FELIX is the platform that we use for our online seminars, so there are actually structured learning experiences. However, as all things, it's influenced by the willingness and presence of one or two people to really make it a rich learning environment" (ADM2).
CLCs mutual engagement over time is reflected as a historical resource on which to engage and build negotiated meaning.	FELIX has evolved over a decade of mutually agreed upon upgrades and enhancements to become the centerpiece of the Fielding resource offerings. It is through the forum software that much negotiated meaning (i.e. knowledge creation) takes place. However, Fielding's FELIX is augmented in an important way by the national, regional and local cluster meetings that occur throughout the year as the following quote indicates: "We're doing a group KA, it's going to be assessed at my house. And I do cluster group meetings and FELIX seminars and winter, well I went to this winter session, summer session, there were group meetings where we presented materials that we had already gathered. The cluster groups or the group KAs really encourage you to get a group together and not try to do all the KAs on your own. And they're very flexible about how those groups are formed you know. Any person can form a group as long as they can get a professor to assess the group and

²⁰ Phenomenography is an area of research that focuses on identifying and describing the qualitatively different ways in which people understand phenomena in the world around them.
<http://kerlins.net/bobbi/research/qualresearch/bibliography/phenomenology.html>

	<p>enough members to agree to do the work. So that's, and that's been my experience, that they really encourage that as a not so much... I think they encourage also FELIX that it's not really that critical" (PSY1S).</p> <p>"We'll read our research paper and get feedback on it and somebody will give you some ideas. I belong to one of the regional clusters as well, so we always have some good solid shared knowledge creation type of activity, whether it's learning together or somebody leading an educational seminar. I can't think of one national session I've ever gone to where some faculty member stood and talked for three hours. You're always doing something, sharing some part of yourself and learning with others. It's more of a shared knowledge, equal footing kind of experience" (HOD5S).</p> <p>On knowledge sharing:</p> <p>"There are a number of FELIX forums that provide information sharing; I do believe that we are actually in some areas creating new knowledge. Because during these sessions we are really looking at, you know, so-and-so is offering these theories and so-and-so is offering these theories and what are sort of the intersections or what are the conflicts or, you know. So there is a discussion that really is new knowledge" (HOD9S).</p>
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7.2.11 Templates: Models and Exemplars

<p>There is not one specific template that illustrates the Collaborative Learning Community.</p>	<p>We found that Fielding is definitely consistent with the concept characteristics of a CLC CoP. However, there is space for a continuum of learning styles which even allows a solo learner to function in the environment at the one end, and moving ever further to fully collaborative at the other end of the spectrum.</p> <p>"Fielding has a learning model that incorporates the cluster concept. It also has forums, not only for courses, but also structured around shared professional or academic interests" (ADM2).</p> <p>"FELIX is a forum for discussing the literature and coming to conclusions about what is good about it, what is bad about it, and what needs to be furthered" (PSY5S).</p> <p>The following quote reflects on the possibility of doing a joint dissertation:</p> <p>"If I wanted to do a joint dissertation with somebody, and I had good reason to, I think I could. But otherwise, at the dissertation level, doing a joint one doesn't feel encouraged. Well, I think based on the philosophy. I'm not sure if that's Fielding. A lot of it's based on the philosophy that your PhD has to be original work. So how do you share original...how do you each find your own piece of it?" (HOD8S)</p> <p>The following quote from a Fielding administrator is about accommodating the self directed solo learner, in response to a question about whether there was anything in Fielding policies that discouraged collaborative learning:</p> <p>"Collaborative learning isn't for everyone and it's quite important that we</p>
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	<p>maintain the self directed nature of our program. We do have students that come here to work independently. And right now Fielding's policy and the school of HOD's policy still support that student directedness that it's up to you to figure out the best way for you to learn" (HOD14A).</p>
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7.2.12 Community Descriptions

<p>CLCs are documented as single—case studies. A community is not a single block, but communities within communities.</p>	<p>Temporary groups come together and disband such as the collaborative KAs. Our study provides information about how people join the Fielding community, a KA community, a geographical cluster community, and all of these examples, reflect how these communities overlap and talk to each other.</p> <p>On sharing literature through FELIX:</p> <p>"Now, there are also on FELIX, there are a variety of forums that are set up from time to time which will say, "I want to start a discussion topic on this. Would anybody be interested in joining?" (HOD9S)</p> <p>On joining the Fielding CLC:</p> <p>"I think for some students, not particularly me, but what I've heard is some students have a hard time getting started and I would say require that from the beginning. So start people off on a collaborative model. Get some groups together, pair people up, I don't know, by region or whatever and just get them started that way. And then they could choose whether they wanted to continue that way or not" (HOD7S).</p> <p>On designing a group KA:</p> <p>"I've set up a number of group contracts – I have learned, first of all, that I look at the course syllabus to find out what the pertinent knowledge areas are from that. So I use the syllabus basically to design the learning objectives that I'm going to include in designing the contract" (PSY6S).</p> <p>On the role of the geographical cluster community:</p> <p>"My anchor group has two from California, one from Wisconsin and one from Ohio and myself from Michigan. We are a group that the basis is literally an anchoring. It's a reference point to give stability and connection and relationship and kind of getting you through a time that's really very, very intense. When you first start work you have so much information that you are trying to process. You then go home and start into your studies and then you have a geographic cluster group. Those are individuals you meet with once a month. Whatever that time is that's designated and you do some sort of enrichment activity within that. It might be a speaker, research, dissertation, final oral review, presenting dissertation material. And that group is meant to keep you connected and to keep you from becoming isolated. Because this is a program that you could become isolated in if you're not careful. Because you don't have that face to face contact, you're not sitting in a classroom and it's very self elected" (PSY3S).</p>
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7.2.13 Physical Description

<p>CLCs each have unique physical descriptions.</p>	<p>The Fielding physical description is that of an ICT enabled globally distributed collaborative learning community.</p> <p>“In some cases there’s a weekly phone call to collaborate and to keep track of someone’s progress, to provide a support system for them or me. That also happens at national session where we find out where people are at and often, I remember more in the beginning than now, that I would pick up tips with faculty work with certain references that are good, certain approaches that we could consider, certain seminars we should take.... I think the adult learning model that Fielding uses encourages collaboration and it doesn’t encourage hierarchy” (HOD7S).</p> <p>“Interaction with fellow students is good in that, if I already know the student, it enhances the relationship with them. If I don’t know them, then the next time that I see them at some national session or research week, it enables me to get acquainted with someone that in some sense I know something about anyway” (PSY6S).</p>
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7.2.14 Roles: Role Models, Leaders and Leadership

<p>The concept of roles, like membership, within a CLC occurs on a continuum of learner to expert. Within any given conversation an actor may occupy any one or a number of different roles in the exchange. This implies benefit to all members by virtue of any of them being capable of contributing to the CLC and of learning from others.</p>	<p>“Colleagues actually contribute to each other’s professional life as well. I actually work with some people in my professional life that are also PhD students at Fielding and that enriches it further... We not only have the Internet, but a lot of face to face time to do those collaboratives as well” (HOD4S).</p> <p>“All of the students that are part of a faculty’s virtual office are invited to look at and to review papers of others students. So it’s the real important piece there is also sharing information among students. And that means that the comments that one faculty makes on your paper, will also be available to other students who want to read it” (HOD14A).</p> <p>“I would say that there’s a very accepting atmosphere for creating and constructing your own way of doing things. And it seems that no matter what angle one comes...or I have come at something so far, there’s a faculty member who’s open to hearing what that is, and making suggestions on how to: “Oh, make sure you connect with this person. Oh, make sure you connect with that person.” So there’s a lot of referencing back and forth and around” (HOD10S).</p> <p>“I’ve gone through a number of my classes with a handful of those people from the anchor group. There were six of us and for the majority of my classes, three or four of us, or even five at times have been going through classes together. Which is just awesome, because then it isn’t up on you to always figure out what faculty member you’re going to try and assess with, and it’s not always up to you to have to go and find the faculty member, it’s somebody else’s turn. And plus, I will always preach that the group KAs are the ones where you learn the most, because you’re not only getting faculty input, pretty much just grading your own individual work, you’re getting input from all of these extremely experienced and intelligent people” (PSY5S).</p>
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	<p>"On a regular, ongoing basis, it's not uncommon for me or a fellow student to indicate something they have read has been helpful, and they will post that. And if it's something that I'm interested in, then I will procure a copy, whether it's the journal article or the book. And so, it's an ongoing process of evaluating the resources" (PSY6S).</p>
<p>Learners can be represented as apprentices and teachers as masters. As noted above in the discussion of membership and roles, this is a fluid designation within a CLC.</p>	<p>"I certainly feel like everyone at Fielding is very willing to work with you. You just need to make clear what you need. So when I get going further with my dissertation and my topic, I need to put my feelers out and say, "This is what I require from you." And then almost 10 times out of 10 faculty and friends and everyone has responded wonderfully" (PSY5S).</p> <p>"There's a lot of learning that takes place, areas that maybe a student wasn't even aware of that is a part of the reading; different levels of understanding, which is then conceptualized, and the whole cognitive process is an enriching sort of a thought process that moves a person from one layer of understanding to another. And interacting with fellow students is a part of that, because I may be focusing on a particular area of multiculturalism, for example, and other students are looking at other areas of interest to them, as it pertains to multicultural. But it's that integration that allows them a mutual understanding" (PSY6S).</p>
<p>CLC design, whether strongly hierarchical or relational, will gain in knowledge creation proportional to the level of negotiated meaning permitted. The leadership role is one factor in this equation.</p>	<p>"With instances such as these where we can come to sessions or get involved online with other people's research, I think that Fielding does a good job of making it feel like there's a camaraderie piece, that we want to help each other out. And that's definitely a good support system. Even just with knowing who has sort of pioneered practicum sites, or internship sites, they do a good job of allowing that kind of camaraderie and you know getting others into those positions with that" (PSY5S).</p>

7.2.15 Collaborative Knowledge Creation

<p>The concept of learning as a transformation of knowing opens the way to knowledge creation in a community.</p>	<p>We have seen a number of examples and explanations above on how Fielding fosters a collaborative knowledge creation environment through the FELIX forum software interface, cluster meetings, and ad hoc study groups. Here is another example:</p> <p>"Fielding encourages networking and collaboration ... on a regular basis... I've had several faculty members that have encouraged me to call other people in other disciplines in other schools and find out what's out there. ...I have had a great time networking around this world with people in just a short time and found that within the PhD community, if people find out that you're a student and that you are developing something or just need information, the community appears to me to be very collaborative and open to helping" (HOD2S).</p>
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7.2.15.1 Value; Common Ground; Building Trust

<p>There is an underlying theme in the literature of CLCs of mutual engagement (a.k.a. common</p>	<p>Above in Section 7.2.4, we see a number of examples reflecting the development of common ground and trust within the Fielding CLC as an integrated process within the University. These are basic values of the case study subject, also documented at greater length in Chapter 6. Two more examples follow from an administrator and a student:</p>
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<p>ground) and benefit from membership within a CLC that is a function of value attained for time invested.</p>	<p>“There’s individual and interpersonal respect and caring...there’s the kind of diversity and richness of experience that people bring here ... It’s one of the main selling points for Fielding” (ADM2).</p> <p>“I’m interested how others view life and just find them enriching in life and in general. I don’t think I’m in my cluster as much as I should. But especially at national sessions, and even some of the research sessions, it’s just a great time to get a bunch of people that are like-minded together and throw around some ideas and just enjoy each other’s company” (PSY55).</p>
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As we have seen in the preceding discussion, Fielding demonstrates all the characteristics of a community of practice and a learning community, as derived from the current literature on communities and summarized in Chapter 2.

7.3 ICT at the Fielding Graduate University

This section describes the role of technology at Fielding. Since this is a fully distributed CLC the use of ICT is essential to Fielding’s operations. As shown above in Section 6.2.1.2, the primary ICT tool for interaction between the students and student and faculty at Fielding is FELIX. In this section we will summarize the level of satisfaction with Felix as a tool for collaborative learning at Fielding. In Section 7.3.1 we present the analysis of the interview data collected in response to questions designed to elicit this information. The specific questions asked of the interviewees were:

- Are there specific technology improvements you would like to see in FELIX?
- Is there anything you would change or improve about the Fielding collaborative learning environment?
- How do collaborative technologies help you in your program?
- Which ICTs help to reduce the affect of distance on your PhD program?
- What are the current short-comings of ICT in reducing the affect of distance?
- If you could design an ideal ICT environment to aid your collaborative learning for your PhD, what would it look like?

In Section 7.3.1 we group the quotes together to focus the inquiry into specific areas according to the FELIX architecture, represented in Table 11, which follows:

Table 13 FELIX: Functional Architecture

Resources	
	Help Desk
	Administrative Services
	Directories
	Library Services
	Provost
	Research Community (Conference and Seminar Proceedings)
	Sessions / Events
	WEBER (Academic Records System)
Workspaces	
	FELIX Summit Discussions and Document-Sharing Forums
	School of ELC
	School of HOD
	School of Psychology

7.3.1 What's working? What's not working?

In this section we refer back to the FELIX functional architecture, as described in general terms in Chapter 6 and more specifically in the table above. For each functional component of the architecture we discuss how well that component is working and what kind of improvement the stakeholders are seeking. A specific example we will see repeated is that many of the Fielding participants may have access to more advanced ICT than required.

Table 14 What's Working? -What's Not?

Resources		What Works?	What Doesn't Work?
	Help Desk	Tech support is available via a telephone or email interface.	Remote support for distributed users is limited. Faculty and students would like more support to configure new systems and solve problems.
	Administrative Services	This menu provides links to and A-Z site index, student links to many different resources and activities: advisors, academic calendar, travel resources, finance and financial aid, Fielding store, IT Help Desk, human resources, policies and student health insurance.	This study did not specifically target the area of administrative services and the information gathered does not reflect specific problems in this area. <i>(Help Desk is discussed separately above)</i>
	Directories	FELIX houses links to many different directories, including faculty and student rosters, forums, school programs, and alumni.	Students report that they do not like it when any part of FELIX is upgraded or reorganized. It takes them a while to learn to navigate the new system.
	Library Services	Like the Help Desk, Library Services are staffed with knowledgeable staff to help students find resources. Students value the availability of periodicals and books through the library.	In some areas of HOD and Psychology more resources are desired. This quote from a Psychology student implies that FELIX could benefit from perhaps outsourcing the search engine component:

			"Although I have not yet fully conquered the system, it's complex, and I can Google faster than I can go through the library services (PSY4S)."
	Provost	The Provost is an active and accessible member of the Fielding ICT enabled CLC including forum administration.	All informants were either neutral or complimentary of the Provost function within the CLC.
	Research Community (Conference and Seminar Proceedings)	The goal of the research office is to facilitate the development of the research community and culture at Fielding by supporting faculty, students, and alumni seeking to obtain support for their research under the auspices of Fielding Graduate University. There was informant evidence that PhD dissertation research benefited from the grant activity of the faculty and that student interest in grant application was fostered at Fielding.	The interviews did not directly reflect how Fielding's ICT enabled distributed CLC specifically provided a collaborative research infrastructure or that distributed collaborative research is currently a primary goal of the University. While not specifically a problem, this may be an area where improvement to the distributed ICT research environment will provide benefits to the stakeholders.
	Sessions / Events	There is consistent satisfaction with the national summer and winter session format provided by Fielding. Providing a framework for geographically distributed clusters is also contributing to Fielding's PhD student advancement. There was also information about a purely distributed cluster for students that lived beyond reasonable travel time from a geographical cluster, providing them with necessary community support.	There is some evidence that ICT enabled distributed sessions and events in a richer versus thin media environment contribute to the success of students completing KAs and moving through the program at a faster pace. This richer media environment is not standard within the Fielding CLC and there is some institutional resistance to moving beyond the lowest common denominator in ICT for the faculty and students.
	WEB-ized Enterprise Resources (WEBER) (Academic Records System)	Provides faculty and students access to up-to-date information from Fielding's databases.	Students would like to have a more defined roadmap of their course requirements, including the most expedient way to meet them.
Workspaces			
	FELIX Summit Discussions and Document-Sharing Forums	The online forums play a very important role in creating and sustaining the ICT enabled distributed CLC. The participation level of the stakeholders varies from very frequent to seldom, depending on position in the University and in the program of study. This is the area where most ICT enabled knowledge creation and sharing occurs.	This quote from an HOD student serves to summarize the areas within FELIX that can be improved: "Everything has just changed in the access, and it's another new learning curve. But once I'm comfortable with the technology, I'd like it to stay constant. On the other hand, I like all the new capabilities that it gives you, so I guess I'm willing to put up with the learning curve to have the headers, the main links on the Summit and on the HOD program pages. I can

			never figure out how to get to those key procedures and requirements of Fielding. It's difficult to search for what I'm looking for, when I know that there are things I've seen before, and I haven't bookmarked it. If I use the search window that tells you to put something in, you just get a raft of titles and links to things that sometimes are totally irrelevant. I can't find what I'm really looking for in what pops up (HOD8S)."
	School of Educational Leadership and Change (ELC)	The Ed. D. program was not part of this study. This is a program area that may be studied and compared to the existing case in the future.	N/A
	School of Human Organizational & Development (HOD) in this section)	Each school has links to their policies, learning plan, governance team, and individual forums tailored to the needs and interests of the program. This student quote explains how the HOD forum area is used to share literature: "My anchor group stays in communication. We've formed our own forum. And when one of us finishes a KA, we post our papers for the others to read and review. So our bibliographies are in those papers, and our citations are in those papers (HOD10S)."	We discovered that external communication via email and instant messaging creates the opportunity to lose knowledge creation and sharing opportunities. This quote from a Fielding HOD student and administrator illustrates that point: "I think what it would look like would be a place where much more of the important, where all of the important communication would occur on forums so that it would be preserved for people who are not present at the moment. And the email would be virtually extinguished (HOD14A)." There is a chat option in the FELIX forum software, but it is not enabled. There is no internal email option that was discovered during the case study, though this may be an area of improvement to explore.
	School of Psychology	The forum in Psychology supports collaborative learning, as observed by this administrator: "Collectively it helps through the forums that we have for communication as well as like committees, you know, for committees, information, passing on information and the forum dialogue (PSY12A)." The same administrator also points out the need to include teleconferencing in the collaborative ICTs:	Activities such as email, instant messaging, teleconferencing, and document sharing occur outside FELIX. This presents an opportunity for improvement. In Section 7.2.6.3 we reviewed the need for virtual literature sharing to mimic a real-world office environment. The following quote also shows how students go outside FELIX to share literature: "We've agreed to share our papers, written on any topic of media and set up a separate forum. One of us has a server, access to a big server, and he's already created a single

		<p>“We also have forums for our faculty and for each community and we also use for our, when we’re planning, when we have planning sessions and faculty come together to plan for a session, we use a lot of phone conferencing (PSY12A).”</p> <p>The forum venue is also used to enhance the WebEx environment:</p> <p>“I’m one of 11 and the second one I think there are eight of us. And although we meet on WebEx for classes we have very active forums as you can imagine with that many people. We have lots and lots of discussion (PSY4S).”</p>	<p>source email address that we’re all using. I must get every day two or three different things that people want to share that they’ve seen in the press or some other magazine, they found on the Internet or something. So we’ve, I’ve got parallel things going outside of FELIX with my fellow students. Some of whom I’ve never met, yet (PSY4S).”</p> <p>Even though the need for more document sharing structures is evident, the preceding quote makes a positive statement about the Fielding CLC, as students are able to figure out these collaborative ICT solutions on their own.</p>
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Table 14 above helps us to identify areas for improvement as well as areas that help us to understand the long-standing success of the Fielding’s ICT enabled learning architecture.

Next, we focus in on one KA cluster group that utilized their more advanced ICT.

7.3.2 Focus Exemplar: A More Advanced ICT Knowledge Area (KA) Cluster

This example of the value of a media rich collaborative ICT bears on our initial interest in understanding how to improve the CLC with ICT. It is only one instance, but as we will see the description itself is both rich and compelling evidence of what can happen when a collaborative learning group is enabled by the faculty educator and facilitator. The faculty member providing assessment for this KA cluster group provided a web enabled video conferencing system so the students could see everybody involved. The system also allowed for remote desktop display, so the students could observe the professor’s computer screen. This collaborative KA started with 12 students. The narrative below is modified to honor the informants’ confidentiality. It describes how several of the 12 KA members banded together and created a sub-community. This allowed them to progress at a different, faster pace than those that did not have, or would not invest in, the advanced ICT options (such as video conferencing), or did not have the time to adapt to the distributed ICT environment.

It (*Statistics*) was the most wonderful course here, interactively with the computer and the way that worked, the professor used a few things. She is very advanced technologically with the computer. We used voice, so we were all connected by voice. And actually, through this course I made very good friends, two friends, who live in different states from me and from each other.

One was in California, and the other was in Arizona; and I'm in New Jersey. So it's East Coast, West Coast. There were 12 of us in the course. There was somebody up in Canada; three, I think, in Canada, but I only remember one. I don't know where the other folks were from. Three of us got close; we did study groups. Jennifer, who's in California; Marsha at the time was in Arizona; and I was in New Jersey.

The professor gave us instructions posted on FELIX to go to Yahoo Messenger, very specific instructions; how to download it, get your ID, give the professor the ID, the technology support person the ID—and this linked us all together as a class. And then, we had instructions to meet Friday evenings PST time at 6 o'clock; for the East Coast it was 9 o'clock Friday evening. Now, who wants to do this—nine o'clock Friday evening, but you know what? Some people complained about that, but I was so fascinated by the collaborative learning—that it was fine with me. My family knew and my friends knew, Friday evenings from 9 to 11, I was in class.

So we all met. We'd all log on, and the professor would be there, and we each came on fairly close to the time. And you could see everybody coming on with the Yahoo Messenger - you'd know everyone's ID on a buddy list. During that first Friday night class, right in the beginning, Jennifer out in California said: "Look guys, this is tough, statistics is tough. How about we do a study group every week Wednesday night? So let's meet online, go over our homework, we have it done."

So you used the same technology to have the study group two days before our class, and share how the homework was, did we not get anything, and use each other to study. And that was very different for me. I did study groups in college in my other graduate school experience. I missed the face to face. I'm actually specifically thinking about my first graduate school, and we had late night study groups at 9, 10 o'clock, which was actually the same as this only it's computer. And you do miss the physical and the facial although the professor also had the WebCam. You could see her. That helped. That was good.

There were 12 of us initially, and Jennifer said: "Look guys, let's come up with a time." We came up with Wednesday evening at seven. I would say seven of us showed up Wednesday night. The other difficult thing...but I don't know that it's so different from...I'm comparing it to my other graduate school, when we'd all meet in someone's room. I went to Smith College, and we were on campus over the summer, so we were in the dorms and we'd meet in somebody's room. And there was chit chat before we got down to work, messing around, whatever. So it was the same thing on the computer, and that frustrated Jennifer. It frustrated all of us. We wanted to get to work right away. So the reason I'm mentioning it is, some people left.

There was about a half hour...20 minutes or a half hour of chit chat. Time is valuable and people just logged off, you know, they left. And I

remember saying to myself: "You know what? I need to be successful at this. I want to be successful. I'm going to hang in there." And three of us hung in: Jennifer, Marsha, and myself. Maybe one or two that first night stayed in, but as the class went on it ended up being the three of us consistently meeting every Wednesday and going over the stuff. And again, there was chit chat, laughter, anxiety jokes. And then down to work. We were the three who passed; that's the end of the story.

In some cases, people with access to ICT create a mini-cluster, which results in a faster rate of knowledge creation (finishing more KAs more quickly, finishing their PhD work more quickly). They have a tendency to create a sub-cluster. There are two possible hypotheses for this activity. First, it is possible that having access to advances in ICT enables them to move faster. Second, it is possible that people that are highly motivated will access more uses of technology on the one hand and want to finish their KAs earlier.

It is important to take into account the diversity of the backgrounds of interview participants which are representative of the Fielding student body as a whole (see Appendix D) and their competency in using information communication technology. However, these people are geographically distributed and while they have different work and life contexts, by electing to participate in Fielding, they must necessarily collaborate. It is a requirement of the Fielding collaborative learning model that the participants learn through interactions with each other. Bridging technologies, ICT and airplanes, are the only thing that bridge the gap between their various locations and contexts. We must recognize that while the results seem to suggest that technology used is leading to better performance this could also be a function of people's competence and affinity for the use of technology. The preceding illustration discusses the use of technology in a small subgroup of Fielding. There could be different propensities to use technology by different people depending on their access to, familiarity with, and their affinity for use of technology. This may lead to more or less effective use of technology by different people.

Additionally, specific collaborative learning application requirements for technology may be different. On the other hand, in an ICT enabled CLC, for people to participate it is essential that everyone in the community is comfortable with a common minimum technology platform. It is always possible there will be some people who go beyond the minimum in the use of technology; however, unless the common minimum platform exists, technology enabled collaboration at a distance is not likely to work. As the data shows, in Fielding that common minimum platform exists and works. Continuing to improve this platform as technology progresses is an ongoing requirement for Fielding and all ICT enabled CLCs.

In concluding this section, we referenced representative interview quotes and highlighted those aspects of the technology that people generally agreed were useful or were working. We have also used quotes that highlight what was not working well, and what was not perceived as useful. For example, we found that the Digital Libraries resource is very important to all of our stakeholders. Some found the selections they needed, while

others expressed the need for expanded resources, local access to bricks-and-mortar libraries, and places to share their bookshelves online with KA cohorts. While the overall perception of the use of ICTs at Fielding is positive, we have also identified areas of improvement for perceived problems and issues. Those things that are not part of the architecture that can be added to are essentially a richer media environment that would require higher bandwidth, increased data storage, improved retrieval mechanisms (i.e. a search engine similar to Google), integrated instant messaging and video chat, as well as broader library services. In each area identified for improvement we did find pockets where these technologies were being employed successfully, forming the basis of early findings that an increased investment in these ICTs may lead to extending these benefits to the wider Fielding CLC.

7.3.3 Media Richness Preference Findings

We can draw some agreement from the case study findings with the concepts of the media richness theory, reviewed in Section 2.3.3, that the richness of the media is most appropriate when matched to the task at hand. In situations where knowledge creation and knowledge sharing were critical to collaborative learning, we found that the richer the media, the faster the pace of learning and the successful completion of KAs. On the other hand, the asynchronous aspects of FELIX serve the community in a highly satisfactory manner. Over 50% of informants rated the FELIX collaborative environment with a 5, representing the highest level of satisfaction possible. The following chart shows the rating breakdown for satisfaction with collaborative activities, on a scale of 1-5.

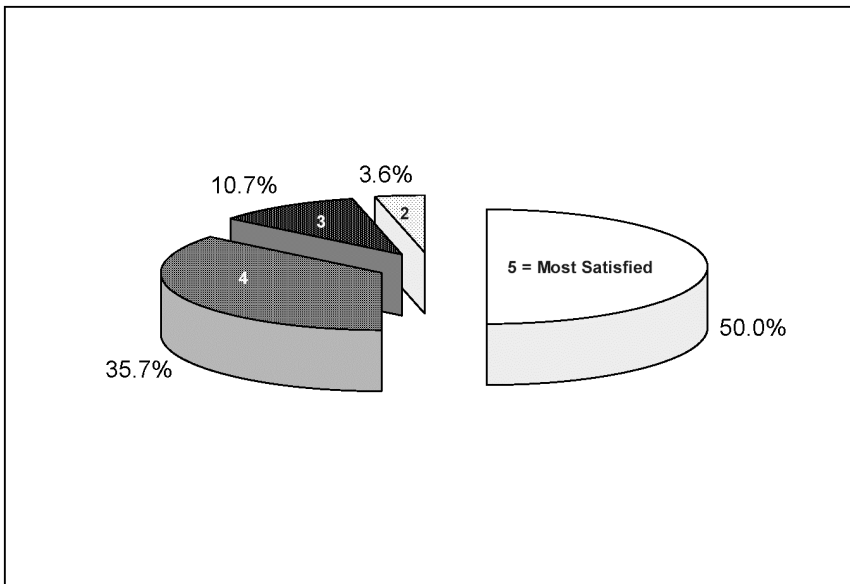


Figure 8 FELIX Satisfaction Rating Chart

This chart shows that 50% of our informants are highly satisfied with their collaborative environment, while the other 50% of the informants perceive the room for some improvement, with all of the satisfaction levels being equal to or greater than 50%.

We asked all of the informants, “If you could design an ideal ICT environment to aid your collaborative learning for your PhD, what would it look like?” A review of all the data shows that 75% are in favor of the use of advances in ICT, while 25% are either neutral or lean toward leveling the ICT to the lowest common denominator in the CLC. For example:

It would be where you could do face-to-face video. There’s a lot that we do via email back and forth whether it’s colleague to colleague or student to faculty and you lose the richness of the two way exchange (HOD6S).

Another question that provided qualitative data for these percentages was: “Are there specific technology improvements you would like to see in FELIX?” The following responses are examples we judged to be in favor of advances in ICT within the Fielding CLC:

I’m not really promoting necessarily a synchronous environment. I mean, it can still be asynchronous, but if we’ve got this richer more multimedia thing I think it would be much richer for me to, instead of reading your message (HOD9S).

It could be made much more user friendly. I find it a bit laborious. And I’m in a net based company myself that I started and had to go through designing software, and I find FELIX very very rich as an environment but overly complicated to use. I’d like to be able to push a button on FELIX and like a telephone ringing or something, if that person’s in their office ...if they come up (*on the screen*) for me and I see them (PSY4S).

Of the 75% inclined to prefer access to advances in ICT that would provide groups with richer media and hence richer distributed communication 25% of the respondents already employ such ICTs in their professional, personal, and learning environments. They have provided qualitative data that supports the assertion that when media rich ICT is available and employed by a collaborative learning group, that group will experience benefits not achievable by peers without the equivalent ICT. The people that did not value media richness said so because they did not think it was accessible to the learning community due to financial or technological considerations. For example, the following Fielding administrator, who stated earlier in her interview that she supported designing the ICT enabled distributed CLC with the consideration of the leanest media available to the members, gave a different answer when asked to design the ideal environment:

I would like everyone to have broadband, video cams and all of these little pieces to work with it, but the social piece which gets into that personal boundary management and knowing when to use which and for how many and to whom. And how to be nice, civil and to carry on

disagreement, you know, respectfully, that's a whole other piece that I would now love to have been able to have, 'Here's this package' (ADM1).

The above response bears directly on the media richness theory assertion that the best results occur when the media is paired correctly to the task at hand. In the case of collaborative learning, the social aspect, reflected by the informant, echoes that notion. All of the informants sampled concluded that the task of collaborative learning did demand a media rich environment, for at least part of the time.

We have documented that within a group knowledge area, those participants motivated to use more advanced ICT self-organize into focus or study groups to enhance their experience and to further insure their individual success through distributed collaborative learning techniques. The following is another example of ICT enhancing collaboration:

I'm a student reader and I have a colleague. We're each others' student readers on our committees and we speak on WebCam once a week and are constantly in contact on email. I would say that probably since I've been here, the most common use of furthering discourse has been on email. We actually did a paper on that because we did a knowledge area and it was information systems. And we used the WebCam to see whether it would enhance our collaboration. And our conclusion was that it did enhance our collaboration (HOD25S).

7.4 Critical Success Factors for the CLC at Fielding

In Chapter 2, Section 2.3.2, we introduced the relevance of assessing the CLC using critical success factors (Vogel, Davison & Shroff, 2001). Then, in Chapter 4 we included the evaluation of these critical success factors in our concept map. Below, we take those factors and apply the findings of the Fielding case study to explain how technology is enabling collaborative learning in the Fielding learning community, as well as in individuals that belong to that community. The italics below in Table 13 indicate the critical success factor from Table 2. This is followed by an explanation and supporting evidence, in the form of quotes from the interviews where appropriate.

Table 15 Critical Success Factors and the Fielding CLC

<p><i>1) Activity Setting as a Unit of Analysis relates to activity setting comfort. Group Support Systems (GSS) enable creation of an activity setting (i.e. an environment) that is conducive to learning, e.g. richly supported and non-threatening. We have learned from the study that the FELIX activity setting provides an accepted comfort level to the stakeholders. FELIX is a GSS that is certainly conducive to learning through the forums that create an environment of knowledge creation and knowledge sharing. We found that while well supported, there was room for improvement in the area of media richness. While most informants found the environment non-threatening, there were reports of navigational difficulties and of the need for enforcement of online etiquette from time to time. "I think that there are some students and faculty and probably administrators who avoid it, who are a little bit more comfortable or less threatened just working in a solitary mode (PSY13F)." This quote is the exception to the overwhelming majority of stakeholder informants that do feel comfortable, as we can see from the following quote. "I wouldn't be putting up my hand and joining in classroom discussions. But when I'm on FELIX and I can type in responses and post responses, I'm much</i></p>
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<p>more of a participant because it gives me a bit of safety. (PSY10S).”</p>
<p>2) Assisted Learning aligns with facilitation as an aspect of changing instructor roles. GSS help by communicating messages and feedback efficiently to help people learn. The focus of instructors shifts from teaching to assisting in the learning process.</p> <p>We have seen how FELIX is an essential repository of messages in the community and customized forums. Many informants stated how FELIX helps them to learn. The faculty and administrators see themselves as facilitators rather than instructors, and we can see from this quote that FELIX is more than a storage depot: “I think that it facilitates the exchange not only, I don’t mean just of information like sort of posting of like a bulletin board, but of actual creation of communities of interest (ADM2).”</p>
<p>3) Cognitive Apprenticeship illustrates self-directed learning, with the focus on learners taking responsibility. GSS present information in a structured fashion, but also allow browsing and encourage exploration. Learners are not forced into specific responses as might occur with a more structured tool. GSS support a flexible structure and varying privileges (e.g. editing) that can be engaged as appropriate to give learners more intellectual freedom.</p> <p>We have learned through the background history of Fielding in Chapter 6 and the informants’ responses, that the Fielding philosophy is grounded in self-directed learning, as described above. While not everyone interviewed found the FELIX navigation system immediately easy to use, there is overwhelming evidence that browsing and exploration is encouraged. Certainly the process of contracting for KAs and defining the responsibilities, areas of study, and deliverables, is consistent with a flexible structure fostering intellectual freedom.</p>
<p>4) Distributed Intelligence in a Learning Community gives a sense of knowledge management. Web-based GSS provide easy access to external resources, while in addition providing many ways to express individual feelings. GSS not only establish the learner network, but further reduce barriers to participation through features such as anonymity, simultaneous interaction, and the establishment of a collective learning community memory.</p> <p>The library services available through Fielding provide a vital research resource to the CLC. The FELIX forum software offers a way for the participants to express themselves, opening by form initiation, participation and moderation. On the other hand, the distributed environment emboldens stakeholders who would be more hesitant to enter into the community if it was only physically situated. Furthermore, the forum provides a repository amounting to the collective learning community memory as noted above. We did find that providing additional memory resources is an area for improvement, with regard to instant messaging chat threads, email threads, and shared literary resources, whether published or unpublished.</p>
<p>5) Internalization gives a sense of knowledge application. The key here is communication before internalization. GSS support this activity through making information available in an effective and comforting fashion to set the stage for individuals to build on their existing mental models, so internalization can take place more easily.</p> <p>We investigated how knowledge creation and sharing activities occurred in the Fielding CLC and found that the FELIX forum software, in addition to the face-to-face cluster encounters, contributed greatly. This HOD student said, “In my dissertation process right now, each time I share (knowledge) it takes me deeper into my own dissertation. It also has affected the way that my methodology has evolved (HOD12S).” This student describes the knowledge creation activities she is involved with: “doing a FELIX seminar with other students involved; sharing their papers, their references; and in feedback sessions with each other and with faculty (PSY9S).” These two examples are typical of the information we collected.</p>
<p>6) Intersubjectivity gives an indication of synergy among team members. GSS support development of shared understanding. The tools promote consensus formulation but enable a broad range of views to emerge.</p> <p>The same student we quote directly above describes how the Fielding method creates synergy and team building, explaining why the CLC has a high degree of shared understanding: “They encourage collaboration from the outset. They start with more senior students welcoming the incoming students; and making sure they know how to use the technologies and what to access; how to line up their curriculum so that they get the most benefit the quickest, and not to get discouraged. And that’s the non academic part. Academically, they encourage collaboration throughout and promote an interactive environment with each other (PSY9S).”</p>
<p>7) Mediation brings to the fore issues associated with learning transformation. GSS provide a range of technical and structural support (e.g. voting, convergence, messaging, and routing) that can assist in enhancing the communication process and sociocultural learning in a supportive and non-threatening fashion.</p> <p>The Fielding community forums, which are mediated by the Provost, are a good example of the technical and structural support processes that enable sociocultural learning with FELIX.</p>
<p>8) Scaffolded Learning relates to the impact of external structuring. GSS provide varying degrees of structure to match the needs of the learning environment. It is important to create an appropriate structure and to be able to modify the structure dynamically, so as to meet evolving learning needs. Having the minimal critical structure is of paramount</p>

importance.

There is not as high a degree of flexibility as all the stakeholders would like within FELIX and the other ICTs used in the Fielding CLC. However, we did learn of a number of flexible applications both within FELIX forums and outside of FELIX, using teleconferencing, WebEX, WebCT, video conferencing and Instant Messaging, to meet the evolving needs of the community.

9) Teleapprenticeship indicates technology supported learning environment effectiveness. Here the focus is more on the technology and tools. GSS are a prime example of technology and tools to link remote communities with varying characteristics and degrees of impact.

Our study and the institutional results of producing PhDs, publications and accreditation are all indicators that the technology employed is effective at linking remote diverse communities of students, faculty, administrators and technologists.

10) Zones of Proximal Development provide indicators of communication effectiveness over distance. Distance in this sense includes learning from more experienced people, not just those at the same level. GSS provide the means to link up with multiple cultures and facilitate cultural learning with strong support for topic focus. GSS also enable bringing together a broad range of participants from multiple levels and perspectives.

As described in number 6) above, there are ample indicators that the Fielding process provides an environment that allows for effective communication over distance, where learning from people at all levels is encouraged. FELIX provides the means to link together a broad range of participants.

Table 15 clearly illustrates that by applying these critical success factors to our data collection we can understand the ten factors that account for the successful implementation of the FELIX CSCW environment. The CLC works because it provides its stakeholders with an environment that fosters collaboration and learning. Given that solid foundation, the improvements identified in Sections 7.2 and 7.3 may be tested with confidence to determine if the pace of knowledge creation and sharing we uncovered through this case study translates into the larger population.

7.5 Applying the Literature Review of Distributedness and Polycontextuality to the Case Study

All of the case study participants were living in the US and Canada at the time of the study. About 5% reported having done a portion of the study while outside of North America during part of their program. The following chart illustrates the geographical distribution.

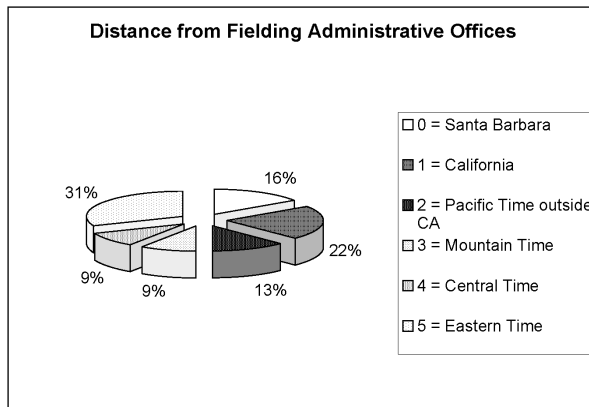


Figure 9 Stakeholder Distance from Fielding Administrative Offices

The scale was determined based on two factors: immediate face-to-face proximity to a majority of the Fielding administrators and the Winter session meeting in Santa Barbara, and with respect to collaborative learning, both time zones and physical distance from other stakeholders are considered.

The Fielding stakeholders come from different contexts (e.g. work, family, urban, suburban, rural, educational backgrounds, etc.). There is a time difference and geographical distances are large. All such contexts are different for these people, and the ICT is different from very low tech to high tech savvy. These factors lead to great diversity. The analysis has shown that the informants were geographically distributed and that the effect of geographical distribution can be mitigated by using media rich ICT, at least in smaller collaborative learning groups. There is no evidence from the case study that indicates that the over-arching Fielding CLC requires pervasive media rich ICT to improve its learning goals.

When a learning community is distributed and at the same time it needs to be collaborative, somehow the gaps due to distribution and polycontextuality need to be bridged by technologies. Moreover, if the community is poly-inclusive, the diversity of the community members places an additional requirement for developing identification with the community and a common ground for evolving shared meanings. Fielding uses bridging technologies to move people and to move bits (Kumar et al, 2005). Moving people for winter and summer one week cluster meetings and monthly geographical cluster meetings are episodic and therefore the rest of the time people have to work together using technology. Moving bits with traditional technology (post office and fax) is too slow and they are not synchronously interactive. Current minimum common technological standards are faster, but there is room for improvement by being able to move more bits at the same time and therefore much richer communication is possible. Providing a framework to evaluate the baseline and then plan for ICT improvement in the collaborative learning community is a potential tool to continue to sustain and grow the community.

7.6 Analysis of Propositions and Concept Connections

The above analysis shows that there were variations between the concepts in the concept map. It also shows that the relationships (i.e. the connections) between the concepts are expressed in the data collection. We can now apply the data analysis findings by Revisiting Section 4.4.

The concept map reflected the specific boundaries in which the research took place. Within the Fielding collaborative learning community we found stratification driven by programmatic criteria, personal learning preferences, institutional commitment to a collaborative learning model, and available ICT to support these factors in a distributed environment. This proposition corresponds to the connector between the Practice and the Pedagogical Structures for Learning. The concept of legitimate peripheral participation

was readily observable in the case study, with the OPS process providing one clear example. Furthermore, we observed how social practice and a Social Theory of Learning were applicable and observable in the form of social variables. They expressed themselves in terms of learning styles including preferences for either collaborative or solo learning, as well as learning using basic ICT versus more advanced ICT. We saw how the culture of the Fielding virtual organization provides a working framework on how to manage differences in stakeholder learning styles

Evaluation and assessment are important factors within the study, and the information systems practice and Table 15 above use critical success factors to assess the study findings. This proposition serves to create a connection between the Fielding CLC practice and to answer the questions about why it was and was not working, as shown in Section 7.3.1, or at least the areas that could benefit from improvement.

The analysis of the empirical data allowed us to both describe and explain, from a stakeholder perspective, how the existing community technology is used. In Chapter 8 this analysis will take us to a point where we are able to recommend improvements to the ICT in the Fielding CLC. This proposition provides the connection between the Fielding CLC Practice, notions of distributedness, and ICT Support Structures.

7.7 Summary of Findings

In summary, when we began this research the case study set out to confirm certain expectations and also to shed new light on the phenomenon of the ICT enabled distributed collaborative learning community. We can discuss the findings in terms of, 1) things expected that were found; 2) things expected that were not found; and, 3) things not expected that were found.

There was an expectation that we would find a unique ICT enabled CLC being employed by the PhD students, faculty, administrators and technological support staff of Fielding. This finding in the FELIX architecture is backed up by the study. We expected to find more use of media rich ICT, predicated upon the wide spread availability of DSL or Cable Modem levels of broadband access throughout the US, Canada, Europe and Asia. We did not find this to be the case in most of the empirical data, and in fact uncovered low bandwidth congestion issues in the sharing of documents by the community. We did not know if we would uncover any sub-groups that through their own initiative employed more media rich ICT even though we suspected that the richer the media, the more likely that the group would succeed within a collaborative learning model. In fact the empirical data did bear out this hypothesis, and we can report increased levels of success in the pace of the learning of the group and satisfaction with the programs. Furthermore, these initiatives sometimes took the form of a partnership between the faculty and students, but sometimes were purely originated by the students.

8.0 Conclusions and Recommendations

In the case of collaborative learning people learn by negotiating meaning with one another. In a collocated situation the meaning can be negotiated in face-to-face dialogs. In a distributed environment they need some mediating artifact to negotiate meaning. Previously these mediating artifacts were letters, journal articles, books, and sometimes conferences or classrooms. Nowadays, there are newer technologies that can range from telephone, email, fax to video conferencing and even richer virtual environments. In this research we examined the role of information and communication technologies as mediating artifacts at Fielding Graduate University, an intense collaborative learning and knowledge creation environment.

Previous work on learning communities has dealt with learning in the context of business activities, such as fixing copying machines, adjusting claims (Wenger et al., 2002), or navigating a ship (Lave & Wenger, 1991). In this research we focused on a collaborative learning community where the primary object of the community is to learn and to create knowledge in a doctoral program. The distinction that we are setting up is important because graduate education is an abstract situation, versus the concrete examples of claims or copy machines. The primary purpose of the claims adjusting community or the copy machine fixing community is to support the adjusting of claims or the fixing of copying machines. Learning is a secondary means to support business. Given that knowledge is more complex, unstructured, and uncertain, graduate education requires a richer exchange of information between the stakeholders and therefore the role of technology becomes critical.

At Fielding learning is the primary purpose. Therefore, this community provided us with a good test case where we could examine the role of technology in a collaborative learning environment. The analysis of our case study data documents that Fielding is a learning and knowledge creation community. People come together primarily for the purpose of creating knowledge in a highly collaborative effort where distribution is not an artifact, it is a reality. In other words, the distribution is not an optional or constructed artificial component of the collaborative learning. It is part of the essential nature of the program. The setting for this activity is a variety of cluster environments, both face-to-face and distributed, enabled through a combination of physical and ICT mediated virtual meetings.

Section 8.1 summarizes the key findings from this research, while Section 8.2 provides our recommendations for action, based upon these findings. Finally Section 8.3 identifies the contributions of this research to theory development and practice, while Section 8.4 lists the limitations of this study and points out questions for future research.

8.1 Conclusions

On the one hand, there is demonstrated evidence that ICT increases the pace of learning, but on the other, we have people who do not use more advanced ICT and therefore are not aware of what its capabilities really are. Although we used the ICT cyberinfrastructure maps of Figures 4 and 5 to share ICT definitions, it is not clear whether informants who have not used these can value the addition of more advanced technologies. Still, we recognize that those individuals who seek out advanced ICT may be different in some way from those who do not. Additional study is suggested to determine if there are characteristics that predispose some learners in the collaborative environment to adopt ICT tools more readily than others.

In the case of distributed collaborative learning there are two primary dimensions of ICT to consider. One dimension is the use of collaborative technologies (e.g. FELIX, Group Support Systems), and the other is enabling collaborative learning with rich media technology relying on underlying broadband network infrastructure. With these two dimensions in mind, we have three key conclusions from this research and we reflect back on our initial research questions related to each one.

Our first conclusion is that distributed collaborative learning can be facilitated by the use of rich media, because of the need for intense collaboration between the participants. This provides an answer to our first research question of how technology is enabling collaborative learning in learning communities as well as in the individuals that belong to those communities.

To support intense collaboration you need media richer than plain text and e-mails. The second conclusion is that the use of technologies that are advanced in terms of richness and collaborative features do improve the level of learning and performance in collaborative distributed learning environments. This conclusion answers the research question of how and why advanced ICT contributes to enhancing learning in distributed Collaborative Learning Communities.

The third conclusion is that people do not use these advanced technologies if: a) they are not aware of them; or b) they are afraid of using any ICTs, if they think they are complicated or if they are not competent in using them; or c) the technologies may be disruptive in several ways, including socially disruptive to the way people are accustomed to working and learning or lack of access to broadband. Therefore, we need to find ways of introducing these technologies to the participants. Both a) and b) are things we can do something about, but c) will either be solved by time or Fielding can elect to make some decisions about including or excluding participants based on their access capabilities and willingness to adapt socially to increase their advantages. This conclusion answers the research question of what the issues and problems are that may arise for communities or individuals in the context of technology enabled collaborative learning.

Our results indicate that the use of advanced technology that provides a media rich collaborative environment for learning leads to faster achievement of graduate study goals measured as attaining Knowledge Areas (KAs). The conclusion is significant because the Fielding Graduate University services a population that is more mobile and more distributed than traditional campus-based graduate students. The students, faculty, administration, and technologist stakeholders all seek to further personal and institutional higher learning goals in a mobile and distributed manner. The case study results can be viewed as a bellwether for the trend toward life long learning that is reaching global proportions (Lave & Wenger, 1991; Friedman, 2005). Fielding has successfully instituted a program for this purpose, but we have also learned from the case study which areas can be improved by better use of advances in ICT, as well as informing the development of better collaborative technologies in the future. To summarize, the study resulted in three findings:

Table 16 Study Findings

1. While FELIX seemed to be relatively satisfactory, the participants in the learning process indicated that there was room for improvement with respect to the use of advanced communication media, such as broadband, synchronous tools that allow video conferencing, instant messaging, desktop and whiteboard sharing, large document sharing, and integrating email archiving.
2. Where people used advanced technologies their distributed collaborative learning results seemed to be better than their colleagues in KAs that did not use the ICT.
3. Where people did not use more advanced technologies, there was a bottleneck to the ability to engage in intense collaborative knowledge creation and sharing activities.

These findings all suggest that the collaborative learning process at Fielding could benefit from the use of richer media and collaboration technology.

8.2 Recommendations

The recommendations that follow are based on the three conclusions above. They are motivated by the findings that not only should people be provided with access to media rich collaborative ICTs, but we have to make it easy for people to become aware of and to use them.

The recommendations outlined in this section grew out of the survey respondents' assessment that the current technology is satisfactory (85%), but also the observation that when provided with alternatives the respondents feel that there is room for improvement. Moreover, our data also show that when people use more advanced ICTs on their own, including broadband, synchronous tools that allow video conferencing, instant messaging, desktop and whiteboard sharing, large document sharing, and integrating email archiving, they reported better performance than students in their cohorts that did

not use these ICTs. There was also some indication from the participants (75%) that the lowest common denominator of technology standards can be a bottleneck to the ability of students and faculty to engage in intense collaborative knowledge creation and sharing activities. Without broadband based collaborative ICT, this bottleneck makes it more difficult to participate in intense collaboration for knowledge creation and sharing collaborative learning opportunities.

A good first step is to introduce these technologies more broadly within the CLC, but that is only a beginning. Having introduced the technologies, it is critical that we provide help to encourage people to use some of them. Table 17 offers general recommendations stemming from conclusions one and two. Table 18 contains a specific set of actions that compliment conclusion number three, and are extracted from the case study informant response data. We found that the basic technologies (see Tables 9 and 10) used by some members of the community, caused problems for other participants; therefore, our recommendation is to increase the overall level of technology adoption and use in the learning community with the following progression:

Table 17 Study Recommendations

1. Introduce more advanced ICTs into the community, including broadband, synchronous tools that allow video conferencing, instant messaging, desktop and whiteboard sharing, large document sharing, and integrating email archiving, to stimulate an environment of better student performance in collaborative learning endeavors.
2. Mandate the use of technologies that are above the basic level recommended by Fielding, drawn from those mentioned above, in number 1.
3. Support this introduction and mandate, by easing the adoption of such technologies by providing help through ongoing help desk services, using methods such as instant messaging chat, telephone, and self-directed, as well as cluster based tutorials. Because people may be uncomfortable, a help desk becomes an important part of the Fielding design. Support through tutorials should begin at a physical face-to-face cluster, and then continue using the tools in a distributed manner within the community so they can effectively use the more advanced technologies.
4. Regularly survey advances in ICT to scan, assess, and incorporate them as appropriate.

The following stakeholder recommendations are complementary to our recommendations above and map back to conclusion three. We can see that the Fielding respondents place a high value on technical support for the introduction of new ICTs into the community.

Table 18 Stakeholder Recommendations

<ul style="list-style-type: none"> • A high level of technical support to configure new ICT systems and solve problems, leading to greater user satisfaction and adoption.
<ul style="list-style-type: none"> • Upgrades and reorganization of collaborative software implemented with stakeholder involvement, to understand the benefits and reduce the learning curve for new system features or navigation of changes.
<ul style="list-style-type: none"> • State of the art search engine integrated into the collaborative software to deliver resources in a more efficient manner, saving time and increasing satisfaction with the environment.
<ul style="list-style-type: none"> • Because distributed collaborative research is a primary goal of the institution, specifically provide a collaborative research infrastructure to support that goal including: <ul style="list-style-type: none"> ⇒ Provide ICT enabled distributed sessions and events in a richer as opposed to thin media environment. This may contribute to the success of students moving through the program at a faster pace. ⇒ Provide an easy method for students to access a defined roadmap of their course requirements and progress. ⇒ Activities such as email, instant messaging, teleconferencing, and document sharing occur outside FELIX. Provide a way within the collaboration software to either accommodate or eliminate the need for email exchanges within the community. Provide real time chat (a.k.a. Instant Messaging), telephone and video conferencing within the collaborative software. Without these options, knowledge creation and sharing exchanges are harder to establish and results are easily lost to the community. ⇒ Enable a space for virtual literature sharing to mimic a real-world office environment. This would include assignments, work in progress and published literature, and would be mindful of copyright governance.

We found through this study that the richer media technologies enabled an increase in interaction and yielded satisfaction among the participants. It also enabled them to succeed in attaining knowledge areas that were unattainable for cohort members who did not adopt the ICT with the same regularity. We found that those people who employed one or more of the ICTs in (1) in Table 17, tended to create sub-clusters akin to face-to-face study groups, in a distributed virtual environment. There is some beginning evidence that they advanced faster. We can also recommend that this type of learning needs an ICT environment that promotes richer interaction among the participants.

8.3 Contribution to Theory and Practice

Through this research, we have been able to show that technology plays a crucial role in enabling distributed collaborative learning, and the richer the media, the more effective it is in helping the collaborative learning community participants negotiate meaning and learn. Our findings indicate that in a distributed collaborative learning community, collaborative learning can be enhanced by the use of rich and highly interactive technologies that can enable people to interact intensely in negotiating and jointly creating meaning. This contribution to theory goes beyond the published literature reviewed, due to our findings on the very critical role of media rich ICT in certain types of distributed collaborative learning communities when knowledge creation is a primary goal.

These findings were generated in the context of Fielding where collaborative learning and collaborative knowledge creation (research) is a cultural norm. From an ideological perspective as well as an epistemological perspective a majority of researchers at Fielding Graduate University seem to believe the constructivist argument that knowledge and therefore reality is socially constructed. This social construction requires intense interaction between the participants in the knowledge creation process. When the participants are geographically distributed the intense interaction in turn requires the use of mediating technologies. The greater the need for intensity and interaction the greater the requirement for richer media which makes the intense interaction possible. Thus, the results of this study can be generalized to learning and knowledge creation situations that recognize the role for intense interaction in social construction of knowledge. On the other hand, in knowledge creation communities with strong positivist beliefs, when knowledge can be reified in terms of abstract symbols with well-defined meanings attached to them (such as mathematics and symbolic logic), the symbolic representations may convey full meaning and therefore there may be no need for social construction. However, even disciplines such as high energy physics and astronomy are now beginning to realize that their understanding of the universe, both at micro- as well as macro-levels, needs to be reconciled by coming to a common understanding which can no longer be achieved by reification through a common symbolic language. However, this is an issue to be explored in the future. In this dissertation we only assert that when knowledge is socially constructed by geographically dispersed participants, mediating technology plays a key role in enabling the intense interactions required to come to a joint understanding.

From a practice point of view, the study gives concrete pointers and recommendations for action in using technology to support such a community. At Fielding Graduate University, which is based on a collaborative learning environment, the findings suggest the introduction and use of media rich collaborative learning technologies. We saw how the role of ICT enables distributed collaborative learning within the Fielding PhD programs through this research. The study methodology and findings offer practical application not only to Fielding, but to other distributed collaborative learning communities for both the study of their environments (e.g. institutional research) and to enhance effectiveness for the stakeholders.

8.4 Limitations and Future Research

There are several questions raised in this study that still need to be answered, providing a springboard for future research, based on the preliminary results that technology is the enabling factor allowing stakeholders to interact more (i.e. collaborative learning) and therefore finish faster. In Section 7.3.1 the case study shows that people with access to advanced ICT maintain a faster pace of learning and knowledge creation. There are two possible ways to interpret this. First, we can argue that the advanced ICT stimulates richer and more sustained interaction, which fosters a better situation for collaboration and collaborative learning, leading to the faster pace of learning and knowledge creation. Section 7.3.1 contains some evidence for this interpretation.

The second interpretation could be that there is possibly a third variable that also influences both higher performance and the adoption of advanced ICT. Our assumption was that it was the mediating technology that caused this result, but there could be another possible explanation of our early findings. The people in the Fielding community are the type of people who have already self-selected into a distributed collaborative learning environment and therefore they are predisposed to make it work. This variable may be discrete or a combination of attributes, such as high motivation, socio-economic status, a high propensity to learn, and more of a tendency to adopt advanced ICT. Since we only have a hint at this direction in the study data, this leads us to a new research question: *Is there a specific set of variables that influence adoption of advanced ICT to improve the pace and satisfaction of distributed collaborative learning?* The evidence bears out this line of investigation, especially the example of the Knowledge Area subgroup who used collaborative technologies to study together and pass their statistics course, while the remainder of the cohort did not pass.

A key concept of this study is that collaborative learning requires collaboration. Our study indicates that the better the collaborative learning, the faster the pace of learning. We can extrapolate that the more and richer the interactions among the stakeholders, the more the collaborative learning, because there is an increase in collaboration. This reasoning leads to the research question: *Does more media richness in ICT enabled collaborative learning environments lead to an increase in the effectiveness of the collaborative learning?* While our current findings show this to be the case, a broader study is suggested to establish this in greater detail.

Future research would seek to determine if data can be collected to show that advanced technology leads to more and richer interactions, because our early results from this study indicate that technology is actually useful in collaborative learning. ICT plays different roles in solo and collaborative learning. In solo learning you need technology that helps you search databases, compile a literature review, and so on, that you do alone. In collaborative learning you need a different kind of technology: one that promotes interaction. Future research might ask: *What is the best ICT to promote interaction for collaborative learning?* Digital libraries are good solo ICT tools. Seminar archives can be used for solo learning. Then, when a student is ready to move from the periphery into

the fray, they enter the seminar. This moves them from a solo learning model into a collaborative one.

Appendix A

Situating the Researcher in the Study: Extended Text

The formation of a learning community through which knowledge is imparted and meaning is created, sets the stage for successful research and learning outcomes. My particular interest is in how to build an effective learning community for virtual teams. Studies have found that teams who use collaborative technologies to establish group identity and trust, to develop routines for collaboration, and to engage in deeper communication with one another, are most likely to succeed in building an effective on-line learning community (Klobas & Haddow, 2000; Piccoli, 2003; Qureshi, 2001; Rutkowski, Vogel, Genuchten, Bemelmans & Favier, 2002).

I take on several roles in this study, which include a researcher from outside who is observing the phenomenon. A second role, as the external researcher, is that I will provide my conclusions and recommendations to Fielding. Additionally, in the circumstance of practitioner investigator, I will use the understandings derived from this research in my role of the linking pin actor for several complimentary U.S. National Science Foundation funded projects. I am a Co-Principal Investigator in the projects leveraging science research, educational outreach, and cyberinfrastructure to advance goals in all three areas.

To help clarify the researcher role in the study, I adopted the stance of taking a structured approach to social inquiry allowing for phenomenological flexibility as the research leads down paths that could not be anticipated (Bourdieu & Wacquant, 1992). This approach is useful because it provides a theoretical lens for Communities of Practice literature, which integrates multiple theories to inform a complex phenomenon. The research methodology discussed in Chapter 5 relies on this approach for the construction of the survey instrument.

Consistent with coherent social inquiry (Bourdieu & Wacquant, 1992) is the Fourth Generation Evaluation Methodology described by Guba and Lincoln (1989), which takes a systematic approach to qualitative research that best suits the goals of observation, description, explanation, and consideration of improvement to the current ICT enabled Collaborative Learning Communities environment. This research contends that by following the Guba evaluation approach it is able to adopt a phenomenological interview style for the data collection phase and then apply:

. . . stakeholder claims, concerns, and issues (CC&I) as organizers and the constructivist belief system as the methodological generator. The effort to devise joint, collaborative, or shared constructions solicits and honors the inputs from the many stakeholders and affords them a measure of control over the nature of the evaluation activity (1989, p. 184).

The research design and analysis will draw from this model.

Personal and practical purposes related to this research are deeply intertwined. The Fielding Graduate University approach reflects the scholar practitioner model, which is also my research stance. This is reflected in my professional appointment at Florida International University (www.fiu.edu) as Director of the Center for Internet Augmented Research and Assessment (CIARA), and as Co-Principal Investigator on the AMPATH International Exchange Point (www.ampath.fiu.edu), as well as the Inter-Regional Grid Enabled Center for High Energy Physics Research and Educational Outreach (CHEPREO) (www.chepreo.org) and other related projects. Research writing with other technologists and scientists has resulted in awards on several significant collaborative research proposals. A virtual collaborative environment for learning and research directly relates to my scholar practitioner role and holds promise for future global collaborations.

Collaborative Learning Communities share values such as clear communication to define goals, timelines and tasks, and then to update the participants on progress. Learning communities also require clear communication protocols to update project components based on new information such as program reviews, changing economic and technological conditions and other priorities. These shared values can be facilitated in a virtual environment by enabling participants in the community to get together for strategic planning and update sessions. The technology does not replace the face-to-face meeting environment in quality of interaction, since body language, eye contact, and other tactile elements are not yet adequately transmitted in an ICT collaborative environment, thus providing a space for improvement.

Optical networking technology is changing the possibilities for virtual environments. Greater network bandwidth at lower costs creates an opportunity to define and implement more life-like enhancements within ICT. This opportunity necessitates a deeper understanding of what constitutes valuable communication attributes to a learning community and then designing a roadmap for integrating those values into the advanced collaborative environment. For example, eye contact between colleagues in a meeting can have a significant impact in swaying collaborators to a particular point of view, of imparting encouragement, praise, and even hushing dissent or disruptive behavior. In the virtual environment of today, eye contact is harder to achieve and the quality of the video, at any given moment of the transaction, is still unpredictable. This is only one small example of the tactile elements that should be examined.

In Erickson, Halverson, Kellogg, Laff, & Wolf (2001), the research team focused on “coherent interactions that enable groups with a shared aim to make progress toward a common goal.” Specifically, the team sought a computer graphics system that would position participants in an audio teleconference. The team discovered that “humans are remarkably skilled at using subtle cues about the presence and activities of others to govern their interactions” (Erickson et al., 2001). Existing ICT does provide video and audio contact with remote collaborators, but it is difficult in a group to group meeting to track movement, indicating the participants’ level of engagement in the current

discussion. There is much left to define and improve so that the subtle cues we rely on for successful collaboration can be transitioned into ICT enabled Collaborative Learning Communities.

The most exciting aspect of this research is the opportunity to contribute new information to make improvements to virtual environments. The main hope for this study is that it will inform technological improvements for Collaborative Learning Communities. The main concern in doing this study is efficiently defining the data needed to validate the research. The biggest assumption involved with this research is that the state of the technology can be improved sufficiently to make a significant impact on Collaborative Learning Communities. Since this research does not aspire to technology ‘inventor’ but rather to research expertise in systems analysis and design, the improvements in the virtual environment ultimately rely on computer scientists and engineers making the commitment to actually implement improvements. A measure of control can be exercised over this assumption by securing funding through the grants process to hire appropriate research personnel and taking on a principal investigator role for the work, a logical next step following the conclusion of this dissertation.

The main way that this research draws on my experience is as a pioneer user of advanced collaborative environments and an active facilitator of several learning communities, including the NSF sponsored CHEPREO physics community. One grounding component of this research that is indisputable is that technological advances to ICT are dependant on network bandwidth that will continue to become more available and less costly, and that there are rising numbers of connectors that will use advanced ICT environments as they are made more accessible. It would come as a real surprise if the results of the research showed that there are technological limits that will not allow the development of the advanced ICT environment to a point where it can support a natural and satisfying interaction between people in a Collaborative Learning Community.

Appendix B

Supplement for Chapter 5: Research Approach Sub-Questions

1. How do you decide on participation in the community? (Look at Inclusion and Exclusion rules.)
2. What characteristics of the cyberinfrastructure are needed to enable and support the community?
3. As discussed in Chapter 2, the collaborative learning model differs from the more traditional solo learning model, which is competitive in structure. We will investigate the informants' perceptions of the:
 - a. Models employed by Fielding (Knowledge Areas, Contracts, Clusters, etc.);
 - b. Role models and mentors;
 - c. Collaborative Learning philosophy and structures at Fielding;
 - d. Technology characteristics of collaborative learning at Fielding and what does that mean, e.g. media richness, high bandwidth, etc. This helps us to answer the research question concerned with how ICT enables collaborative learning. The idea of communication enabling the action of learning is at the kernel of this investigation. The dimensions of communication include such core concepts as knowledge creation, knowledge sharing, and so forth. These concepts are explored in the case study structure described in detail in Chapter 6.

Appendix C

Internal Review Board (IRB) Document

APPLICATION FOR THE CONDUCT OF RESEARCH INVOLVING HUMAN PARTICIPANTS

TITLE OF STUDY: A case study of how people learn collaboratively mediated by technology and distance		DATE SUBMITTED: 12/1/04
RESEARCHER'S NAME: Heidi Alvarez	SCHOOL (ELC, HOD, PSY): Florida International University	AFFILIATION: <input type="checkbox"/> Faculty <input type="checkbox"/> Staff <input type="checkbox"/> Student <input checked="" type="checkbox"/> Other. Please specify. Doctoral Student at Erasmus University Rotterdam School of Management
ADDRESS: Florida International University Center for Internet Augmented Research & Assessment CIARA www.ciara.fiu.edu AMPATH www.ampath.fiu.edu 11200 SW 8th Street PC307 Miami, FL 33199	PHONE: 305.348.2006 E-MAIL: heidi@fiu.edu	
CO-RESEARCHER: Daniel Sewell, Ph.D.	SCHOOL (ELC, HOD, PSY): N/A - Associate Provost	AFFILIATION: <input type="checkbox"/> Faculty <input checked="" type="checkbox"/> Staff <input type="checkbox"/> Student <input type="checkbox"/> Other. Please specify.
ADDRESS: Fielding Graduate University 2112 Santa Barbara Street Santa Barbara, CA 93105	PHONE: 805.898.2916 E-MAIL: dsewell@fielding.edu	
CO-RESEARCHER:	SCHOOL (ELC, HOD, PSY):	AFFILIATION: <input type="checkbox"/> Faculty <input type="checkbox"/> Staff <input type="checkbox"/> Student <input type="checkbox"/> Other. Please specify.
ADDRESS:	PHONE: E-MAIL:	

Description of the Proposed Research

1.	<p>Provide a brief description of the background and purpose of your research. Avoid using technical terms and jargon. This should be no more than one page, and may only be a paragraph.</p> <p>This project is studying how advances in information technologies create a facilitating catalyst in the success of establishing and sustaining collaborative learning groups and communities. The study will be conducted at Fielding Graduate Institute during Winter Session 2005 with currently active Fielding students, faculty, and administrators. The objectives are to understand the process of how people learn collaboratively mediated by technology and distance and to apply findings from the Fielding case study to theorize what social and technological elements contribute to enhancing collaborative learning groups and communities achievement of goals such as knowledge creation and sustainability. The methodological approach will be to use an unstructured interview technique to insure minimized presupposition of the respondents answers. This will be followed up with an email survey to clarify items in the interviews.</p>																				
2.	<p>Provide a brief description of the basic research question/issue. Avoid using technical terms and jargon. This should be no more than one page, and may be only a paragraph</p> <p>What is the process by which people learn collaboratively mediated by technology and distance?</p>																				
3.	<p>Provide a brief description of the design of your research. Avoid using technical terms and jargon. Be sure to list all of the means you will use to collect data (e.g. instruments, measures, tests, questionnaires, surveys, interview schedules, focus group questions, observations). Provide a short description of the tests, instruments, or measures and attach copies of all instruments and questionnaires for review. <i>If you need more than a few paragraphs, please attach additional sheets.</i></p> <p>Unstructured interviews of 25-50 participants with general questions and a follow up email survey, transcription of interviews, transcript coding, and qualitative analysis of coded transcripts.</p> <p>In addition to describing the design of your research, please indicate the methods that your research will include by checking all that apply:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%; padding: 2px;"><input type="checkbox"/> Descriptive</td> <td style="width: 20%; padding: 2px;"><input checked="" type="checkbox"/> Field work</td> <td style="width: 20%; padding: 2px;"><input type="checkbox"/> Oral history</td> <td style="width: 20%; padding: 2px;"><input type="checkbox"/> Grounded action</td> <td style="width: 20%; padding: 2px;"><input type="checkbox"/> Other, Please name</td> </tr> <tr> <td style="padding: 2px;"><input type="checkbox"/> Experimental</td> <td style="padding: 2px;"><input type="checkbox"/> Ethnographic</td> <td style="padding: 2px;"><input type="checkbox"/> Phenomenological</td> <td></td> <td></td> </tr> <tr> <td style="padding: 2px;"><input checked="" type="checkbox"/> Qualitative</td> <td style="padding: 2px;"><input type="checkbox"/> Formative</td> <td style="padding: 2px;"><input type="checkbox"/> Narrative</td> <td></td> <td></td> </tr> <tr> <td style="padding: 2px;"><input type="checkbox"/> Quantitative</td> <td style="padding: 2px;"><input type="checkbox"/> Longitudinal</td> <td style="padding: 2px;"><input type="checkbox"/> Grounded theory</td> <td></td> <td></td> </tr> </table>	<input type="checkbox"/> Descriptive	<input checked="" type="checkbox"/> Field work	<input type="checkbox"/> Oral history	<input type="checkbox"/> Grounded action	<input type="checkbox"/> Other, Please name	<input type="checkbox"/> Experimental	<input type="checkbox"/> Ethnographic	<input type="checkbox"/> Phenomenological			<input checked="" type="checkbox"/> Qualitative	<input type="checkbox"/> Formative	<input type="checkbox"/> Narrative			<input type="checkbox"/> Quantitative	<input type="checkbox"/> Longitudinal	<input type="checkbox"/> Grounded theory		
<input type="checkbox"/> Descriptive	<input checked="" type="checkbox"/> Field work	<input type="checkbox"/> Oral history	<input type="checkbox"/> Grounded action	<input type="checkbox"/> Other, Please name																	
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<input checked="" type="checkbox"/> Qualitative	<input type="checkbox"/> Formative	<input type="checkbox"/> Narrative																			
<input type="checkbox"/> Quantitative	<input type="checkbox"/> Longitudinal	<input type="checkbox"/> Grounded theory																			
4.	<p>Indicate whether recruitment of participants and/or data collection will involve the use of any of the following.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%; padding: 2px;"><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</td> <td style="padding: 2px;">Audiotapes, videotapes, or photographs</td> </tr> <tr> <td style="padding: 2px;"><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</td> <td style="padding: 2px;">Electronic communications (e.g. E-mail, Internet)</td> </tr> <tr> <td style="padding: 2px;"><input type="checkbox"/> Yes <input type="checkbox"/> No</td> <td style="padding: 2px;">Archival data that is not publicly available</td> </tr> </table> <p>If your response is "yes" to any item in #4, describe how the media will be used (e.g., coded and then destroyed, kept for possible publication or broadcast, etc.), how the media will be stored and for how long?</p> <p>Videotapes will be transcribed. Videotapes will be kept for future analysis. Videotapes will not be shown to anyone other than researchers and research assistants.</p>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Audiotapes, videotapes, or photographs	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Electronic communications (e.g. E-mail, Internet)	<input type="checkbox"/> Yes <input type="checkbox"/> No	Archival data that is not publicly available														
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<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Electronic communications (e.g. E-mail, Internet)																				
<input type="checkbox"/> Yes <input type="checkbox"/> No	Archival data that is not publicly available																				
5.	<p>Does the proposed research require that you deceive participants in any way? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>If your response is "yes," describe the type of deception you will use, indicate why it is necessary for this study, and provide a copy of the debriefing script.</p>																				

<p>6. Name any source(s) of funding for the proposed research (e.g., NIH, NSF, Foundation, Fielding funds). NSF</p> <p>Do funding source(s) have any potential for financial or professional benefit from the outcome of this study? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>If yes, please explain:</p>			
<p>7. Has this research been through previous IRB review at another location (e.g., VA, other university) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>If yes, please explain:</p>			
<p>8. Indicate the total number of participants you plan to include or enroll in your study.</p> <p style="text-align: center;">25-50</p>	<p>Indicate the age range of the participants that you plan to enroll in your study.</p> <p style="text-align: center;">18 to 80</p>		
<p>9. Do you intend specifically to recruit participants from any of the following groups?</p> <p>If you checked "yes" to any of the boxes in #9, describe the methods you will use to provide the special protections to which these groups of participants may be entitled under federal regulation. (Some special protections are listed in 45 CFR 46, available at http://ohrp.osophs.dhhs.gov/humansubjects/guidance/45cfr46.htm.)</p>	<table border="1"> <tr> <td> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No </td> <td> <p>Minors (persons under the age of 18) Prisoners Persons with legal guardians, or those otherwise unable to provide informed consent: _____</p> </td> </tr> </table>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<p>Minors (persons under the age of 18) Prisoners Persons with legal guardians, or those otherwise unable to provide informed consent: _____</p>
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<p>Minors (persons under the age of 18) Prisoners Persons with legal guardians, or those otherwise unable to provide informed consent: _____</p>		
<p>10. Describe the process you will use to recruit participants and inform them about their role in the study. Please attach copies of advertisements, flyers, website postings, recruitment letters, oral or written scripts, or other materials used for this purpose. If you use a nomination process, indicate how you will advise participants about who nominated them.</p> <p>A posting on FELIX and emails to Winter Session 2004 attendees.</p>			
<p>11. Describe the inclusion and exclusion criteria and how these will be sensitively communicated to potential participants. What will you say to potential participants who do not meet your inclusion criteria? Please attach copies of any letters or scripts you will use to exclude potential participants.</p> <p>Inclusion criteria are active students at Fielding. We will accept all participants as time allows and/or until we obtain the number needed.</p>			
<p>12. Please check Yes or No as appropriate in the column at the right. Respond to the statements in the right hand columns. When responding, consider both the actual and potential risks that could reasonably be expected to occur during the course of the study.</p>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Disclosure of the participants' responses may place the participants at risk of criminal or civil liability.		
	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Disclosure of the participants' responses may be damaging to their financial standing, employability, or reputation.		
	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Participants may encounter physical risk.		
	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Participants may be subjected to stress beyond that ordinarily encountered in daily life.		
	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Participants may be asked to disclose information that they might consider to be personal or sensitive.		

<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Participants may be presented with materials that they might consider to be offensive, threatening, or degrading or they may encounter other forms of psychological or social risk .
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	The fact that a person participated in research will be reported so that the participant can obtain research credit .
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	As a result of this research, a permanent record will be created that will contain information (identifiers) that could reveal a participant's identity.

13. If you answered “yes” to any items above, discuss the risk below. Describe the steps you will take to **minimize risk** to the participants.

A videotape will be recorded of the participant's responses. The risk of revealing identity will be minimized by having only the researchers and research assistants see the videotapes.

Please describe any **other** risks to participants you may have identified and the steps you will take to minimize those risks.

14. Describe the procedures you will use to **obtain and document informed consent and/or assent**. **Attach copies of the forms that you will use.** The Fielding Graduate Institute IRB website has a sample informed consent form. *(In the case of secondary data, please attach original informed consent or describe below why it has not been included.)* If you are requesting a waiver of consent, then you must fully justify any request for a waiver of written consent or parental consent for minors.

We will use an informed consent process of providing a written informed consent to the potential participant, having them read it and ask any questions they may have, then answering any questions, after which they may choose to sign and participate or decline with no ill effect for declining.

15. Indicate how your data will be used. <i>(Check all that apply)</i>	<input checked="" type="checkbox"/> Dissertation	<input checked="" type="checkbox"/> Publication/journal article/presentations
	<input type="checkbox"/> Pilot Study for Dissertation	<input type="checkbox"/> Results released to participants/parents
	<input type="checkbox"/> Knowledge Assessment (provide KA number)	<input type="checkbox"/> Results released to employer or school
	<input checked="" type="checkbox"/> Other <i>(please describe):</i>	<input type="checkbox"/> Results released to agency or other organization
	Fielding Institutional Research	

16. Describe the steps you will take to ensure the confidentiality of the participants and data. Indicate how you will safeguard data that includes identifying or potentially identifying information (e.g. coding). Indicate when identifiers will be separated or removed from the data. Also, indicate where and how you will **store** the data and how long you plan to retain it. If you are going to dispose of the data, describe how you will dispose of it (e.g. erasure of tapes, shredding of data).

Videotapes will be viewed only be researchers and research assistants. Transcription and/or coding of the videotapes for analysis will not include a record of any personally identifying information.

Fielding Case Study Informed Consent Document

INFORMED CONSENT FORM

1. Study Title:

A case study of how people learn collaboratively mediated by technology and distance

2. Performance Sites:

Fielding Graduate University
2112 Santa Barbara Street
Santa Barbara, CA 93105

3. Name(s) of Investigator(s):

Heidi Alvarez, Erasmus University, Rotterdam, Netherlands, Doctoral Candidate
(heidi@fiu.edu)

4. Purpose of the Study:

This project is studying how advances in information technologies nurture success in establishing and sustaining collaborative learning groups and communities. The study is being conducted at Fielding Graduate University during Winter Session 2005 with currently active Fielding students, faculty, and administrators. One objective is to understand the process of how people learn collaboratively as mediated by technology and distance. A second objective is to apply findings from the Fielding case study to theorize what social and technological elements contribute to enhancing collaborative learning groups and communities in the achievement of goals such as knowledge creation and sustainability.

5. Description of the Study:

The methodological approach will be to use an unstructured interview technique. The interview will last approximately 30 minutes. This means the investigator will ask you a series of questions about yourself and your experience of learning at Fielding. In order to maintain the most accurate record possible, the investigator will videotape the interview. If at any time during the interview you should decide you do not wish to continue participating in the study, you may stop with no effect. Your data will be destroyed if you decide you do not wish to participate. Two to four weeks following the interview, an email survey **and a request for an electronic version of your curriculum vita** will be sent to you to follow up on items identified during the interviews and to get demographic information. The survey should take approximately 15 minutes to complete. Again, if at any time during the survey you should decide you do not wish to continue participating in the study, you may stop with no ill effect. Your data will be destroyed if you decide you do not wish to participate. **In addition, upon completion of the analysis, a summary of results from this study will be sent to each participant via email. Your email address will be used for the above described purposes only, after which the investigator will destroy her copy of the email address.**

6. Benefits to Participant:

There is no guarantee that you will receive any benefit from this study.

7. Risks to Participant:

There are no known risks to participating in this study.

8. Alternatives to Participation in the Study:

The alternative to participating in the study is to refuse to participate with no impact on your status at Fielding. No one other than the investigator will know whether you did or did not participate.

9. Participant Removal:

You may be removed from the study if the investigator determines there is good reason for stopping the interview. If this happens, then the investigator will destroy your data.

10. Participant's Right to Refuse to Participate or Withdraw:

You may refuse to participate or withdraw from the study at any time during the interview without jeopardizing, in any way, your status at Fielding. If you have any further questions about the research after you have completed your interview, you may contact the investigators as listed on page 1 of this consent form.

11. Participant's Right to Privacy (concerning confidentiality and anonymity):

Only the Investigator will have access to confidential data other than the informed consent form which identifies you by name. The Institutional Review Board of Fielding Graduate University retains access to signed informed consent forms. You will not be identified in any reports or publications resulting from this study. Your privacy will be protected and neither your name nor any personally identifying information will be used in any manner. Your absolute anonymity cannot be guaranteed insofar as someone may see you enter or leave the research site. The results of the study may be published or presented in professional venues. In addition, this study has been partially funded by the National Science Foundation; consequently, the results of the study may be released to the funding agency. In all publications and presentations, neither your name nor any personally identifying information will be used in any manner. The data collected from and about you will be maintained in a secure location. Those data will be used by the investigator for analyses in the future; however, all personally identifying information will be removed and your confidentiality will be maintained.

12. Signatures:

The study has been discussed with me and all my questions have been answered. I understand that additional questions regarding the study should be directed to investigators listed on page 1 of this consent form. I understand that if I have questions about participants rights, or other concerns regarding this research, I can contact Daniel Sewell, Ph.D., Associate Provost for Research at Fielding Graduate University (805-687-1099). I agree with the terms above and acknowledge I have been given a copy of the consent form.

Printed Name of Participant

Date

Signature of Participant

Date

Signature of Investigator

Date

Appendix D

This appendix contains the Interview Questions Guide and the ICT Map Handout description.

Interview Questions Guide

Fielding Graduate Institute Collaborative Learning Groups and Communities

**Case Study
January 13 – 18, 2005**

Interview Questions

- 1.1)** How does FELIX support learning individually and with others?
- 1.2)** To what extent do you:
 - 1.2.a. Share literature?
 - 1.2.b. Discuss literature you have read?
 - 1.2.c. Share data?
 - 1.2.d. Review each other's work?
- 2.1)** Are there specific technology improvements you would like to see in FELIX?
- 2.2)** Have you used technologies to work with colleagues other than FELIX?
- 3.1)** Are you familiar with the term "Information Communication Technology" or "ICT"? (Prepare a definition on slips of paper).
- 3.2)** Which ICTs do you use in your PhD program?
- 3.3)** How would you define advances in ICT?
- 4.1)** Does your PhD program involve shared knowledge creation activities?
- 5.1)** What activities do you do with other PhD students?
 - 5.1.F.1)** How does Fielding encourage collaboration?
 - 5.1.F.2)** Do you feel that there is anything in Fielding policy or operation that discourages collaborative learning?
- 5.5)** How would you rate your satisfaction with collaborative activities on a scale of 1-5, with 5 being the most satisfied?

5.6) What is your preference, to work individually or collaboratively?

5a) When did you begin to understand and trust these collaborative learning methods at Fielding?

5b) Is there anything you would change or improve about the Fielding collaborative learning environment?

5b.F.1) How do collaborative technologies help you in your program?

6.1) How does your geographical location impact on your learning process with Fielding, if at all? (If not, skip 7 and 8)

7.1) Which ICTs help to reduce the effect of distance on your PhD program?

8.1) What are the current short-comings of ICT in reducing the effect of distance?

9.1) If you could design an ideal ICT environment to aid your collaborative learning for your PhD, what would it look like?

Supplementary (time permitting):

How do you contract (student / faculty) on a knowledge area?

ASK FOR CV OR RESUME

ICT Map Handout Description

We used the Figure 4 and Figure 5 ICT Cyberinfrastructure maps as a handout that illustrate the scale of ICT from no technology to advanced technology. By sharing this reference tool with the case study informants we insured that we were referring to the same ICT.

The rationale for placing technology on a line in increasing order of advancement is to align with the way ICT is represented on our initial concept map in Chapter 4. There is an ordinal scale from “no technology,” to “advanced technology.” This study does not entertain Collaborative Learning Communities and groups functioning at the no technology end of the spectrum, but rather how ICT enables CLCs. Still, the no technology starting point for the ICT handout is useful in defining the evolution of ICT. The order represented is derived from the rapid advancements in ICT beginning in the 1970’s, when advancements of the personal computer, local and wide area networking began, revolutionizing the technology options available to collaborative learning over distance. To further define and justify the ICT progression we illustrate in the map handout, it is useful to take a quick glance backwards.

Before the 1970’s, while telecommunications technology and applications were beginning to emerge, ICT was primarily IT, used mainly for computing intensive tasks. The “C” in ICT was missing. Aside from sparse computer usage, the telephone and FAX, paper based postal and courier services provided the bulk of communications support. These paper-based systems are represented on the ICT map as no technology.

Let us look at how the “C” in ICT developed. Alexander Graham Bell invented the telephone in the 1870s, and facsimile transmission over wires or faxing was invented by Alexander Bain, a Scottish mechanic, in 1843. By 1920 the Associated Press had a network installed to support the transmission of faxed pictures, a process called phototelegraphy, significantly improving the flow and richness of communications for newspaper dissemination. Telephone coupling devices were made affordable and telephone services spread rapidly from the 1930s, however, it was not until the 1960’s that relatively inexpensive fax machines became available for connection to the Public Switched Telephone Network (PSTN). Shortly thereafter the most significant and revolutionizing ICT tool, the personal computer, first appeared on the world market in the 1970’s.

To understand the increasing order of advancement of ICT on the map handout, it is useful to spend a few minutes reviewing the last three and a half decades since the personal computer began to populate business and government offices, schools, and homes. This explanation is not intended to be a comprehensive history of advances in ICT, but only to provide the justification of why the Fielding case study ICT map handout illustrates ever-advancing ICT. Along with the personal computer revolution, the design and deployment of the first Internet, known as ARPAnet, hit the drawing board in 1969 in response to the Cold War between the US and Russia. ARPAnet was

intended as a virtual bomb shelter for US military communications. That initial Internet served as the model for the National Science Foundation's 1987 program announcement for NSFNET. This call said, "It is anticipated that over the next five years NSFNET will reach more than 10,000 mathematicians, scientists, and engineers at 200 or more campuses and other research centers²¹." After five years, those numbers were more than exceeded and network growth continues to be exponential.

By 1992, NSFNET became history, replaced by a production quality broadband Internet. "The T-1 NSFNET project has been a remarkable adventure," said Stephen S. Wolff, then director of the National Science Foundation's Division of Networking and Communications Research and Infrastructure (DNCRI). Wolff continued by noting that:

It's an experiment whose success goes far beyond even the highest hopes we had for it. Because of this program, it's now conceivable that the U. S. can implement a network connecting every student and teacher in the country--from kindergarten to post-college--before the end of the (20th) century, revolutionizing education and research (NSF).

The major changes in ICT that started with personal computers and the nascent Internet in the 1970s, serve as the relative starting point for advanced ICT, meaning all the advances that bloomed since the telephone and FAX dominated that space, for the better part of a century.

Large scale access to end-user services, such as technical support, help-desks, and the like, as well as support software (e.g. Operating Systems, Middleware), became critical to the sustainability and wide-spread adoption of the advances on the ICT map. You may want to think of "C" in layers (Benkler, 2000; Benkler, 2006; Lessig, 2002). At the lowest level is the physical layer. The next level up is the first software layer – the operating systems and the network protocols. At the third level are the collaborative and communication technologies such as e-mail, chat, GSS, CSCW, and finally, at the top layer is the content (the subject matter of collaboration). FELIX would thus be at the third level.

For FELIX, standard first and second level layers of physical platforms, operating system(s), and network protocols are sufficient. But given that Internet2 provides the next level of advancement in layers one and two, the questions that we can raise are: *Are there new third level technologies available to replace FELIX? Should there be, to serve the content requirements of layer four much better?* The case study seeks to understand how FELIX has contributed to the success and growth of collaborative learning at the PhD level. As such, inclusion of both software and services along the ever-advancing ICT spectrum is both appropriate and relevant.

In summary, an ICT map has been provided to the Fielding stakeholders in the case study, representing the advancement of ICT in an ever increasing order, where very broadband networking and media rich (Daft, 1984a) immersive environments stand at the

²¹ www.nsf.gov

higher end. During the interview process, we tested the understanding of the case study participants regarding the terms in the map to insure they understood all of them. Verbal clarifications were provided as necessary by the researcher. We were specifically interested in finding out how ICT advances could bear on future instantiations of the Fielding learning model. For example, advanced infrastructure such as Internet2 networking and the Access Grid synchronous audiovisual meeting and collaboration environment can deliver highly rich media such as high definition multi-point video/audio conferencing. *Would such an application be strategic in furthering the ICT enabled Fielding CLC?* Defining characteristics for advanced ICT, such as bandwidth, volumes of data, possible number of simultaneous connections (point-to-point vs. Multipoint) allow us to develop a characterization scheme and then rate each technology along this scheme. As we enter the analysis phase in Chapter 7 we return to this characterization scheme and determine if it correlates with the qualitative responses of the informants.

Table 19 Demographics

CODE	YR	HOME STATE	HOME COUNTRY	WORK STAT	DIST. FROM PROG	EDUCAT. EXPER.	WORK FIELD	TECH OR TECH WORK	WORK STATE/ PROV
HOD-14A	0	CA	USA	1	0	3	Dean	non-tech	CA
PSY-1S	1	CA	USA		1	1		non-tech	
HOD-1S	3	NC	USA	1	5	2	CEO	non-tech	NC
PSY-2S	1	N/A	CANADA		2	1		non-tech	Vancouver
PSY-14F	0	CA	USA	1	0	3	education	non-tech	CA
HOD-2S	5	OR	USA	1	2	2	IT	tech	OR
PSY-3S	1	MI	USA		5	1		non-tech	
PSY-4S	1	VA	USA	1	5	1	ecommerce	non-tech	VA
ADM2	0	CA	USA	1	0	3	education	non-tech	CA
PSY-5S	3	MA	USA		5	2		non-tech	
HOD-3S	8	CA	USA		1	2			
HOD-4S	1	WI	USA	1	4	1	medical	non-tech	WI
HOD-5S	6	DE	USA	1	5	2	consulting	non-tech	DE
HOD-6S	1		USA	1		1	consulting	non-tech	
HOD-7S	3	CA	USA		1	2		non-tech	
ADM1	0	CA	USA	1	0	3	technical	tech	CA
PSY-6S	1	TN	USA		4	1		non-tech	
PSY-7S	1	NY	USA		5	1		non-tech	
HOD-8S	5	MI	USA	3	5	2	Retired	non-tech	MI
TEC1	0	WA	USA	1	2	4	IT/IS	tech	CA
HOD-9S	2	CA	USA	1	1	2			CA
HOD-10S	1								
		OR	USA	1	2	1	Director	non-tech	OR
PSY-8S	4	NJ	USA		5	2		non-tech	
PSY-9S	6	UT	USA		3	2		non-tech	
HOD-15F	0	CT	USA	1	5	3	education	non-tech	CA
PSY-11S	2	N/A	CANADA		4	1		non-tech	N/A
HOD-11S	1								
		CA	USA	3	1	1	N/A	non-tech	N/A
HOD-13F	0								
		CA	USA	1	1	3	education	non-tech	CA
HOD-12S	5								
		NY	USA		5	2	consulting		NY
PSY-12S	3	CA	USA		1	2		non-tech	
PSY-13A	0	CA	USA	1	0	3	education	non-tech	CA

Appendix E

Case Study Database

This appendix contains the Contact Sheets, representing the case study database. The names of the case study informants remain private due to agreements that the researcher made with the Fielding Internal Review Board and the informants via the Informed Consent Form. The following table lists the alias codes used to adhere to the privacy of the agreements. The first three letters of each code designates which primary or subunit the informant is associated with, in the Fielding case. The number was assigned in order of the interviews and is used to differentiate informants and to create a link to the Contact Sheets which follow. The final letter is used to indicate stakeholder type: “S” = Student; “F” = Faculty; and “A” = Administrator. These final letters are only used for subunit members.

CODE	Stakeholder Type
ADM1	Administrator
ADM2	Administrator
HOD-10S	Human Organization Development Student
HOD-11S	Human Organization Development Student
HOD-12S	Human Organization Development Student
HOD-13F	Human Organization Development Faculty
HOD-14A	Human Organization Development Administrator
HOD-15F	Human Organization Development Faculty
HOD-1S	Human Organization Development Student
HOD-2S	Human Organization Development Student
HOD-3S	Human Organization Development Student
HOD-4S	Human Organization Development Student
HOD-5S	Human Organization Development Student
HOD-6S	Human Organization Development Student
HOD-7S	Human Organization Development Student
HOD-8S	Human Organization Development Student
HOD-9S	Human Organization Development Student

PSY-10S	Psychology Student
PSY-11S	Psychology Student
PSY-12A	Psychology Administrator
PSY-13F	Psychology Faculty
PSY-1S	Psychology Student
PSY-2S	Psychology Student
PSY-3S	Psychology Student
PSY-4S	Psychology Student
PSY-5S	Psychology Student
PSY-6S	Psychology Student
PSY-7S	Psychology Student
PSY-8S	Psychology Student
PSY-9S	Psychology Student
TEC1	Technologist

The following pages contain the Contact Sheet Database. Not all informants answered every single question. All responses are provided, but for blank questions, those number are eliminated from the collection to save space.

Contact Type: Interview
 Code: TEC1

Site: Fielding Winter session January 2005, Santa Barbara

Question	Information (Summarized)
How does FELIX support learning individually and with others?	FELIX per se is really kind of used in two different ways. We'll say FELIX to everything that requires a log in to get to at Fielding. And sometimes more narrowly to the SiteScape software driven forum software. So I will say I'll take the broader interpretation of the two where library services is underneath FELIX. FELIX overall aids the students by providing information resources to them about Fielding, about the research process, about learning materials that they should be looking at, about knowledge areas that they should be studying etc. And that gives them a place also...and this is the narrower interpretation of FELIX...to exchange ideas with faculty with each other and to post their papers.
To what extent do you Share literature?	discussion of literature I know takes place on FELIX on the discussion forum software. But that's not really the...I would say in a sense that happens after I hand off the research process. The students come to a library if you will, to say either one of two things. "I already know, I'm supposed to need, or looking for a particular article, I know the citation, how do I find it?" Or they come to us and say, "I'm trying to find everything that I can about subject X." And we help them find that. And then once they've found it, I think after that the exchange takes place on FELIX with other students. What do you think of this piece of literature or can you recommend another one?
Are there specific technology improvements you would like to see in FELIX?	we use the SiteScape forum software as entry point into FELIX ,it's somewhat unintuitive and confusing to some new students because they have to log into a forum discussion software and then we see a lot of discussion forms etc., and they have to find the right link to library services to go there. Our IT department is working on a single sign on solution where authentication and authorization really takes place on a higher level and SiteScape and language services can kind of authenticate the services underneath that rather than everything kind of riding on SiteScape. That would be a welcome change.
Have you used technologies to work with colleagues other than FELIX?	within Fielding together with our IT department we have deployed a proxy server that relays the connection from the student to external databases (e.g. digital libraries). So the student's web access really passes through our proxy server, which has a known IP address, that belongs to Fielding, and we give the vendor this proxy server IP address. And then the students' access actually comes differently; it is relayed by this proxy server.
Familiar with "ICT"?	yes
Which ICTs do you use in your PhD program?	WebEx software which is a web-based [unintelligible] the software that allows for a group of people to come together via one web interface and ask questions and chat and share documents and show presentations and such. Telephones, of course TCP/IP networking and web access, FELIX is already on here. A few of my colleagues and myself use NetMeeting for one-to-one meetings with camera and headsets and so on. Telephone, fax, you have a PBX.
How would you define advances in ICT?	, IPv6 is an advance from the engineering point of view, but to the end user it should not be relevant, it should be totally transparent. So I mean I wouldn't argue that IPv6 is not advanced, but what I'm looking at, the

	kind of advance, is allowing people for example to use one log in to get to dozens of different resources, rather than a dozen different logins and passwords.
Does your PhD program involve shared knowledge creation activities?	there is a strong collaborative element to the work that the students do but that's about all I can tell you about, that is the nature of interaction. My involvement is no Other than to
What activities do you do with other PhD students?	help the students locate any useful resources. (for their research)
If you could design an ideal ICT environment to aid your collaborative learning for your PhD, what would it look like?	that would be a portal-based access to all web-based resources in terms of texts, graphics, documents, video, audio and so on. That they are accessible through a portal that customized, customized by each user. But I would also like to see as part of that structure the ability for students to have a NetMeeting like function. NetMeeting is now old and obsolete and all [unintelligible] software but I still love it. And I would like to see that kind of function built in to the portal or FELIX. So that as easily as clicking a link to, let's say, send an email to a faculty member, a student can click another link and have a video conference with audio with a faculty member. And if that faculty member wasn't available, they would be directed to some kind of a mailbox, where they could leave a message without them having to go to the email program, and say, "I just tried to reach you via this other thing. And I'm sending you email to [unintelligible] send me a phone message or send me...I'll fax you the web page so that you can then send me a letter with some other thing added

Contact Type: Interview
Code: ADM1

Site: Fielding Winter session January 2005, Santa Barbara

Question	Information (Summarized)
How does FELIX support learning individually and with others?	Because Fielding's faculty and student population are distributed across the US and in other countries, it provides a virtual space for people to meet. I think of Fielding's programs as having been multi-modal [phonetic] from the inception in 1974 of the institute, and so this was, it's an in-person advance as well as people working at a distance and communicating via the US postal mail when technology came along to support it. It was a natural [unintelligible] what you did initially as part of CompuServe and later as StellaNet [phonetic], Sprint, and when the Internet became available to individuals then we made a move to the Internet, and that was in 1996. And the software that we reviewed, many softwares. And in 1996 this was pre-Blanford [phonetic], pre-WebCT, all that kind of thing. We reviewed quite a number of them and then settled on this one that was developed by DEC that is actually designed as collaborative software. So that provides an online space where both seminars can take place. Whole community discussions, whole institute-wide discussions as well as project teams.
To what extent do you Share literature?	. I think I'll answer from the administrator's point of view. And in terms of sharing information. Well I'm mostly concerned with setting up the space initially to do that. And then the faculty take over in that regard. And it's been designed in different ways in the different programs at Fielding to how that is actually done. So for instance the Masters in Organizational Development, Organizational Management, current title, the original title was Organizational Design and Effectiveness. They designed their program to be online initially and to support students in that way. So they provided a very tight structure and

	<p>assignments and so it was quite clear what students were to read and how they were supposed to read, write about it and then respond to each other. But I think that's kind of been a model in fact where the other doctoral programs have come more recently to online learning in a way they've taken that long.</p>
<p>Are there specific technology improvements you would like to see in FELIX?</p>	<p>Yeah, right now we're using an asynchronous technology, WebEx and that's not possible to integrate into our forum environment but Centra is. So if we made the move from WebEx to Centra we could include that and so it would simply be another tab that people could click on. That would be one improvement that I would like to see.</p>
<p>Have you used technologies to work with colleagues other than FELIX?</p>	<p>Well we certainly make use of email that's not integrated into the forum software. Some people choose to make use of instant messaging. What else? People make use of net meeting from time to time. In our distributed environment it's sort of like whatever a person is comfortable with they'll try to get other people to use too.</p>
<p>Familiar with "ICT"?</p>	<p>Yeah, generally</p>
<p>Which ICTs do you use in your PhD program?</p>	<p>Well we certainly use email and meetings, and we use Forum Software, and when I say meeting that includes that WebEx. Well we didn't use in-person meetings but we're talking about the online environment. So, email, NetMeeting and WebEx, that synchronous kind of thing, and many people do use instant messaging. And one of the things we make, whatever we use has to be available at an individual person's home for the most part. So we tend not to use much video conferencing. The other thing is we've got an uneven situation in terms of bandwidth so we got plenty of people [unintelligible]. My personal philosophy is to go for a low common denominator, technologies that would be accessible to everyone. That's not everybody's philosophy. So we have a certain segment in psychology particularly are making use of more synchronous, bandwidth-intensive technologies, and I would include WebEx in that environment.</p>
<p>How would you define advances in ICT?</p>	<p>It seems like bandwidth and infrastructure as one and distribution. There's certainly that. The other thing that of course is the continued miniaturization and distribution in all these peripheral devices. For the most part we've got more students that are located in the United States and we tend to have a pretty much of a PC based community of users. But we're getting people that are making more use of hand held devices on that. Certainly using it for email, or little bits of email. So, I see that as the direction things are going when everything is digitized and possibly smarter. I have some real concerns about that myself. My concerns are several fold probably. One is that whatever the mindset and the assumptions of the developers are not necessarily clear to the users of that technology. So. And with the miniaturization piece, in all that I'm getting out, we've got all the security issues. And those are really remaining invisible, and so how that's getting controlled and managed. Privacy, that's, I would have to say, is a big issue.</p>
<p>Does your PhD program involve shared knowledge creation activities?</p>	<p>I would say that in some cases yes. And I'm thinking of HOD and Psych, and they do it in different ways as I see it. Shared creation, in the HOD school, the HOD doctoral program assessing in knowledge areas there's several different things that constitute that. There's sort of an overview and an in-depth and an applied portion of that. Particularly with these overview sections often times a group of students would get together and each do portions of that and so it becomes very much an output that's shared. A shared creation product. And, there's not been too much at the dissertation level I think. There's been a little bit, but</p>

	<p>not so much because I think that how you evaluate, you know, shared creation, shared knowledge creation. I don't think [unintelligible] has figured it out yet. So that's an issue we're trying to do.</p>
<p>What activities do you do with other PhD students?</p>	<p>I try to share an administrator of the online forum environment in particular. I try to share with the program members. It's usually associate deans if I can find somebody that's willing to do that. The creation process of how we're going to structure their online learning environment. What kind of group forums we have, how we're going to deal with. I should say, we have online a form that's called a Forum Request Form. And the faculty or students or administrators use this to fill out and request a forum. I put this together. And so one of the questions is, is this for forum members only, in which they would list it, is this for the community. And so I will get request for forums for special interest groups or literating [phonetic] groups or project teams and deciding how and we've got a few different ways to create forums. Deciding which of these we're going to use in which instants and whether we're going to stick them in the whole workplace or if it's open to everybody or make them small groups. So there's collaboration that goes around that.</p> <p>Also around the orientation process we've tried to, prior to bringing in students, we create the FELIX accounts about three weeks prior to their attending an in-person event and give them an assignment to go through this tour. Which I think you have a copy of it.</p>
<p>How does Fielding encourage collaboration?</p>	<p>I think Fielding puts out the fact that in this knowledge area assessment process students are invited to do group assessments. That's certainly possible. And I believe in the psychology they actually have several clearer definitions of doing an assessment, doing a group assessment, doing a FELIX assessment. So that kind of laid out. And in HOD it's very much open and collaboration is encouraged. Verbally, certainly. And one of the things that's interesting is since the recruiting is done without regard for personal learning styles, or comfort online because we've got this background of a multi-modal approach. It's not like we're recruiting for an online environment necessarily so we get a certain number of people that they are just ready to go and they want more online seminars, they want to the whole thing online. Other people find that they're happier not. So, it's a mixed environment.</p>
<p>Do you feel that there is anything in Fielding policy that discourages collaborative learning?</p>	<p>Let me see. Where would that be? Yeah. I think so. I think that, personally, I think that for there to be collaborative learning there has to be greater understanding, among both faculty and students, exactly what that means. Because I think the students tend to come on in an environment that's not collaborative. Their whole background of education has not been particularly collaborative. So they may have gotten a notion about collaboration in their workplace if they've had occasion to work on collaborative workgroups. But anyway, I see that as one of these.</p> <p>And so I mean my experience of collaborative learning, there has to be the acceptance of the students that their peer-to-peer relationship is [unintelligible] is important. We don't have the faculty expert. And a lot of people haven't made that shift. And I think that the faculty haven't always made that shift. Even if they're not being an active participant some of them have a difficulty with seeing that according to their expertise and understanding, incorrect assumptions and thought and knowledge is being put out in a collaborative environment. And with faith in the process, you know, they may be</p>

	able to get through so that the student participants may look back over their shoulder and say, "Oh I used to think, and now I've come to, and I think that takes a special kind of mindset in preparation for it." So I don't think Fielding is providing that adequately. I mean a formal way. People pick it up, you know, by a kind of osmosis. More by personality type.
Satisfaction w collaborative activities on a scale of 1-5.	Oh, so three being center. Okay. Well I see that we're on a developmental road here, and so maybe we're at best in the four category. Maybe closer to 3.5.
What is your preference, to work individually or collaboratively?	I like working alone. And on the other hand I think best and at least in dialogue. So I need to have a mix of it. Which is one reason I've really gravitated to the [unintelligible] from this environment.
When did you begin to understand and trust these collaborative learning methods at Fielding?	Oh, gosh. Early, even before we were using technology, I would say. So because the Fielding philosophy has always been student-centered. And the faculty were not teachers and presenters, in fact we've got more teaching and presenting going on now than we ever did in Fielding's beginnings. So it was all very much in any in person meetings it was very much collaborative and I could see the, you know, the positive results of that. So I've had a lot of faith since and I came to Fielding probably in what was it 1987 I think, when I first came to look at Fielding.
Is there anything you would change or improve about the Fielding collaborative learning environment?	Well there's the technology piece of it, you know. And then there's the social issues piece of it. And the technology, of course, I would like everyone to have broadband, video cams and all of these little pieces to work with it. But the social piece which gets into that personal boundary management and knowing when to use which and for how many and to whom. And how to be nice, civil and to carry on disagreement, you know, respectfully, that's a whole other piece that I would now love to have been able to have, "Here's this package." Every new student. "Here you go." You know. "Here's all the technology," and give them a little mind [unintelligible] you know on [unintelligible] and so you some how socialize people. But that social thing isn't created yet. That culture isn't. We have kind of been working with that in our large group environment so we have these large group forums for instance, one for the entire program. And they, I tried to get someone of the program, for every forum we have I want to have a moderator there who's going to be a person that will take responsibility for providing some ground rules. And I don't really care what they are, I don't think anybody else does, but please make them clear and evident. It's very difficult to get someone to do that, and I don't want to do it. You know, it's not my job to create the culture for each program or for each forum. So that culture creation piece is tricky business. Our [unintelligible] agreed on a number of years back to be the owner/moderator for the Fielding community wide. And so we tried to leave that as free as possible and very seldom do we ever intervene in anything or delete material or move material, you know, almost never happens. But it's trying to create, we get a lot of complaints, you know, about why are you letting this particular person post these things. Well, we want to have an open community that's not in direct violation of the policies that we've laid out so far, and we want there to be room for disagreement and to represent multiple [inaudible].
How do collaborative technologies help you in your	Because the office has its very own environment and [unintelligible] see them fairly like a normal face, lot of face-to-facing [unintelligible]

<p>program?</p>	<p>about these two buildings that are continually impeding, collaboration of one kind or another because people feel that physical location. It's interesting because you lose, you know when distance separates you sometimes [unintelligible] can from informal chatter that could take place accidentally. Which is one thing that I think I am, can kind of make up for, depending on ones, how much personal resources a person has to make available for that. Right. One of the problems I see with Fielding staff and faculty personally is I think, and I think this is true for everybody. We're mostly overworked. We're working non-stop all the time. We're not really great with boundaries and so, I don't know. But I certainly notice a difference when I'm home. And I have to manufacture in my mind or else rely on technology to bring visual [unintelligible] for people. And I happen to have dial-up access at home. So I don't have broadband. It's not available unless I go to a more expensive satellite and have them done there.</p>
<p>How does your geographical location impact your learning process with Fielding?</p>	<p>Well I can sure tell the difference in geographical location when I'm either working in the Fielding office here in Santa Barbara or whether I'm working from home which I have to, 12 miles from here. And very different experiences. And I keep trying to tell other you know Fielding leadership that you should insist that every staff member work from home, so they get a feel for the difference.</p>
<p>Which ICTs help to reduce the affect of distance on your PhD program?</p>	<p>Well, you know, Real Cams [phonetic] and all that kind of thing can make a difference. When I think about those things I think of them from an administrator's point of view more than a personal users point of view. From a personal users point of view, you know, I feel pretty good about those things. From an administrators point of view. Yikes. You know, when you're talking support, all these different platforms and then all the different problems that people have with it, except there's not a uniform culture of use. One of my favorite things from, I forget what it came from, it was an email thing, they mention well as humans we've had about 50,000 years experience with language and 10,000 years experience with lighting and 100 years with the telephone, and we haven't had enough time really to put together the norms for online communication in a way that.</p> <p>And they're shifting. I mean just norms all over shifting because of this, the miniaturization and distribution, you know, cell phone. To my experience we have a pretty incoherent environment at this point in time with technology and I don't see it's likely to get much better. But as an administrator to support that, to iron out the differences, to keep people you know collaborating, not getting in each other's way, is big.</p>
<p>If you could design an ideal ICT environment to aid your collaborative learning for your PhD, what would it look like?</p>	<p>advanced ICTs in a box, that you can give to every new student and faculty. As well as socialization in how to interact in a collaborative way. So the box was very little and the socialization is large. [wrote paper with another faculty] And we talked about different kinds of literacies as being, you know, tool literacy and research literacy and publishing literacy and the various kinds of literacy a person might need and subsequently it's not included there, but community literacy is a big one.</p>

Contact Type: Interview
Code: ADM2

Site: Fielding Winter session January 2005, Santa Barbara

Question	Information (Summarized)
<p>How does FELIX support learning individually and with others?</p>	<p>Well I think it has the potential to do so. Whether it actually plays itself up and actually does so in the lives of students or faculty is more variable reality. I think it can support student learning by, number one, serving as a repository for all kinds of learning resources. There's information on FELIX like study guides and expectations about the dissertation process, and forums and things of that sort. So it's a repository sort of...I know it's been the [phonetic] correct use of the term in some ways. But in a way it's a resource room, a digitized resource room with all kinds of information. It also has information about faculty, although personally I don't think that information is particularly helpful. It's...sometimes it's out of date, it isn't particularly appealing or it's a, it isn't created with the student in mind really. The second thing is it's the platform that we use for our online seminars. So there are actually structured learning experiences, especially for the masters degree programs; that's where it actually happens. But even for the doctoral programs.</p> <p>I think, yes, I think it does. Of course it has these forums. I moderate one, actually I moderate a couple of them. But it's all predicated, well okay, first of all the answer is yes it could, and yes it does some of the time. But again it's variable because it depends on the skill and energy of key people to make it happen. I'll use this as an example: at my and a few other alumni's recommendation we established a forum for alumni who teach or work in higher education, because we saw ourselves as a community of people interested in higher education. I thought we could learn from our alumni who are teaching or working in other environments. And they wanted to be able to do the same. That forum has been sort of lying dormant, waiting for me or someone else like me to moderate it with greater skill and energy. And until somebody does that, you know, it kind of meanders. So the effectiveness of it, of FELIX as an environment - I mean maybe that's true of any line of work [phonetic], but certainly I feel it in this one - is very, very much influenced by the willingness and presence of one or two people to really make it a rich learning environment.</p>
<p>To what extent do you Share data?</p>	<p>I think that it facilitates the exchange not only, I don't mean just of information like sort of posting of like a bulletin board, but of actual creation of communities of interest.</p>
<p>Are there specific technology improvements you would like to see in FELIX?</p>	<p>I think the whole thing could be improved. I mean it's difficult to navigate. I'm not sort of evaluating how well it does those things. But it could, FELIX does serve, number one, as an environment where there is a lot of information about the resources both human and other in the environment. And certainly our library resources are a good example of that too. But also that other information like about processes and things. when I say FELIX in this instance what I mean is not necessarily the SiteScape forum stuff. I have one small thing that, for me, it would really, it's a pet peeve. I follow a lot of forums on that thing and often people will post the same notice to many different forums because not everybody is reading all those forums.</p> <p>I think it's actually very poorly organized. It's the layout and design of it, to me, is too dense, too complex, not intuitive And not easily searchable. And not necessarily processed, you know, not a lot of charts, flow charts, pictures. Other ways of conceptualizing things</p>

	[phonetic]. You know it was originally, originally designed by our librarian. Not our current librarian, but a previous person. And with due respect to librarians everywhere whom I respect enormously, it reflects a kind of information, it reflects that bias that I was talking about at the beginning, which is that it's an information-heavy place, rather than a facilitation-heavy place.
Familiar with "ICT"?	Yes.
Which ICTs do you use in your PhD program?	Some WebEx, I was going to say. Right. And the digital library.
How would you define advances in ICT?	Well, as a person who's not a technologist, I guess I would say, for me, I think an advance at Fielding would be more consistent support training use by more people in the environment. I mentioned this before. For me, one of the things that holds us back is the variability and even the use of what we have already because of... There are three constraints that I can think of, and one, you're right, there are some things we can't do anything about. You know if someone lives in a particular setting where there is no connection or an inadequate connection, we're not going to start digging, you know, and laying fiber to get to them. We can't do that. But there are many of our faculty, I'll use faculty...but I suppose in an idealized world, if money weren't an object to our students, but certainly our faculty who don't have the right equipment, because they haven't purchased. They either don't know how to purchase it. So some of it is actual support. Like I think we should be providing greater equipment support of the actual physical infrastructure that they need that we could provide. Sort of properly configured computers, and then the kind of development activity that would both make them basically skilled at the sort of how to do it. And then provide them with enough support that they could learn how to do it well. I mean, not just know which sort of tools to use, but could actually use them to maximum advantage. So I think, if we had computers at...well I mean that's the obvious one. If we had our faculty all on the, a really fine computer platform, and then we had them trained and could support the training on how to use that even to advantage... Given what our current circumstances are, that would be a tremendous improvement for us.
Does your PhD program involve shared knowledge creation activities?	Yes, it's part of our learning model as far as I'm concerned. when you're doing doctoral education with people who are as professionally, at minimum professionally accomplished and as experienced as our students are, and when we believe in a learning model that is about, that is not a kind of expert model of faculty having knowledge sort of just... I don't know. Telling it to students. I think one of our tremendous value-added in this is the notion of a learning community, is of the community. And the community is the context for collaborative learning. And I think our students will often...I think one of the reasons our alums come back or seek to remain connected with Fielding, or there have been a number of conversations about how to do that, is in their experience once they graduate there are very few other learning communities like this one, where there is some sort of shared conceptual framework. Where there's the kind of individual and interpersonal respect and caring. And three where there's the kind of diversity and richness of experience that people bring here. So I think absolutely it's part...I mean it's what sells... It's one of the main selling points for Fielding.
How does Fielding encourage collaboration?	Well I think one is by having a model, a learning model that actually says to students, number one, the cluster concept. I think, number two,

	<p>the very existence of the forums, some of which are...many, all the ones that I follow, that are not oriented for courses, but are around shared professional or academic interests. I think the fact that students can complete work, sometimes individually, sometimes collaboratively.</p>
<p>Do you feel that there is anything in Fielding policy that discourages collaborative learning?</p>	<p>One thing in particular, and we haven't really done...well we haven't dealt with it effectively, which is the prohibition against collaborative dissertations.</p> <p>That's one of the reasons we don't want to be the first. Our standing as a 30-year non-traditional institution just makes us unwilling to confront such a sort of cannon of the academy that directly. It would just jeopardize our credibility to too great an extent. And so we've tried...but we could be, we could be a bit more creative and clear about ways in which it can happen here. For example, it had happened in a funny...in a sort of approximate way, and I, I don't know if you heard this story, but in HOD there were three students who really wanted to do a collaborative dissertation. In the end what they were asked to do was to each write individual dissertations about the same phenomenon but from different points of view. And for which they would each be held personally responsible.</p> <p>In psychology I know that there were, there was a faculty-led study called the Student Development and Diversity Study, SDDS, and there was a common dataset. And there were at least two dissertations that I know of that came out of that dataset that were, were individually done. <u>I think we could foster more of that. I think we could do more of that.</u></p>
<p>When did you begin to understand and trust these collaborative learning methods at Fielding?</p>	<p>I think that a person who is fundamentally - I don't mean to sound too much like a psychologist - but sort of trusting and is willing to sort of take the environment at its word will more often than not find that we've lived up to that. And then there are others who, for a variety of I think sort of personal make-up and historical reasons, seek to find out the ways in which the environment doesn't live up to its PR.</p>

Contact Type: Interview
Code: HOD-1S

Site: Fielding Winter session January 2005, Santa Barbara

Question	Information (Summarized)
<p>How does FELIX support learning individually and with others?</p>	<p>Individually it's more of a resource. It's information, provides information that guides, you know, study guides, policies, information kinds of things. I don't see it as a very alive tool. I don't see it as an interactive tool. I did participate in the online facilitation workshop which was a not very good experience for me so that was using FELIX but it was not, or the whole system, not very useful in that regard. It's more for me about, it's a warehouse of information.</p> <p>I haven't done any online seminars with faculty or anything like that.</p>
<p>To what extent do you Share literature?</p>	<p>One of the research faculty has a site that some people that he has worked with or is currently working with, he's posted information. So that's kind of a sharing, but it's really more of him sharing and us retrieving.</p> <p>So I don't think something like, my read on that experience is that it's not every effective for that. I don't use it for that. I don't look for that and I don't participate in that kind of forum.</p>
<p>To what extent do you Discuss literature you've read?</p>	<p>Never engage in online discussions at all.</p>

To what extent do you Share data?	I don't anticipate sharing data [for dissertation research]. The only way I did that in my pilot study with another student was electronically sending transcript where she served as a research assistance in essence to interpret with me the data with me as part of that protocol, but not on an ongoing basis. I couldn't really share data. I wouldn't be able to share data with other students in a raw data format, in my IRB. I can't do that. My consent wouldn't allow me to do that.
To what extent do you Review each other's work?	Some of us have shared papers but we didn't share them in really a review and respond kind of mode both on, in the development stage we didn't do that at all. After they were posted into a discussion about them and the content about them, we didn't do that either.
Are there specific technology improvements you would like to see in FELIX?	Speed; ease of navigation; something that doesn't look like 1960s in its graphic design and layout; the ability to find things. I just find it extremely cumbersome and difficult and not user friendly. I'm not a really big fan of FELIX as you can tell.
Have you used technologies to work with colleagues other than FELIX?	I've used lots of others and I think that's probably why my frustration with FELIX is high. I teach in an Phoenix online university, And I also teach at University of North Carolina at Greensborough and we use Blackboard. This semester I'm also teaching at University of North Carolina at Charlotte and they use WebCT, which I haven't used. I've also used WebEx for meetings –
Familiar with "ICT"?	: Not until you mentioned it.
Which ICTs do you use in your PhD program?	certainly use telephone, fax, that kind of stuff. Obviously meetings and mail, paperbacks, books and journals, cellular technologies and those kinds of things, Internet obviously, FELIX I use, we talked about Blackboard and WebCT. Digital libraries and databases, that's like search engine technologies through libraries.
How would you define advances in ICT?	I don't know that I have an answer to that. Because I'm not sure advances, I tend to think about technology more in terms of what it does than what it is. And what it can do for me versus what it is.
Does your PhD program involve shared knowledge creation activities?	My dissertation research involves in a sense a collaborative meeting making. Because the participants are asked to not only respond to a series of questions, part of that set of questions is what does their own experience mean So I think that's a form of that. You know I think the high touch part of this institution's learning model really reinforces that when we are together there's a need to do face-to-face kind of interaction. So there's more about collaboration of content and process when we're together than for me has been by technology through FELIX. There are people that I connect with my phone and email pretty often and we share ideas and share material and share resources and those kinds of things. The other thing that strikes me in that is a question that I was thinking about this morning and woke up and I was thinking about how, what's the conversation that most of us engage in when we're together. And the conversation tends to, I think, take two forms when students are talking to students. One is the personal part of how you're doing and the second is what have you gotten done or what are you doing. As opposed to not, what's the checking off process that you're going through, what's the, you know, assessments you completed or the work you've done on your dissertation as opposed to what's the theory you're working on, what's the content that you are in to. We don't engage in a lot of that conversation when we're

	one on one
What activities do you do with other PhD students?	I've done national sessions, research practice sessions. I'm also in governance committees so that involves students, student activity involvement, with faculty involved in that arrangement as well, in the governance process here. I've done other workshops like the online facilitation. I did the program at the Highlander Center that building [unintelligible], that was a collaborative, or working together process. I have not been involved in cluster meetings. I've been to a couple of those in two years. I also was a student anchor at an orientation week and that was a really good experience of not only interacting with new students and the faculty but experienced students as I was at the time and they were being able to interact too. Being on other dissertation committees as a student reader and having a student on my committee and then there are a few students and we interact by phone and email in between sessions or something like that. It's kind of a support system.
How does Fielding encourage collaboration?	some faculty will suggest when you're working on something that another student has a similar interest And so there's some connecting there. That's a form of collaboration, so-and-so's doing that work or whatever. Another is, intensive sessions where faculty will, a group of students will work with a faculty member and [unintelligible] that's another collaborative learning experience.
Do you feel that there is anything in Fielding policy that discourages collaborative learning?	No, no. I think it's, there's nothing that's restrictive at all, no
Satisfaction w collaborative activities on a scale of 1-5.	Four
When did you begin to understand and trust these collaborative learning methods at Fielding?	Well I had done, before I applied, I did a fair amount of investigation about Fielding including interviewing faculty before I applied, interviewing alum before I applied, interviewing students before I applied – current students – and looking at materials and so forth, so I think I had a fairly good understanding, probably on a scale of one to five, like a two maybe a three coming into the orientation. It wasn't until probably six months or so after I was doing the work that I probably really understood. Now, when did I trust it? it wasn't that I didn't trust it. It was just that I trusted it in a different way meaning that where the model is collaborative, the reality is not as collaborative as the model might want to portray that it is, or that it needs to be in order to accomplish the education and ultimately the degree. However if you want to play a collaborative game throughout, I know some people who have done almost all of their KA work collaboratively
Is there anything you would change or improve about the Fielding collaborative learning environment?	Well the whole image and navigation of the web, the ability to find what's there without having to read the personal comment about what's there, so you really can find what's meaningful. So I guess that's probably not only how it appears but how it's organized and how it's searchable.
How do collaborative technologies help you in your program?	But I think the bigger more fundamental is how do you have a group of people who have a shared goal but with so many different directions on so many different time schedules and so many different individual personal needs come together once every two months, or maybe every month, with not everyone being able to be present, with so much diversity built into what all of that creates, to have anything that's productive and meaningful. And I think that's the bigger question: what's the purpose of the cluster?
How does your geographical	Well there's no cluster group that's real close to me and I think early on

location impact your learning process with Fielding?	I wish I had had more of that connection. Just too much of an effort for too low a return to get to a cluster meeting. What was helpful was there was a student who lived in the same city and so she and I got together once a month. That support was very helpful
Which ICTs help to reduce the affect of distance on your PhD program?	Probably more of what you put into your middle and low tech ranges. With the technology of telephones and to a limited degree, fax, mail, I mean you know faculty don't large documents email. They want them mailed to them so we're back to kind of basic stuff. Journals and books clearly, Most say if it's over 30 pages don't email it
What are the current short-comings of ICT in reducing the affect of distance?	the library search is not as effective as you'd like and you'd rather use the North Carolina library, Another is that even though we've got Information Communication Technology for submitting papers, the faculty don't want, that you work with, don't want to use it
If you could design an ideal ICT environment to aid your collaborative learning for your PhD, what would it look like?	having virtual clusters available online and attend-able online would be really interesting

QUESTION	SALIENT POINTS	THEME/ASPECT
What would you improve?	More support for people who never meet face-to-face, because it's harder for people when they don't come to session to be able to collaborate, they're isolated. And to pay closer attention to taking the results of the collaboration and having those available to students who want part of the collaborative	Media Richness

Contact Type: Interview
Code: HOD-2S

Site: Fielding Winter session January 2005, Santa Barbara

Question	Information (Summarized)
How does FELIX support learning individually and with others?	Well that's an interesting question because I'm not probably a heavy user of FELIX for a number of reasons. When I'm in a seminar or taking a course where people are using it as the main meeting place, then I use it and post there. In terms of general communication within...I don't go there. Actually not only do I not go there, I don't like it. It feels unsafe to me. Because in the beginning when I was a new student I posted some things, and you know I always had this impression that a university was a meeting ground of lots of diverse opinion. And what I noticed was when you put something out there, what you got back was all these you know, kind of almost black kind of. And people were not very gracious, or it didn't seem as if people knew how to engage in discourse on that media, and so I stopped posting there. And so it doesn't support my connection to the university very well, but in terms of courses, that seems to work fine.
To what extent do you Share literature?	Again when it's in a class, like for instance, last year I was in a seminar for concentration we have [unintelligible] which is information societies and knowledge organizations and our seminar posted there and we put our work there and people could review our work.
To what extent do you Discuss literature you've read?	A few people would read it and comment but the comments weren't what I would call critique they were more, "Oh this was really interesting." You know. "Good job." As opposed to really engaging one another in discourse and critique and I mean that in the academic

	way.
To what extent do you Share data?	It's interesting, I would say most of the citations that I've gotten are recommendations for books that have you know somebody like my mentor will recommend a book to me, or someone on my committee will recommend a book. It's usually in an email.
Are there specific technology improvements you would like to see in FELIX?	I think the way that FELIX deals with the threading of messages is a little awkward and so it's harder to get on there and really see what's going on. I know that the announcement seemed to me to be much better. Now when I look at an announcement coming from FELIX I kind of can get the gist of what the message is and I know whether I want to go in right away and look at it or whether I can wait 'til later when I've got to go into FELIX and do a sweep. There's a lot of like my meeting space on FELIX has a lot of stuff that I never look at. So it would be nicer if it was cleaner. Without you know, there's old forums on it and you know, I talked to Shelley Hughes about that, and her point is she can't just take the forums off you know. People have to kind of say well now it's... So when the environment, when you look at the environment it looks real cluttered. You know okay, where am I supposed to go. And I think, that's the other thing. Navigation in FELIX I don't think is real easy. When I'm looking for something, I have to look several places, it's not real apparent where things are.
Have you used technologies to work with colleagues other than FELIX?	Oh yeah, I would say that because we're distributed, the way I work with my mentor and my committee is through email. I'm a student reader and my, you know, I have a colleague, we're each other student readers on our committees and we speak on WebCam once a week and are constantly in contact on email. I would say that probably since I've been here, the most common use of you know furthering discourse, has been on email. That, we actually did a paper on that because we did a knowledge area and it was information systems. And we used the webcam to see whether it would enhance our collaboration. And our conclusion was that it did enhance our collaboration.
Familiar with "ICT"?	yes
Which ICTs do you use in your PhD program?	We know FELIX and email and webcam. You know I really access other libraries that way. So and I have found the librarians here to be excellent and very, very helpful so I use FELIX, that's one thing I do a lot in FELIX, is go deal with the libraries.
How would you define advances in ICT?	I guess I'm looking at you know the wireless. You know as things get more portable, also as things get more integrated. Like right now I'm wanting to replace my telephone to go to satellite communications. Because both what I want to do in the future and what I've done in the program, we went to England last year and represented the Association of Internet Researchers, in England and my cell phone didn't work. So I want to go to the GSM technology and since I have to change my phone to do that, I'm looking at getting a PDA phone combination. So I'm thinking you know I want all in one I want everything in one place and I want to have access through those things so that I'm less dependent on place for my connection. So I guess I would say that advances to me give people the flexibility to be connected when they need to be connected without having to be in a certain place or go find an Internet café or whatever it is. And I'm thinking that we'll get more and more that way.
Does your PhD program involve shared knowledge creation activities?	Yes, we've done a cluster connect in Portland.
What activities do you do with	the clusters are the regional...people in a certain region can get together

other PhD students?	and they it's really a place to do work outside of the national sessions. It's a local presence so that people who look to have you know a face-to-face experience have some place to do that. But also the clusters have a budget, they have \$2,000 each fiscal year. And so we tend to try to put together one or two intensives a year. And oftentimes like I had an intensive at my house, and we really created that intensive with the faculty. In this case it was Dean [phonetic] Shapiro. He was in Vermont, you know, we were going to have this on the West Coast, and so we created with his guidance, I mean he had a lot of input into that curriculum. But we kind of said here's what our needs are, here's what we'd like to do, we'd like to do you know, some people want credit for human development, some people want credit for learning and motivation, and so we'd like to put together a package that meets both those needs and we kind of negotiated for about three months putting together the curriculum, using email to do that.
How does Fielding encourage collaboration?	That's interesting because I think in spirit they're very encouraging. They do as much as they can to support the clusters. And you know there's always a cluster connect meeting you know with national sessions and they try very hard to encourage faculty to participate in clusters you know activities.
Do you feel that there is anything in Fielding policy that discourages collaborative learning?	No, I don't think that there's any policy that discourages, but I think there's more that could be done to encourage. And to help. And some of that is simply, in thinking about it, because I think about this all the time since it's an area of interest for me. And it's one thing that the University of Phoenix does really well, is orient the students and orient them as to how to use electronic media in a more beneficial way. We come in to the program, and we go through an orientation. There's a little tiny FELIX you know tutorial kind of thing you know, where you sit and you go through FELIX and it's an hour long and or you know, it might be two hours. But it's not enough when the students being hit with all of this entering a program, and all of the stuff that you have to kind of get under your belt and trying to get a rhythm under your belt. Some clusters do a real good job, or some groups, they're called anchor groups when you come into the orientation. Some anchor groups stay together and do a real good job of that. But it really depends on the students so there's nothing that they do to really support that in a real... Like acclimating the students, that could be done better. And I think there's other online universities that are focused online, and that's the big difference. Fielding isn't primarily an online university but yet in reality we have to use ICTs to do most of our communications. So I think there would be, there's more we could do to really help students get into that world and to encourage them. Set up maybe some structures to help people connect a little more by carrying the anchor groups forward, in a more formal way through the learning plan.
Satisfaction w collaborative activities on a scale of 1-5.	4
What is your preference, to work individually or collaboratively?	I absolutely am a collaborative learner.
When did you begin to understand and trust these collaborative learning methods at Fielding?	It sounded very collaborative to me when I started the program. But after a while I realized...so I've gone through a learning curve, so it's not such a simple answer. I started out thinking, "Oh it's going to be really easy and everybody is going to collaborate." And then my experience of that was that it was not the case. And then I learned I had

	to really take my own initiative and establish collaborative relationships. So I've done two of my KAs I've been collaborative with.
How does your geographical location impact your learning process with Fielding?	It's not as bad as some. You know I live in a less densely populated area so we don't have a large cohort in our cluster. And we're lucky in that I have a faculty member that was in the Portland area. But it makes the national...and I come to every national session...because it's my way to connect and keep engaged.
Which ICTs help to reduce the affect of distance on your PhD program?	digital libraries, phone, email, web cam
What are the current shortcomings of ICT in reducing the affect of distance?	Well, I think it's that you have to you know, to set up the structures. And so however we set those up and however we use those to our advantage you know, then they work for us. And for students who are not as good at doing that I think they struggle.
If you could design an ideal ICT environment to aid your collaborative learning for your PhD, what would it look like?	I thThe first thing I would do, you know if somebody gave me the job here and said, "We want you to increase collaboration, online collaboration". The first thing I would do would be set up a seminar [unintelligible] and I would set it up for people in OPS in the beginning and have them go through regular online work that culminated in a session. You know where they ended up face-to-face. And I would really require a certain level of participation both from the students and from the faculty. And I would hold the faculty accountable for that level of participation. Which you know, there is no accountability. I would say yes, because in my opinion, the ICTs are the vehicle, but people have to be...for me it's always an issue of presence. People have to know how to be present on that because it's still, collaboration is about human connection so you have to do that, using an ICT doesn't satisfy that need for collaboration.
How do you contract (student / faculty) on a knowledge area?	Well, there's a number of ways to do it. But primarily the things that are the same all the time are you will pick a KA that you're wanting to do. And now they're required to do the basic KAs before they go onto advanced KAs. When I came in you really could do any KA... And so you'll decide on the KA you want to do and you look at the faculty. And some students do that purely by doing it online. Other students, like I was a student that always came in and tried to meet the faculty and have a sense of who I wanted to work with. And then you work with that. You put forward your idea for what you want to do and they'll give you some feedback or they may make suggestions, the faculty member. And you come to kind of an agreement between you as a collaborative discussion. And you come to an agreement about, yeah, this is what I'm going to do for the overview, the [unintelligible] and the in-depth. And then you write a contract up. And usually I submit my contracts via email and then they forward the contract as an approved contract into Fielding and it gets recorded as an open contract that you're working on.

Contact Type: Interview
Code: HOD-3S

Site: Fielding Winter session January 2005, Santa Barbara

Question	Information (Summarized)
How does FELIX support learning individually and with others?	FELIX holds a lot of the information that I need in order to, like, when I was doing KAs to find, you know, I'd go the faculty site and find out which faculty assessed in the area that I was interested in, what the background of that faculty member was. It also holds the information as to, like, what the requirements are for

	<p>the KA, for the knowledge area, so it supported me as an individual that way just by providing information, provider of information.</p> <p>I don't have a lot of experience since I've never done any online seminars. So that part didn't include, you know, I didn't experience that part of it. But I did experience, you know, I'm not exactly sure if we used FELIX or not, but like when I did intensives, or group KAs, then we would, I can't remember if we actually used FELIX but we, we must have used FELIX to post our papers.</p> <p>To some extent, I probably did. I mean, it's like FELIX has evolved tremendously in the last three years. So before then, we had very limited capabilities of, you know, it was basically just an information purveyor.</p>
To what extent do you Share literature?	Whenever I would come across an article, whether it was through FELIX or any other kind of electronic source, probably through the library services, you know, I thought, "Gee, this seems to apply to so and so's topic area", I would either send them the link, so I did that to some extent.
To what extent do you Discuss literature you've read?	I don't remember ever doing that outside of writing a paper, or presenting it like in an intensive.
To what extent do you Share data?	Maybe occasionally. Let me just go back and say that those students would have been students that already taken that, finished that KA. Just because they would maybe have a little bit better idea of what was expected on that KA, rather than someone who would be taking it and
Are there specific technology improvements you would like to see in FELIX?	<p>I'm just so far away from technology in my life, that it's really hard to say. I guess I would like to see like a bit of chat rooms; like I work a lot like in Blackboard, more Blackboard; maybe more messaging; things like that. I think, right now all I use FELIX for is for getting information.</p> <p>With Blackboards you can carry on threaded discussions. You also can do live chat, or, you know, synchronistic live chat. I'm trying to think of all the other things that you can do. You can use it for, like, Whiteboard where, you know, if I have a model I wanted to, if I was on live chat and wanted to show a faculty member or someone else, you know, a model that I was working on.</p> <p>an email system through FELIX would be so much easier, than you know, now I have to go in if I know someone their name and I wanted that I have to go into the directory; get their email; go back up to my email system and send them an email.</p>
Have you used technologies to work with colleagues other than FELIX?	Not I teach and I use obviously the Internet mostly, you know, or personal email system since there's not an email system through FELIX.
Familiar with "ICT"?	Well, I wasn't but I understand the concept
Which ICTs do you use in your PhD program?	I use a cell phone. I use broadband (DSL), Internet, library searches, Blackboard, FELIX, digital libraries databases, Fax, mail, etc.
How would you define advances in ICT?	Well, I guess for me, Blackboard would be considered an advance in ICT, Being able to have digitalized books, the ability to communicate live time with people in Fielding, video conferencing capabilities
Does your PhD program involve shared knowledge creation activities?	<p>I would imagine that you are referring to things like intensives or seminars where we get together where we share information, where we have a shared learning experience, so yes.</p> <p>I think the most recent was when I did my systems KA in Bethel, Maine` Where we all got together for four days, I think it was and shared, you know, learning consulting experiences. So that was our, kind of, our group learning. It was very chaotic, there were tones of information. And then we went home and wrote a reflection paper on</p>

	that.
What activities do you do with other PhD students?	I will talk with them about my ideas. If I'm stuck or having problems, [unintelligible] problems to faculty; kind of as a support system. So that's pretty much, I guess, support; friendship; relationship maintenance if you will. Information, you know, like I'm working on this KA, you know, and I know that you read such and such a book, what book was that that you read? Or what, you know, I know you've taken this KA, what are some good, you know, references that you can give me that would be useful?
How does Fielding encourage collaboration?	Not so much previously. Much more currently. So before, like I would say again, three to four years ago we started doing a lot more online seminars. Before we had intensives, but they were rare. I mean, I have one column we started together and every single one of his KAs, he did always an intensive. So it was a group learning experience. But I think now there is a much stronger commitment on FELIX's part, on Fielding's part For collaborative learning. It was mostly the giving of intensives was really the students that would put it together and facilitate it and make it happen. And now I see it much more being the faculty putting it together. Putting together these online seminars and so, Barnett Pearce is doing one on social constructionism [phonetic]. And they've initiated it, as opposed to the students initiating it before.
Do you feel that there is anything in Fielding policy that discourages collaborative learning?	I suppose the lack of funding available for expanding the technology, for providing faculty two groups that want to get together and assess with the faculty, when you have a very limited budget, you know, can't afford to fly someone from Florida to San Francisco, you know, you can do that once a year. So certainly I think the major is the budget, lack of funding.
Satisfaction w collaborative activities on a scale of 1-5.	2
What is your preference, to work individually or collaboratively?	collaboration
When did you begin to understand and trust these collaborative learning methods at Fielding?	It was the first, I think it was actually the first knowledge area that I did which I did with a collaborative intense, what we used to call intensives. I understood the methods during my OPS. I think the whole Fielding, the values that Fielding holds are collaborative, you know, working collaboratively. So I think that the trust was more something that I just assumed that, I mean, I was aware that came with it and I guess trusting probably was after I did my first KA, my first group intensive.
Is there anything you would change or improve about the Fielding collaborative learning environment?	Other than what I have already mentioned, like bigger budgets. well faculty ability would also go along with, you know, the larger the budget the more individual areas would have for funding, you know, and faculty travel
How do collaborative technologies help you in your program?	I have used phone conferencing, teleconferencing, rarely. But pretty much I guess you could be just about anywhere just a long as someone has the conferencing capabilities.
How does your geographical location impact your learning process with Fielding?	I think it has a positive impact. I live in San Francisco. So I have any electronic means of communication available to me. So if I wanted to use com paths [phonetic], I suppose if I wanted to do video conferencing, teleconferencing, all of those facilities are available to me in any city in the Bay area.
Which ICTs help to reduce the affect of distance on your PhD program?	obviously FELIX, Internet, it would be, you know, telephone. Probably those three.
What are the current short-	I think I'd have difficulty answering that, because I have such a limited

comings of ICT in reducing the affect of distance?	imagination. You know, I don't know what the capabilities could be, so you know, I guess, I'm not really, I don't have any information.
If you could design an ideal ICT environment to aid your collaborative learning for your PhD, what would it look like?	I would be able to create documents in the system; it would be all-inclusive. It would an umbrella system where I could create the documents; I could share the documents; I could send email, edit it with someone live, everything would be in one platform. So I don't have to keep going, you know, in and out of the Internet, you known, opening, you know, the Internet again. And, You know, have something like AOL Instant Messenger, have that capability, you know, so if someone saw that I was online and just say, "Hi, how you doing, I just [unintelligible] on this, you know what do you think about this?". Be able to use voice and video capabilities, if that that was necessary. So I could easily do an intensive with someone in, let me see I think we've got someone now from Norway. You know, where he could participate or I could participate in an intensive in Europe, since we're expanding there.

Contact Type: Interview
Code: HOD-4S

Site: Fielding Winter session January 2005, Santa Barbara

Question	Information (Summarized)
How does FELIX support learning individually and with others?	FELIX is a wonderful; it's a very rich format. I actually went to the University of Phoenix so I have a comparison. I did my Masters and about a year and a half of their doctoral program and what I found getting into the FELIX format is that they have actually created a community. And several sub communities and so there is a lot of wonderful dialoging that goes on and there's a lot of places to get information that I hadn't seen when I compare to the other schools.
To what extent do you Share literature?	On a regular basis. I think we all have access at different points to different literature. I will say I am still using UOP's library [unintelligible] a lot, because I find it easier to navigate than FELIX, as far as the web or the actual library.
To what extent do you Discuss literature you've read?	on a regular basis. I would say weekly. You know, and it depends if I'm on an online format, it's even more than that. I actually, you know, have friends that are getting PhDs not only here but at other schools, and it's a very nice community of scholars that discuss on a regular basis.
To what extent do you Share data?	I do share information, you know, as I see people needing something, you know, I always offer and people do the same. It's a very collaborative atmosphere. You know, a lot of the data I collect now is very simple, I mean, I'm not at that process yet. But if, you know, I find data that I think would be helpful for someone, especially when writing those online forms
To what extent do you Review each other's work?	A lot of the professors of faculty [unintelligible] wants, you know, us to post our written work and we do that on a regular basis, so we all have access to that. And I think that's a good way to really see some comparisons and get pointers on things, and it's nice because then we have several critiques at once going on in your literature.
Are there specific technology improvements you would like to see in FELIX?	the one thing I would like to see different is the library and a little bit of, I'm used to a very user-friendly library format at UOP. It is not as user-friendly within the web of FELIX.
Have you used technologies to	Besides de U. of Phoenix, I was looking at Ducane before I went in and

work with colleagues other than FELIX?	I think what I am finding is that many of them, sort of merit either that Outlook format or the type of format that we have on FELIX. I've used a few, I've gone into a few seminars that have been online and they really neared more of the FELIX format.
Familiar with "ICT"?	yes
Which ICTs do you use in your PhD program?	I want to say that I probably use quite a few, I mean; I use Internet networking on regular basis. I do use some access grids, but probably logging straight onto the Internet is a common practice for me. I use, as far as services, I mean I've given training as far as online format and have done training on online format, and would like to do more. I use all kinds of soft wares and digital libraries. I've done a lot of investigation into Internet storage, and used a bit of it, hard drive, back up, all of that. I'm totally into laptops and know more into, you know, how to having a regular [unintelligible] PC at home, so I'm always looking for ways to store data. I also use a TPA that adds storage [unintelligible] and all those kinds of things so.
How would you define advances in ICT?	I think that they are coming quickly and abundantly, there is just continual change that's happening from probably the time that I really got involved in that type of technology. I actually, almost have a math degree, and so I've [unintelligible] computer circuit design when it first started back in the early eighties, and I can remember [unintelligible] circuits it started with. And so for me to come from that point to here, I just think now every month there is something as opposed to where it was every year to every six months, just continual changes
Does your PhD program involve shared knowledge creation activities?	we're encouraged there are times where we work as teams that we always have the option to do those things. So you can develop a collaborative learning [unintelligible], if you want to do that.
What activities do you do with other PhD students?	I actually work with some people in my professional life that are also PhD students at Fielding and so that enriched that further, because we see each other, so we not only have the access of the Internet, but we actually have a lot of face to face time to do those collaboratives. I have a team mate that I have had since I was at the University of Phoenix and so what we do is on a regular basis share each other's work, you know, and discuss it, how we came to those ideas in an effort to make it better. And probably most recently which it would have happened today, I had a portfolio review and in the process, one of the faculty told me about another student who is on a parallel track and so I did meet her, it was [unintelligible] a few days ago and actually then ran into her after this review and had a chance to have a verbal interaction with her to plan to do further, be that online or in person. Does that answer the question?
How does Fielding encourage collaboration?	I think Fielding encourages networking and collaboration at least from my perspective on a regular basis. That's something that I really enjoyed or have enjoyed about Fielding, I've had several faculties that have encouraged me to call other faculties to, you know, to call other people in other disciplines in other schools and find out what's out there. And I have had a great time networking around this world with people in just a short time and found that within the PhD community, if people find out that you're a student and that you are developing something or just need information, the community appears to me to be very collaborative and open to helping.
Do you feel that there is	: Not that I am aware of. I think it's all of the ideas that we need to be

anything in Fielding policy that discourages collaborative learning?	cognizant of the fact that when we do that, we are going into somebody else's world and, you know, they are kind enough to share their passion and their work and you know it's our obligation to be respectful of the fact that it is their work.
Satisfaction w collaborative activities on a scale of 1-5.	Five
When did you begin to understand and trust these collaborative learning methods at Fielding?	Well I came from an environment, going back to University of Phoenix all throughout my Master's program, University of Phoenix was built on a team environment and promotes that excessively to a point that I think that at times is infective because I believe that having worked with a researcher who builds, whose done a lot of work on team building, but it takes time to do that. So, I find this atmosphere to be much friendlier as far as being able to, because it's not forced. You are able to, kind of, pick and choose who you wish to be with and when you wish to do that and I think that's an important part of being an effective collaborator. I think the seminars are wonderful and most of the collaboration I have done with students per say at Fielding has been on the online environment. They're actually little forums that are built for us as compared to the major forums that everybody can access. And it's very nice, because within even that sub platforms are then further sub platforms so that you can divide into smaller groups within those larger groups to have those kinds of interactions as well as over lapping into other groups as well as pulling aside and having side conversations, you know, in another kind of folder forum.
Is there anything you would change or improve about the Fielding collaborative learning environment?	I'm enjoying it. I can't think of anything at this point.
How do collaborative technologies help you in your program?	For me, it's the networking and you know, one idea leads to the next. And the more I learn the more I collaborate with people, it's amazing, you know what kind of ideas can come out. I'm familiar with using; I want to say a video cams and having interactive information going at once, and those kinds of things, For collaboration for not only in a school environment, for a professional environment multiple times and conferencing and as far as just seminars, all those kinds of things.
How does your geographical location impact your learning process with Fielding?	Well I have moved across country since I've been in the program and I've been fortunate because in both areas there have been clusters close to me. So, it impacted me in a positive way, I'm with the Hartland cluster and we meet as a regular group and now I'm going to be one of the cluster connects for that group. So I have a lot of activity with people in person and then I am highly into technology so I am online constantly whether I'm at work or at home and I love that type of format because I'm so used to it and I find that it gives me a lot of interaction with people on a regular basis. Clusters usually meet on, it's either monthly or, you know, bi-monthly basis and we meet for a few hours during a Saturday if not longer. And what happens we come together either to do learning, to have, sort of, de-briefings about where we are and what we want to do in the future and then any kind of commentaries or questions that people want to have. So it's a face to face support group, which is really nice. With people in all, I want to say levels or places in the process of getting a dissertation.
Which ICTs help to reduce the	Having the FELIX forum definitely. Having access to Internet libraries

<p>affect of distance on your PhD program?</p>	<p>and definitely email. For me that is the fastest way to find people in a way that makes it convenient for them as well so that you actually get to have conversation..</p> <p>there are times where we work as teams that we always have the option to do those things. So you can develop a collaborative learning [unintelligible], if you want to do that.</p>
<p>What are the current short-comings of ICT in reducing the affect of distance?</p>	<p>I think it's the unknowns of possibly, I want to say not hearing from faculty on regular basis. That could be improved, but I think some of that comes from the fact that some of the faculty is more familiar or keeps contact or, you know, has become stretched for different reasons. So that would probably depending on the specifics could be improved as far as the online seminars that they actually give. I think they keep in contact very well, the ones that I have experienced.</p>
<p>If you could design an ideal ICT environment to aid your collaborative learning for your PhD, what would it look like?</p>	<p>it would probably include a place where you could actually do a web cam environment at some point, you know. And that would be your choice, but that you could enter that forum and have a conversation that was synchronistic, you know. As much as it can be on a web cam.</p> <p>And the other piece would be more policing of that things will be in a timely manner and there will be, there's a required interaction between faculty and student on a regular basis online.</p> <p>Again to promote that online environment, but I don't think that <u>Fielding has moved there.</u></p>
<p>How do you contract (student / faculty) on a knowledge area?</p>	<p>what we have access to is very nice, it's a tool that actually lays out all the curriculum on what we call the lever [phonetic]. And so it's very nice, because you see actually what the professors really are looking for when you contract.</p> <p>And then you can also have separate discussions with somebody you want to have as your assessor in faculty assessor to really determine what should be in that contract.</p> <p>We have three parts to the contracts, what we call an overview, where we do again an overview of whatever it is your area of interest that you're looking at.</p> <p>And then you do what we call an applied, where possibly you take a piece of what you're interested in and apply it to a professional or, you know, anyway you'd like to do that in what I want to say, as being in a more realistic type of environment.</p> <p>And the in depth part is it will take a piece of theory or something you have a deep interest, passion of within that grouping and go ahead and write about that.</p>

Contact Type: Interview
Code: HOD-5S

Site: Fielding Winter session January 2005, Santa Barbara

Question	Information (Summarized)
<p>How does FELIX support learning individually and with others?</p>	<p>if you've got special interests there's places where you can just kind of target into that. I think it supports learning in terms of just communicating generally to the entire school population, what's going on. People share information; they share websites that they've found. Sometimes it supports learning by people have little disagreements on Fielding and people you know express themselves and somebody else says, hey, hey, hey, you know. So it's kind of interesting to sometimes just follow those things.</p>
<p>To what extent do you Share literature?</p>	<p>I've given two online seminars. And both of those involved reading literature, writing different forms of things to post and commenting on each others writing or postings or meanderings or whatever they were that we did. So those are two huge ways that come kind of off the top</p>

	of my head about how I've done that.
Are there specific technology improvements you would like to see in FELIX?	Access. Broader access. My dissertation is in the international business and international cultural communications, and there is really not a lot of access to that information through our databases, which means, you know, you're cajoling somebody else or slucking [phonetic] your own body over to the physical library, somewhere close by, and that's been problematic. I mean FELIX as far as a database has improved huge in the five years. I mean it's so much easier to operate and there's a lot more access. It's just not the kind of stuff that I'd use. I mean a lot of the things that I need are there but in an electronically networked school, you need to, and especially one where people are really encouraged to study inter-disciplinary and to study what they're interested in, you really need even broader access. people using FELIX for their own personal propaganda of their own businesses and that's been a huge current issue on FELIX. Where people are, you know, my business is offering this and my business is offering that. I actually had to get an associate Dean to intervene at one point in time to get a certain person to stop bombarding my inbox with personal promotions.
Have you used technologies to work with colleagues other than FELIX?	Yes, I do a lot of work with my own business clients. I'm consulting clients by email. Partially because we are geographically all over the world, and I also am an online instructor at the University of Delaware and teach a couple of classes in the Continuing Education Department online using WebCT. I've only ever used one function in the whole thing. I post all my assignments in there. We post our responses in there. I post my responses back. I just don't, I just find it really and most of my students are not, they're not students, I mean they're students but they're grown adult professional people. So for them to make themselves crazy trying to learn the system and they do not provide any instruction for continuing education students on how to use WebCT. So that's the problem. [Laughter].
Familiar with "ICT"?	No
Which ICTs do you use in your PhD program?	Books, obviously journals, WebCT, FELIX, Meetings, mail, cluster meetings, Broadband, EndNote
How would you define advances in ICT?	I mean I'm on the Internet a lot, and when I can't find out any information, like, through my databases, I just go to Google. I Google all the time. And I do...I mean I just did my education into just like how I live. I live using Google. I do. I don't even get out the telephone book anymore. It's like right here. I just go into Google. Direction maps, shopping. I want to find out the history of somebody or you know obscure things like, you know, a song line but I don't remember like who wrote this song. I use Google a lot and even in my dissertation work there were a couple of things that some of the people I interviewed said, and I was like, you know what, I'm going to find out where it comes from and so I use it that way as well.
Does your PhD program involve shared knowledge creation activities?	I've done some intensives, and I think this fabulous Fielding women study group...we do things together. I mean sometimes we'll read our research paper and get feedback on it. Or we'll say, you know, I'm stuck up trying to do this. And somebody will give you some ideas. I belong to one of the clusters as well, one of the regional clusters. And so we always have at least in the morning there's good solid, of the shared knowledge creation type of activity, whether it's learning together or somebody's kind of leading an educational seminar or something like that. I'm here, you know, at the session the national sessions, I mean there's always...I can't think of one I've ever gone to

	<p>where some faculty member stood and talked for three hours. You're always doing something. You're always sharing some part of yourself and you're learning with others. And then also getting back from them. So one-on-one conversations with faculty members the same way. Much more of a shared knowledge kind of an equal footing kind of.</p>
How does Fielding encourage collaboration?	<p>Well they fund the regional clusters, which is nice. Otherwise you know it costs money. [Laughter] So I think that's one of the ways that they support shared knowledge. We pay an outrageous amount in tuition but we do have relatively speaking we have access to a lot of databases through FELIX. I've never had anyone who requested a form to be filled out that that wasn't just like done for them. The times when I've had problems accessing FELIX, or some of the databases, somebody's always there to help me. So I mean I think there's more for them to do but I think that they do a pretty good job of keeping the right people in the right places.</p>
Do you feel that there is anything in Fielding policy that discourages collaborative learning?	<p>Only to the extent that I think that OPS which is the orientation that everybody goes through. I think they could do a better job of providing people with a clearer picture of what the experience is really like. And inserting more structure into that process initially. Because you're really kind of, you know the thing that is great about Fielding is you really are free to study within acceptable doctoral skill level, to study what you want to but that freedom comes at a cost in terms of it's not very well, it's not very well supported in the beginning. And sometimes it takes a long time to get your thing together before you, you know you come in here, you've never, you don't have a PhD coming in. You don't know what that means.</p> <p>I think they could do more collaborative learning experiences. There's a lot of emphasis on the softer kind of kumbaiyah side of things. You know let's hug a tree and hug each other. I think all that stuff is really important. I mean I work in OD. I recognize the value of it. And I like the human aspect of people. You know, I love myself. But providing more things like working together to write your learning plan. Working together to write a couple of practice KA assessment contracts. Hoping people figure out how to develop, because you have to submit test-tube bibliography with a KA assessment contract. Those are a couple of things that I've shared, somebody else had contacted me at the OPS a couple of years ago about restructuring, so those were a couple of things that I shared with them. I think just provide more structure and I guess the other thing is not really technology oriented, but I think if somebody agrees to be your mentor, you have to choose somebody at OPS, only somebody temporarily for six months, then they have an obligation. I think they should be obliged to call you once a month and see what it is you're doing. And how you're doing. And they really don't have any requirement like that. So...or maybe they have the requirement, but no intention [unintelligible].</p>
Satisfaction w collaborative activities on a scale of 1-5.	<p>Three, There's not always something going on that's of interest to me. Sometimes things are not as available to me I guess as I would want them to be. Whether it's because of time or distance or money or some things like that.</p>
What is your preference, to work individually or collaboratively?	<p>I've always been more of a collaborative studier, you know. I mean not that I didn't want my own grade on group projects, but . I like my As you know. And I know that I can earn them. I don't mind sharing [unintelligible] but you know I'm going to do the A work and everybody else us going to get it all the time. So I love working in groups and teams and I mean I just really enjoy that process, that sharing, but I've spent most of my Fielding journey studying</p>

	individually
When did you begin to understand and trust these collaborative learning methods at Fielding?	I'm not really certain that I trust them. I mean not that I don't trust that the structure is there. But in terms of like, me trusting them. No. I trust that they exist. And I know that I've been in some. But I won't say that I...I tend not to experience that I think...I've not...it has not delivered what I expected. That I don't trust them generally. It's probably why I do most of my work on my own.
Is there anything you would change or improve about the Fielding collaborative learning environment?	I think they're doing, that it looks to me from where I'm sitting, that they're trying to provide more online seminars. And I think that that is a really good thing because if they can provide enough that are kind of entry level, then more students earlier in their Fielding career can get on board those things and really kind of get into a knowing [phonetic] where a collaborative learning situation but get to know other students. If you don't come to sessions, you don't get to know people. And online for some people it's really difficult to get to know people online well. They want a face. They want to have a shake of your hand or have lunch with you or something. So I'd like to see more of that happening. I don't really know what else.
How do collaborative technologies help you in your program?	I've used (technologies) to the extent that they've been available or beneficial to me. You know whether it was the online seminars or I do all email communications with my committee. And authors whose work I'm reading, I have another question, I'll just set up an email. I don't even really use the phone too much anymore. But I'm, it might be more personal to us. I'm definitely only as much toy as I need kind of person. So I don't have a cell phone. Somebody is actually hooking up my DVD player that somebody else gave me because I would never have bought one. [Laughter]. Oh I watch like two hours of television a week. You know. I mean on a computer for my school work, my consulting work and I'm all over the computer. I only take as much toy as I need.
How does your geographical location impact your learning process with Fielding?	I live in Delaware. [Laughter]. It's that little tiny State on the east coast. So I originally was traveling with a Philadelphia cluster when I first started. And that cluster really sucked. [Laughter]. I mean it was disorganized and everybody got together and said, "What shall we do?" I'm here. Let's do something. I don't have anything planned so I didn't do any clusters for about two years. I was just like, you know, this thing is stupid, it's a waste of my time, blah, blah, blah. And somebody said, "Why don't you come down and check the [unintelligible] cluster?" And that's a little bit further from here. It's about an hour and a half drive. But there's always structured learning, a structured program, there's a lot of people. You know, 20, 30 sometimes 40 people. It's great. And of course the faculty is [unintelligible] he's delightful. So that's really, that's where...I don't think that they should have it in Delaware, [unintelligible] that would be ridiculous. But there's not a lot of people from my area, from geographically from my area. Because even at the [unintelligible] cluster some people drive like two or three hours more, from Virginia to go there. So.
If you could design an ideal ICT environment to aid your collaborative learning for your PhD, what would it look like?	I guess it just kind of goes back to those early years and providing more online structure, not mandatory, but available structure to new students. Whether that is saying okay this is for all new students here is the seminar we're going to start with and everyone is welcome. And I don't care what it's about. You know I mean there's a couple of mandatory courses. There's some fundamental things. So even if it's something like that just to get people working in that environment. You know everything's optional.

Contact Type: Interview
Code: HOD-6S

Site: Fielding Winter session January 2005, Santa Barbara

1. What were the main issues or themes that struck you in this contact?
the first interview that just said, "Geography doesn't affect me", I just don't see geography as a boundary. As a consultant I'm just so used to traveling all the time

Question	Information (Summarized)
How does FELIX support learning individually and with others?	on an individual level it connects me with resources that I can use to drive and enhance my own learning. So it could be the library services, it might be information that other students have posted on the forum, like the discussion areas. It also enables me to learn and understand and read about what it takes to move through this process. From a collaborative level, you know the little micro scale, it enables me to post a question out there and ask some people to comment, or to comment on other people's questions. That I haven't done a lot but I have participated in one of the online sessions.
To what extent do you Share literature?	to a pretty great extent. I sometimes email, email little snippets of literature that I've read to others who I think might be interested in a similar topic. Sometimes I just email a citation, you know the reference. MR. I've done that in the work teams area where I've been with other people working on similar KAs and interests. And I did it in the online format where we of course discussed literature a lot.
To what extent do you Share data?	No, not yet.
To what extent do you Review each other's work?	. I've used online capabilities to provide the information. And have also had people provide information to me, their work to me. But the actual review I did on paper and I [unintelligible] back on paper
Are there specific technology improvements you would like to see in FELIX?	I don't even know if I can get real clear on this but the new library services, the new entrance [unintelligible] to get to those databases and the way in which you do that, I think it's more difficult to use than the way it was before. I found it a little cumbersome initially in just finding my way to what was there. One of the things I remember I had a very hard time finding two things were with the rostrum participants and oh, how to find events and cluster meetings and those kinds of things. So I don't really know if it's a matter of technology enhancement or just me getting comfortable with it. It's just a little flaw in the layout.
Have you used technologies to work with colleagues other than FELIX?	The phone. I think maybe under the domain of consulting services my colleagues and I, I think offer each other a lot of sort of personal coaching.
Familiar with "ICT"?	No
Which ICTs do you use in your PhD program?	The phone, the fax, the Internet, cellular technology is just [phonetic] the telephone, the cell phone. If I work at a workstation at work? A workstation may have storage, a digital library, software, wireless networking and that's it
How would you define advances in ICT?	that they happen so quickly and with such sort of rapid jumps in capability and user benefit that I don't feel very technologically competent. And then to add to that they usually have no [unintelligible] in what they are that makes it difficult for me to figure out what they are
Does your PhD program involve shared knowledge creation activities?	I feel like when I did the online 703, 702 or whatever and the way that that was formatted and set up that the mechanism, the structure, the techno, you know, all of it was there to support the sharing of knowledge and the creation of new knowledge. You know there's

	somebody would put a thought out there, somebody else would provide a question or a comment or a contrary point of view and several people would be involved in an online dialogue that's sort of flushed out of shared understanding or perception or hypothesis about what was happening and why it was happening.
What activities do you do with other PhD students?	Chat back and forth view email and phone; chat back and forth on FELIX; get on the phone and work our way through FELIX together, "I'm trying to find this, do you know how to find it?" and you know like, one of my colleagues [unintelligible] "We'll work our way through there together." Just discuss and chat about our studies and our you know, our personal things in forums like this
How does Fielding encourage collaboration?	I think Fielding encourages collaboration, I think it really touches everything that they do. I can't say that I've even been at a Fielding event from prior to my entrance until this point in time where I didn't feel I was in a collaborative environment. So it's either forums, whether they're in person or online, where you have the opportunity to share knowledge, information, ask questions. I think it's the structure and the set up of the sessions. I think it's the just now getting an understanding of the you know concept, development and dissertation process. I think it's built into those processes, it's built into the assessment process, you know, the review process of your work. I think it's just embedded in all of the organization, university.
Do you feel that there is anything in Fielding policy that discourages collaborative learning?	no
Satisfaction w collaborative activities on a scale of 1-5.	4, I almost gave it a five. I think I gave it a four because I think that I personally haven't utilized the resources available to me to the extent that I might.
What is your preference, to work individually or collaboratively?	a combination I think. My preference is to learn and digest a little bit individually first so that I feel equipped, engaged to really confidently put my thoughts together before I go out for the collaborative piece.
When did you begin to understand and trust these collaborative learning methods at Fielding?	I would say OPS
Is there anything you would change or improve about the Fielding collaborative learning environment?	I think accessibility to faculty during big sessions like this; it seems that there are so many people here, so desirous of faculty attention that it's really hard to get. So it would be nice to have a scheduling system Where you could go put your name on a calendar
How do collaborative technologies help you in your program?	they enabled me to connect to human knowledge sources, whether they're students or faculty to, what would you call, technical knowledge sources, or literature knowledge sources, you know non-human sources of information. I think things like the databases whether they're my own or whether they're Fielding's, enable me to gain quick access to, you know, pinpointed information. And I think they enable me to work efficiently and productively.
How does your geographical location impact your learning process with Fielding?	I don't think it impacts it at all. I haven't been yet engaged in geographically configured cluster meetings but it has nothing to do with the geography. It's just my schedule
Which ICTs help to reduce the affect of distance on your PhD program?	Doesn't feel distance affect program
What are the current short-comings of ICT in reducing the	N/A

affect of distance?	
If you could design an ideal ICT environment to aid your collaborative learning for your PhD, what would it look like?	<p>It would be E1 where you could do face to face, like via video. Well I think there's a lot that we do via email back and forth whether it's colleague to colleague or student to faculty and you lose the richness of the two-way exchange.</p> <p>you lose everything that goes along with it, the mannerisms etc. I think that would be valuable. I think it would be valuable for connecting with faculty that you know, perhaps you had a two-minutes pass in the hall with and you decide that you're going to connect with each other again via email and phone to just enable you to get that personal contact even if you are far away. I've only heard sort of talk about the different faculty and how they prefer your paper and whether they want it in hard copy or e copy and you know what you do to send it back and forth. I don't know if it would be easier or not, it would save trees I guess, is people know how to use the editorial or review tools so they could insert their questions at the appropriate place. I don't know if that would make things easier or not. But you know you hear stories that people, I don't know, there's a lot of angst about paper copy going back and forth in the mail.</p>

Contact Type: Interview

Site: Fielding Winter session January 2005, Santa Barbara

Code: HOD-7S

1. What were the main issues or themes that struck you in this contact?

A lot of information that's picked up verbally when you're close to somebody versus using the technology.

Question	Information (Summarized)
How does FELIX support learning individually and with others?	<p>individually obviously there are research databases that I have used extensively to and for my dissertation question to find, you know, references and resources so that's been a great source of learning.</p> <p>In terms of, if I understand your question, also collaboratively, I've used it on several occasions with other students, either in a dyad (Two people) or larger groups to focus on a KA, that's lead by a faculty or sponsored by a faculty and we use it to post information; papers; paragraphs; thoughts, even to capture dialogue about the topic that we are focusing on at the moment.</p> <p>So it's been a place that I can go to read something. I can reflect and respond back and it's a record of thought process through a knowledge area.</p>
To what extent do you Share literature?	<p>Completely open. If somebody wants certain references or literature sources, we just give it to them and send them emails full of bibliographies or online we'll post information about something we know about. And it's pretty open processes.</p>
To what extent do you Discuss literature you've read?	<p>Usually in a context of a KA, that's what we do. We discuss literature.</p>
To what extent do you Share data?	<p>: Well I don't share my dissertation data on FELIX; it's housed in other software programs that are closer to me and not inside FELIX. But I guess maybe the only data that I can think of that we shared, that we created together was when we did a little mini research activity, a research session: they sent us out for a day to collect any kind of data we wanted to. So there was three of us that went into a restaurant and we made observations around the activities in a restaurant and we wrote those up and brought them back to use that data for simulating a research exercise. We posted some of the results on FELIX and then discussed it.</p>
To what extent do you Review	<p>that's part of the process usually that's constructed by the group or it's</p>

each other's work?	sometimes guidance by the faculty to read something; critique it; post it and then other students will respond to your critique or your posting. And you're expected to do the same with others.
Are there specific technology improvements you would like to see in FELIX?	I don't know if this is technology or what, but the libraries that are available are not, I would say they're not complete. So if you go to other real libraries, you know, physical libraries, you find other resources that you can't find on FELIX and maybe that's just part of the process that you have to search around a lot. One of things I find is that they, every one to two years they seem to upgrade FELIX and the look and feel changes. So, it takes a little bit of time to get adjusted to that and then it will change again, so it's a little bit too dynamic for me. And it also, they've done that same thing with the referencing, the searching capability. So you get used to doing something a certain way and you can do it very quickly, but then when they change it, it has become more confusing and taken longer.
Have you used technologies to work with colleagues other than FELIX?	Yes. I've used a simulation tool called itthink with another student and we did some work together on one of the KAs using that particular tool. Outside of FELIX, obviously we use email and we share Word documents, Excel files, whatever. And things like indivo [phonetic] you can't really share very easily but you can share the documents that go into it.
Familiar with "ICT"?	I'm not familiar with that term
Which ICTs do you use in your PhD program?	Well I use telephone and fax. And I use, let's see, cellular technologies [unintelligible] phone, I use the phone. I've used email. I've used snail mail. I've had meetings. Used digital libraries, books and paper based books and journals.
How would you define advances in ICT?	Well I think the pure communication stuff about the information piece moving towards, I'm very familiar with using video conferencing, for example, around the world and I think I'm not sure why we don't use that here. It seems like it's ubiquitous and it's not that costly anymore, so why don't we bring people face to face together more often for meetings? Or use existing infrastructure to go to use those. In terms of information, we are, I don't think we take advantage of creating databases that would store useful information for students. Everything is pretty much done on individual basis and it stays there, very little of it is actually shared or posted for other people to look at or gain knowledge from. So there is a lot of great work that happens and it's completely invisible to most students. And I don't know how, I don't know what's behind my access on FELIX if there's a, I'm sure there's a whole faculty access that I don't see and maybe there's more capability there that I'm not aware of, but maybe there's certain bridges that need to be made between those two that would be useful to both faculty and student.
Does your PhD program involve shared knowledge creation activities?	I think just working with other individuals on that knowledge area; creating documents that you [unintelligible] the overview in the depth and the applied portions of that knowledge area. We mostly get to work on the overview part so that's creating knowledge about a certain topic. Occasionally you get to work with somebody or collaborate on an in-depth portion or sometimes even an applied and so to me that's creating knowledge.
What activities do you do with other PhD students?	In some cases there's weekly phone calls to collaborate and to keep track of someone's progress, to provide a support system for them or me. There's –

	That also happens at national session where we find out where people are at and often, I remember more in the beginning than now, that I would pick up tips with faculty work with certain references that are good, certain approaches that we could consider, certain seminars we should take.
How does Fielding encourage collaboration?	I think it goes deep to the roots of how Fielding operates. I think the adult learning model that Fielding uses encourages collaboration and it doesn't encourage hierarchy, so you know, just kind of.
Do you feel that there is anything in Fielding policy that discourages collaborative learning?	Not discourages it, but has barriers to it. Obviously distance and time zone is one. The periodic nature of national sessions and without regional sessions or even some cases there are not cluster meetings and those are barriers to bringing people together and creating more collaboration. But I think that the tools that we do have help to support it.
Satisfaction w collaborative activities on a scale of 1-5.	I would give a four to probably. Collaborating with students at national session is probably a five in faculty. Utilizing the cluster meetings, I think that's a five
What is your preference, to work individually or collaboratively?	I think pretty much everything that I did with KAs was collaborative with somebody. Even with a student or faculty. My dissertation work now is less collaborative with students, but more collaborative with external experts, so internal faculty and external experts in the field sort of shifted
When did you begin to understand and trust these collaborative learning methods at Fielding?	I think it started right from the OPS (orientation program) session, when we started to pair up as students and figure out how we were going to get started. So I remember in the beginning meeting somebody that was interested in working together on something and that's how it started right from the beginning. But it was only one other person and then as we went along, I found more opportunities for groups, to get involved in groups.
Is there anything you would change or improve about the Fielding collaborative learning environment?	I think for some students, not particularly me, but what I've heard is some students have a hard time getting started and I would say require that from the beginning. So start people off on a collaborative model, get some groups together; pair people up, I don't know, by region or whatever and just get them started that way. And then they could choose whether they wanted to continue that way or not. Well, we often like to bring faculty to the cluster to do certain topics, start an intensive on something or a KA. But you're limited by the cost of flying someone out there and paying their expenses or hotel, everything so, if we could, you know, hook up to satellite link with Charlie on the East Coast and we're on the West Coast by video conference and do part of the program like that, that would save a huge amount of cost and the burden of travel obviously. That's sometimes hard to do in time.
How does your geographical location impact your learning process with Fielding?	The only thing that impacts me is the access, the face to face access to faculty. So I'm lucky in the Bay area because there is three faculties there that I can get close to if I need to. But obviously everybody else is accessible by phone or email.
Which ICT's help to reduce the affect of distance on your PhD program?	I think they all do, but probably some more than others. Some are more useful, but I think [unintelligible] in every way, they all play their part. In my own experience, the two more useful have been the phone; and FELIX.
What are the current short-comings of ICT in reducing the affect of distance?	I think there is a minor reliability issue. Sometimes things don't work, you know, they go down or something. That's not very often.

<p>If you could design an ideal ICT environment to aid your collaborative learning for your PhD, what would it look like?</p>	<p>There is a couple of times when we wanted to set up an audio conference and we had to contact Deborah to set up a phone exchange and then we had to dial in and all that stuff. Why can't the student set that up through FELIX, or some other thing that hangs on to FELIX? And the part of the students in the faculty to do that rather than [unintelligible] extra administrative stuff. why not take that further to video conference or additional data bases that people can store their work or share their work, share their articles and that kind of thing.</p>
<p>How do you contract (student / faculty) on a knowledge area?</p>	<p>the larger group activities that I've done usually have formed at a national session, where we were thinking about doing something together and then we searched for a faculty that was willing to work with us and then that conversation, I can remember a couple of times sitting out in the lobby with the group in the faculty constructing a contract concept.</p> <p>Not the written document, but the how are we going to do this? What readings are we going to do? How are we going to share information? What are the milestones?</p> <p>So once it was verbally described and that's also happened on the phone call, not so much over email. But usually some kind of a conversation that leads to a written document and those written documents, although they are supposed to be individual, even within the group they have a lot of overlap, so usually the in depth and applied portion can be unique, but the overview is the same.</p> <p>That's usually how I've done the larger group ones like five or six people. And the smaller group activities like two or three people, that's usually been a collaboration with the students first to figure out what we want to do and a proposal to a faculty.</p> <p>So we write up a document and we send it to the faculty saying, "Are you willing to work with us on these references using this format?" and that sort of thing.</p>

Contact Type: Interview
Code: HOD-8S

Site: Fielding Winter session January 2005, Santa Barbara

Question	Information (Summarized)
<p>How does FELIX support learning individually and with others?</p>	<p>is a tool for communication and interaction I use it to remain aware of what's going on. I use the library as really my only library. I guess I use email then for communication directly to other people, and sending them information</p>
<p>To what extent do you Share literature?</p>	<p>I do it with people who are in my local cluster group, and so we meet monthly. And I'm a student leader on several committees, so for those students there's sharing of all our work back and forth, so that's pretty heavily. Other students who are doing similar work to mine, I keep in touch with. Three of us, one alum, a faculty member, and two students, current students, did a workshop yesterday. So we sent our work, including the library information or the resources, to each other.</p>
<p>To what extent do you Discuss literature you've read?</p>	<p>The networking is fabulous. I mean, learning from other people; picking up ideas, references, and literature methods; job opportunities; information.</p>
<p>To what extent do you Share data?</p>	<p>Yes and no. No only in the sense that everything has just changed in the access, and it's another new learning curve. But once I'm comfortable with the technology, I'd like it to stay constant. On the other hand, I like all the new capabilities that it gives you, so I guess I'm willing to put up with the learning curve to have that.</p>

	the headers, the main links on the summit and on the HOD program pages, I can never figure out how to get to those key procedures and requirements of Fielding. It's difficult to search for what I'm looking for, when I know that there are things I've seen before, and I haven't bookmarked it. If I use the search window that tells you to put something in, you just get a raft of titles and links to things that sometimes are totally irrelevant. I can't find what I'm really looking for in what pops up.
Have you used technologies to work with colleagues other than FELIX?	Yes. Tremendously, email, Telephone. I haven't done anything videoconferences. Oh, and I have used the conference call capability that Fielding has that faculty has initiated. But there's a procedure for calling into a number, and that's very effective.
Familiar with "ICT"?	I'm still back in the IT days
Which ICTs do you use in your PhD program?	Internet, memory sticks, CDs, fax
Does your PhD program involve shared knowledge creation activities?	Well my research is about finding meaning and new purpose, so in that respect helping me understand something I didn't understand, writing back and forth for clarification. I do that more with faculty and my student reader, who's on my committee
What activities do you do with other PhD students?	Cluster groups, coaching, helping people figure out... using my experiences to share with other people to help them understand Fielding processes and help them move along in their work in areas that I feel experienced at, and vice versa. That was how I started learning. Also being a student reader on other students' committees.
How does Fielding encourage collaboration?	Bringing us together at the national sessions and the research and practice sessions, through the cluster groups, and through the Fielding forums; and giving us that opportunity to feel free to jump in whenever we want to. knowledge area assessments is also another way to do that
Do you feel that there is anything in Fielding policy that discourages collaborative learning?	Only at the highest level of, I think, not...if I wanted to do a joint dissertation with somebody, and I had good reason to, I think I could. But otherwise, at the dissertation level, doing a joint one doesn't feel encouraged. Well, I think based on the philosophy. I'm not sure if that's Fielding. A lot of it's based on the philosophy that your PhD has to be original work. So how do you share original...how do you each find your own piece of it?
Satisfaction w collaborative activities on a scale of 1-5.	5
What is your preference, to work individually or collaboratively?	There are benefits to both, having in group KAs and doing individual KAs. So having the give and take of other people in a group is very helpful. Yet having to feel like it holds you back in a time sense, that it seems to take longer, even though there's the pressure of deadlines. It's not always relevant to my own work, so in that respect I prefer the individual. But then, the ability to bounce back and forth ideas, I miss when I do it individually. But doing it online, having that interaction, I find works well.
When did you begin to understand and trust these collaborative learning methods at Fielding?	Right away
Is there anything you would change or improve about the Fielding collaborative learning environment?	I'm sure there are ways to improve it, but I don't know the...I don't have any specific insights as to what that would be; or specific, feel something, that there's something wrong that I would want to change.
How does your geographical	Having lived with the process for four years, I was asked the question,

location impact your learning process with Fielding?	since I'm doing my research in Israel, and I lived in Detroit, an Israeli said to me: "Well, how can we collaborate? How will we be able to share the information? And I said: "I'm very comfortable doing that, because that's my whole way of life at Fielding, is by sending other people something to critique and getting their answers back and integrating them." So I think it has made me, overall, a stronger researcher and practitioner, because I can communicate, you know, writing things out succinctly and clearly, and being able to then communicate that to somebody else in a way that they can understand it. So it's helped me focus. I think there's the benefits to it.
Which ICTs help to reduce the affect of distance on your PhD program?	So FELIX, the Internet, email, and telephone.
What are the current shortcomings of ICT in reducing the affect of distance?	Vaguely in the back of my mind is the cost. There might be a cost issue to that. Certainly, on the telephone calls there is.
If you could design an ideal ICT environment to aid your collaborative learning for your PhD, what would it look like?	I don't use the instant messaging, or the...there's some other tool that's online meetings. so I don't use those, but I do think if I got into that it would help. On the other hand, since I have my laptop on my lap all the time, it's very distracting of my work, the little ding, that there's something new out there. And so, in a way it's disruptive. So while I want to be continuously able to communicate, there's the other side to me that says: "Well, I want to be able to plan it and schedule it."

Contact Type: Interview
Code: HOD-9S

Site: Fielding Winter session January 2005, Santa Barbara

Question	Information (Summarized)
How does FELIX support learning individually and with others?	one of the uses that I have made of FELIX is alerting me of online or intensives which is one of the ways I like to learn, is in a group environment if possible. So whenever online or intensive experiences are posted on FELIX, I have the notifications set up to alert me. So that's one key way that I have used it. I have also participated in a number of online learning experiences on FELIX for several of my KAs. that is very much what's happening in these online environments, is that you are sharing, "Here's the literature that I've read in this topic" and you're having a discussion as well as providing the references. Now, there are also on FELIX, there are a variety of forums that are set up from time to time which will say, "I want to start a discussion topic on this. Would anybody be interested in joining?" And then as part of that discussion you're sharing references that you found on a particular topic. So that happens frequently. I would not think of FELIX for doing that. Now what has happened on FELIX is that people will say, "I am doing my dissertation topic on this, this and this." "Is there somebody who falls into this category or do you know of anybody who falls under this category so I can involve them in my data collection?" That happens frequently and I have actually responded to two of those emails because I fell into their target group. And then they later mailed me the survey in one case.
To what extent do you Review each other's work?	I know that there are some people in my cluster group who have talked about forming like "writing groups" of other students where they emailed, their writing back and forth and said, "Will you read this," you know "and comment?" they're going to do an online session. So you will post a sample of your

	writing on this session and we will each critique it.
Are there specific technology improvements you would like to see in FELIX?	I would really like to see more of a multimedia environment and I'd love to see something that falls more into the telepresence capabilities but I understand that to support that we'd all need to have T3 lines running into our homes. . But I feel that there is a richness to our communication that happens face to face that is not going to be the same as a text-based learning experience. Now I understand that the trade offs are that we are influenced by the visual aspects of people and there is also you know the group dynamics, the intimidation, I mean all of those things that happen in a face-to-face group experience that don't happen, you know, in a text base. But, I'm not really promoting necessarily a synchronous environment. I mean, it can still be asynchronous, but if we've got this richer more multimedia thing I think it would be much richer for me to, instead of reading your message
Have you used technologies to work with colleagues other than FELIX?	we do a lot of email, teleconferences
Familiar with "ICT"?	yes
Which ICTs do you use in your PhD program?	FELIX, library search, Teleconferencing, phone
How would you define advances in ICT?	more multimedia telepresence environment
Does your PhD program involve shared knowledge creation activities?	There are a number of FELIX forums that provide information sharing, I do believe that we are actually in some areas creating new knowledge. Because during these sessions we are really looking at, you know, so-and-so is offering these theories and so-and-so is offering these theories and what are sort of the intersections or what are the conflicts or, you know. So there is a discussion that really is new knowledge.
What activities do you do with other PhD students?	we do cluster meetings once a month so that's kind of a standard thing within FELIX. And I do go to the cluster meetings because I think those are important.
How does Fielding encourage collaboration?	I think the fact that it provides these forums, the sessions, you know, the forums on FELIX, the onlines
Do you feel that there is anything in Fielding policy that discourages collaborative learning?	no
Satisfaction w collaborative activities on a scale of 1-5.	5, I'm perfectly satisfied
When did you begin to understand and trust these collaborative learning methods at Fielding?	Immediately. At my OPS [phonetic], I'll just say Jerry and you can cut it out if you want
Is there anything you would change or improve about the Fielding collaborative learning environment?	more telepresence
How do collaborative technologies help you in your program?	I think FELIX offers you this online opportunity. It tells you about the different experiences you have. It gives you opportunities to have discussion groups with all sorts of topics that aren't just KA related. So you know, I think the option is there for you if you chose to participate. And you know I know that I can go out there at any time because I have actually kicked off a couple, I kicked off two onlines and I kicked off one intensive. So I went out to FELIX and said, "Look we want to get

	this group together. This is who we're talking, you know, this is what we're thinking about doing, bla, bla, bla." And you know, people came back and responded and you know we set it all off. So it worked –
How does your geographical location impact your learning process with Fielding?	I don't think that it impacts it. I happen to live in the Bay area where we have a number of Fielding faculty and who do come to the cluster meeting and so I feel very in touch
Which ICTs help to reduce the affect of distance on your PhD program?	n/a
What are the current short-comings of ICT in reducing the affect of distance?	n/a
If you could design an ideal ICT environment to aid your collaborative learning for your PhD, what would it look like?	telepresence

Contact Type: Interview
Code: HOD-10S

Site: Fielding Winter session January 2005, Santa Barbara

1. What were the main issues or themes that struck you in this contact?

there was something that the face-to-face communication enriched the online, and the online communication enriched the recognition face to face

Question	Information (Summarized)
How does FELIX support learning individually and with others?	I haven't done a seminar yet, but my understanding is that seminars and online things is one way Fielding supports learning with others. Individually, it's easy, because I can look up just about anything I want in the study guides; and look up faculty bios; I can look up readings lists; I can look up other people's work; I can look up exemplary papers. I can look up quite a bit of material. And then, there's all the libraries that you can research. So there's a lot available for the person who's self-motivated, in terms of an individual researcher. But I haven't quite yet totally tapped what's available in terms of group learning.
To what extent do you Share literature?	my anchor group stays in communication. We've formed our own forum. And when one of us finishes a KA, we post our papers for the others to read and review. So our bibliographies are in those papers, and our citations are in those papers.
Are there specific technology improvements you would like to see in FELIX?	I have an opinion from my personal use that FELIX is complicated to figure out for a first-time...for a new, first-year student. Every time I attend a seminar, or whatever... this is my first national session, but even at OPS [phonetic], anything that I can attend that helps me understand how to sort through the layers upon layers in FELIX, it's good, because it's just very difficult to decipher where things are, exactly.
Have you used technologies to work with colleagues other than FELIX?	I did my undergraduate work online, so I'm very familiar. In my work, I work in a small non-profit, and we communicate with each other via email; we attach files back and forth to each other for editing. I've been working in Word, in Excel, in formatting things for well over my whole professional career, so I'm very comfortable online. Frankly, I prefer...I worked with faculty on my first two KAs, with a faculty who was very responsive. He was wonderful, and responded back within a week. I understand that he may be the rare one, but he was great. And I could just attach files and communicate that way, so I found him...I'm very comfortable in the online format, very

	comfortable.
Familiar with "ICT"?	no
Which ICTs do you use in your PhD program?	I use the digital libraries. Paper-based books, of course; journals, yes; meetings through...I haven't yet done group meetings through online, but I can see their usefulness. I definitely use email. Internet, of course. FELIX, yes.
How would you define advances in ICT?	I am definitely not a person who's going to understand the inner work of a computer. So I'm not quite sure what you're asking me on advances. The speed with which things can be accessed. I feel like a fish in water. It's hard to describe my environment.
Does your PhD program involve shared knowledge creation activities?	our conversation is shared knowledge, and any conversation; and reading the written word is shared knowledge.
What activities do you do with other PhD students?	I hope to do online seminars. I've heard that collaborative learning in groups works very, very well for some people, so I'm looking forward to doing that on some KAs, or some sections of KAs. As I meet more people over the course of coming to more things, I have met other students who've said to me: "Oh, we should collaborate on X, or we should do this together. Maybe we could do something on that together." So I can see where in the future, as I move along, that I will combine with people on studying something.
How does Fielding encourage collaboration?	I would say that there's a very accepting atmosphere for creating and constructing your own way of doing things. And it seems that no matter what angle one comes...or I have come at something so far, there's a faculty member who's open to hearing what that is, and making suggestions on how to: "Oh, make sure you connect with this person. Oh, make sure you connect with that person." So there's a lot of referencing back and forth and around.
Do you feel that there is anything in Fielding policy that discourages collaborative learning?	Not yet
Satisfaction w collaborative activities on a scale of 1-5.	as I said, I haven't done seminars yet. Coming to winter session, in a sense, is collaborative learning, so I would say so far, five
What is your preference, to work individually or collaboratively?	I'm a very individual worker. I don't know...I'm not quite sure what the collaborative experience will be for me here. . However, in my work I collaborate quite a lot, and I enjoy that. So I haven't made the crossover into academic collaboration yet.
When did you begin to understand and trust these collaborative learning methods at Fielding?	OPS. trust is an interesting thing, because it builds over time. So one doesn't immediately...I don't know what levels of trust I will grow into when I actually experience some of the seminars and collaborative learning. But finishing a KA, like 753A, I was collaborating with my faculty in order to complete that, and that was a very satisfying and confidence-building experience, so trust is building most definitely.
How do collaborative technologies help you in your program?	I don't think it does. I live in Portland, Oregon, and I have access to libraries; I have access to computers. I have, within the non-profit I work a technical assistant, so I'm lucky. So technology, I don't have to go crazy about it. If I'm really confused, I have Kim.

Contact Type: Interview
Code: HOD-11S

Site: Fielding Winter session January 2005, Santa Barbara

Question	Information (Summarized)
How does FELIX support learning individually and with others?	<p>It sup It supports it in that there's online seminars, as opposed to the other ways that we do knowledge assessment. It supports students by the library services that it has available.</p> <p>You know, both books that are on the computer and telling, you know, sources to actually, you know, articles themselves, journal articles or where I can go to get books. So in that sense, it does. It allows you to network with other students and faculty by giving whoever [phonetic] those email address.</p> <p>And then there's announcements on there as well. Announcements of, you know, of course the processions and cluster meetings and for things like that.</p>
To what extent do you Share literature?	<p>Well, you know, I have most connection to people in the Los Angeles cluster where I am. And when we talk to each other, you know, whether we're emailing each other, whether we're talking to each other, people are always saying, you know, "Have you read this article by so and so?" You know, "I'll email it to you. Have you read this book? You can borrow my copy."</p>
To what extent do you Discuss literature you've read?	<p>Yeah, if we share interests, then you know, we may go into deeper conversation if we've both read the material. Actually, there's just one time so far when a friend and I, we're both not working now, so we have some time on our hands, and we both took a chapter out of Bateson's book.</p> <p>It's a kind of compilation of his work. We both read it and then we got together and we sort of highlighted things and discussed it as a learning tool because we thought that that would help both of us. Other than that, I think it's kind of more, you know, sort of on an individual basis. You know, like you might want to know more about what the article this person read before you decide to read it yourself, so you just maybe in conversation go a little bit deeper.</p>
To what extent do you Review each other's work?	<p>I per I personally haven't so far. There are students who I've seen online ask for somebody to put their completed paper online in the same area so that they can look at it. You know, actually I've avoided doing that because, at this stage, I'm starting, and I haven't turned in completed papers. I've been working on papers since I started, but...</p> <p>Well, that's not true. Someone does, so there is an exception to that. This person that I knew and I roomed with a couple of months ago at a session. You know, I told her that I was struggling with this paper; we had exactly the same assignment to do. And she said, "Well, I have that on my website. Feel free to look at it."</p> <p>And I purposely didn't look at it for the longest time, because I didn't want to compare my work to her work because I thought, you know, it was just the kind of assignment where you could go so many different ways. You know, I wanted to be more confident in my way.</p>
Are there specific technology improvements you would like to see in FELIX?	No
Have you used technologies to work with colleagues other than FELIX?	I'm using the phone and email a lot.
Familiar with "ICT"?	No
Which ICTs do you use in your PhD program?	Internet services. I use software. I use the digital libraries. You know, and phone.

How would you define advances in ICT?	I'm I'm a real low-tech person, so if you said something was advanced, to me it would mean more user friendly, easier for a non-technology person to deal with and understand. You know, I don't know the technology, but you know, I would just say in general, you know, I like people and I like being in the presence of other people, so anything that felt more like you were in somebody's presence. I don't know that pictures to do that, like you know, teleconferencing or that kind of thing.
Does your PhD program involve shared knowledge creation activities?	Well, I think that all learning is collaborative.
What activities do you do with other PhD students?	We do intensives, you know, where we have a faculty member come from out of the area to the area and sort of have a learning session with them for, you know, a few hours up to a couple of days... Personally I've been to one in our local area because I don't want to travel. But we also had a special meeting this year where students on a one night could get together and just talk about current research they were doing, or things they were doing that they were excited about. So there's that experience as well.
How does Fielding encourage collaboration?	I think there are some faculty who don't like the idea of students working together on the knowledge areas on the classes. And I don't know that I would learn that way. Like, you know, take a class with somebody else, not in a structured way. But they just divvy up the work between them, somehow, and together, you know, work on a joint paper, a joint class.
Satisfaction w collaborative activities on a scale of 1-5.	3
What is your preference, to work individually or collaboratively?	I prefer to work collaboratively, but with the accountability being individual.
How does your geographical location impact your learning process with Fielding?	I'm lucky to be in an area where there's a lot of students, so I have access to a lot of different people that I can talk with. So I think I'm lucky in that regard.
Which ICTs help to reduce the affect of distance on your PhD program?	You know, being low-tech again, I would say that FELIX, the online way that we can talk to one another about anything, that that could be a real good way, you know, for me to feel in touch with other people. But I think it's underused by students.
What are the current short-comings of ICT in reducing the affect of distance?	Again I don't see a problem with the technology.
If you could design an ideal ICT environment to aid your collaborative learning for your PhD, what would it look like?	I do I don't know if this is available on FELIX, but I would like there to be some sort of like availability at any time, just being able to get online and chat with somebody else who's working and then just, you know, "What are you doing? This is what I'm doing." See if there's any connection or not, just to sort of have a way to communicate with anybody who might be around at that timeline to communicate.
How do you contract (student / faculty) on a knowledge area?	What I do is I look online, I use information that I have about a faculty member. I'll look online, I'll look at their ETA [phonetic], I'll look at the areas that they assess in. Well, I'll already start with the subject area that I want to assess in. And then I'll, you know, see who, you know, meets my expectations or needs in that area. And I'll formulate some idea. But so far, it's been difficult to initiate conversations with faculty. I would just have a general idea of what I

	<p>wanted to study, but you know, I'm pretty good at just calling up or emailing and saying, you know, "I'm interested in assessing in this KA. Do you want to have a phone conversation about it?"</p> <p>And then typically we go back and forth to define more what I'm interested in, what their expectations are, how they can help me. And that kind of a thing. It's a very loose process, you know, which caused me a lot of struggle in the beginning to call somebody up I didn't know and didn't have a very structured thing to talk to them about, you know. So initially, you know, a call to a faculty member would be, you know. Well, you know, I was just saying, "I don't know when I'm supposed to call you. I don't know how much we're supposed to stay in touch. I don't know this," you know?</p> <p>"Can you set some parameters for me?" So you know, it's very individual. So the person would say, you know, "Call me when you need to," "As much or as little as you want" and you know, they'd tell me their preferences. And I'd just come to understand that there's as many different ways to do it as there are faculty and students. You just have to negotiate and then just talk about it until, you know, you come to some kind of agreement. It's a lot of, you know, sharing your expectations or your needs. And then sometimes there's miscommunication because they think that you should know already X, Y and Z or something.</p>
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Contact Type: Interview
Code: HOD-12S

Site: Fielding Winter session January 2005, Santa Barbara

Question	Information (Summarized)
<p>How does FELIX support learning individually and with others?</p>	<p>From my perspective, one of the things that FELIX does provide is a way to access what's going on in the community, in the Fielding community and to also be able to post information about what's happening.</p> <p>And then I would say part of the other piece of that though is also the, like when I've been to a couple of online seminars that obviously are hosted through FELIX, but there are special interest groups as well. Not that I don't access the main [phonetic], I'm in my dissertation phase so I don't access FELIX nearly as often as I used to when I first started the program. When I first started the program, it was, kind of, that connection. For me it very much was a connection to the community and finding out what was going on as well as, you know, getting involved in some of the discussion threads.</p> <p>I would say I'd probably access it around once every two weeks depending on the [unintelligible] I know partially where I am in my process, I don't need it as much and I am just too busy. I just, I'm just way too busy to access it.</p>
<p>To what extent do you Share literature?</p>	<p>There were two opportunities. One was actually not a KA, it was and I don't remember the name, but it was professional something seminar. But it was actually, it was an online seminar around scholarly skills, that I found to be very helpful but they no longer offer it here, and it was very structured, because what we ended up doing was we had structured readings and we would respond to those readings and we had to respond to other students' responses.</p> <p>And then, and it was, it took, I think a lot of people didn't get involved because it wasn't a KA, but for me, I needed somewhere to get back into school. I had been away for 15 years, and I needed some way to help me get back into that.</p> <p>And I thought it to be very, very useful and I think it kind of helped in</p>

	<p>my academic writing. The online seminar that I participated in, wherein there is two ways that I would use FELIX. So the online seminar we had, it was a very structured process in terms of we had certain assigned readings, we'd have to write a reflection paper and then respond to others. It was a very small group and respond to each others' reflection papers. And then the other thing that we had to post was we each had to do a critical review of book and that had to be posted on there and that was, so it was, we knew from the outset that there was going to be this kind of structure and there was going to be these kind of required responses and dialogue going on.</p> <p>The other way that I can use FELIX is I was a part of a couple of special interest groups where we actually used it as a way to do a synchronistic discussion.</p>
To what extent do you Share data?	<p>The one [Interest Group] that I was part of which is no longer on FELIX was a spirituality forum and it was a group of people who wanted to share spiritual practices and so basically we had, we took turns moderating it once a month. And then you have the whole month, kind of, responding to whatever the question was in response [phonetic], but that wasn't required that we saw each other's questions.</p> <p>There is another one now that has to do with, I think the name of it is Our Sister's Place and it's all about women's issues and so, so those are very informal kinds of, usually it's one or two students who moderate it, and they have to have a faculty who okay's that or [unintelligible] as well, so I'm on three of those.</p> <p>And sometimes they take a direction you want them to take, and other times they don't, so, you kind of, you might still be on the list but you don't necessarily access it very often. That's what's happened for me with the, it was one on coaching and I just don't access it very often.</p>
Are there specific technology improvements you would like to see in FELIX?	<p>Boy, that's a good question. In the, yeah, I'm trying to figure out how, I would love to see more instant messaging kinds of discussion so that there was a scheduled time where everybody knew, everything is asynchronous right now.</p> <p>And so, so I would love to see from that perspective the ability to do, I do some consulting work for a company that they call it quick placed and so, or they call it same time, they have this same time kind of ability to be able to be on conference calling and/or, you know, kind of do this web chat kind of thing. And we don't do any web chats to my knowledge.</p>
Have you used technologies to work with colleagues other than FELIX?	<p>Well I've done a little bit of the web chat kind of stuff, I've done video conferencing, those kinds of things. I was part of a group here that we were trying to do some, we were each given web cams and the whole idea was just use [unintelligible]. We never really got it out off the ground, because certain people couldn't install the web cam.</p> <p>And then we had to have a special call in number and all that kind of stuff.</p>
Familiar with "ICT"?	No
Which ICTs do you use in your PhD program?	<p>FELIX is on there. Okay. My FELIX work I obviously use the Internet, in fact almost all of my article research because I would move in an area until recently you couldn't get access to any local [unintelligible], off site, offline. But I couldn't get access to physical libraries without traveling an hour and a half.</p> <p>So all of my article research has been done through [unintelligible] and other web-based tools.</p> <p>When it gets to the more advanced stuff, I let my son do that for me. So, I haven't done it with FELIX work, haven't done the video conferencing. I've done it in my professional work.</p>

<p>How would you define advances in ICT?</p>	<p>Oh, absolutely better have the ability to plug in. The problem is power, ubiquitous power. I'm one of those people that other people laugh at in airports because I'm sitting on the floor with my laptop. I mean, we're talking about leaving on Saturday and [unintelligible] my husband [unintelligible] we're going up the coast [unintelligible] want to be at the airport long enough to charge up again.</p> <p>When we get on the airplane, I have enough battery power to work, so that's probably I think from a Fielding prospective, absolutely we've got to go to some kind of same time or web chat, I think it would be so much more helpful. I [unintelligible] all over the place, but there is sometimes where that real time conversation is important, either video conferencing or, you know, some kind of web chat so that you can, kind of, continue those discussions.</p> <p>And, but it's probably the thing I would say I would miss the most in Fielding is its real time conversations.</p>
<p>Does your PhD program involve shared knowledge creation activities?</p>	<p>Yeah. There is, in my dissertation process right now, there are some people that I share with and each time I share it takes me deeper into my own dissertation process. It also has affected the way that my methodology has evolved, so I'll give you an example.</p> <p>My research topic is on the unintentional, the lived experience of an unintentional, unexpected, mystical encounter and one of the things that's involved in my interview process is at the end of my doing the interview, my last question is usually, you know, one question which I've asked them and didn't ask and almost always, I'm obviously going to ask that question right?</p> <p>And in one of my interviews, one of my co-participants actually said, "Well is it okay now if I ask you a question", and so I said, "Sure", and one of the questions that I had asked her actually triggered from her she wanted to know how the person I had shared with had responded to my experience and it was like, "Wow, this is my husband and this happened twenty years ago and I never asked him what he thought about it".</p> <p>You know, it was like, so it was very definitely based shared knowledge and so I see my whole dissertation process as with emerging shared knowledge kind of thing.</p>
<p>What activities do you do with other PhD students?</p>	<p>Not much anymore. When I first started the program I was involved with the clusters. I had a high need for that kind of community attachment. I do come to the national sessions, I made every national session since I started the program.</p> <p>The only other thing I can tell you is that I have a couple of really dear colleagues that we are evolving into the process of actually keeping each other motivated to finish the dissertation. And I am a student reader for one of those two people. But it's much more informal, I'm way too busy.</p>
<p>How does Fielding encourage collaboration?</p>	<p>One of the things I think they do very well is that they do international sessions offer all lot of student [unintelligible], you know, so if a student wants to leave a seminar or something like that, they'll [unintelligible] one activity and then the faculty will often actually ask students to partner with them for some of the seminars.</p> <p>So I think they just, I think basically they model it. I also think in the committee process, if you get the right committee together it's not an adversarial role at all, it's very much, I have actually a fabulous committee that's a very synergistic committee and we, there is always that power thing because you're the student and they're not. But that's not how they treat me, they treat me like an equal and so there's always that kind of dynamic.</p> <p>And they also are very good about saying, "You know, you really ought</p>

	to connect with so and so, because she's doing a dissertation on such and such, and you really ought to contact so and so because he's", that sort of thing. They really try hard to foster that.
Do you feel that there is anything in Fielding policy that discourages collaborative learning?	No.
Satisfaction w collaborative activities on a scale of 1-5.	5
What is your preference, to work individually or collaboratively?	In terms of working on my PhD, I love the collaboration with the committee, but it is my work so it's really a combination. It's a combination.
When did you begin to understand and trust these collaborative learning methods at Fielding?	Actually part of the reason that I came to Fielding was that I was looking for that because of my previous [unintelligible] program I worked on. It was an adult education, adult spirituality degree and it was very cutting edge in the mid eighties and it was a very collaborative learning environment. We actually lived in community together, similar to here, for three weeks at a time, so I knew I couldn't go back to the traditional program. And so one of the things that drew me to Fielding was that opportunity.
Is there anything you would change or improve about the Fielding collaborative learning environment?	Yeah. I think I would, a lot of the student to student collaboration is very informal and not structured, and I think that they are still searching. Clusters are wonderful, but the problem with clusters is that you find students in [unintelligible] range geographically. So, you end up with students who are at all ranges of the program and in your first couple of years that was very, very supportive, but there aren't the structured ways of collaborating. They haven't built that in a structural way so they should get further into the dissertation process. You know, there might be some opportunities for people to come together, so it's pretty much, and part of that might be the whole self direction of the adult learner model, so you're left on your own to find that and some of us do and some of us don't.
How does your geographical location impact your learning process with Fielding?	I live about 70 miles North of Manhattan and I live in an area where there are a lot of schools, but I live, for example 15 minutes from Basser College [phonetic] and until recently I had no access to that library except when students were not in session, because they had a policy that said that if you were not a student of the faculty, you couldn't do any research. I mean I couldn't even go in and make copies of articles unless they were not in session. I actually wrote a two page letter about it. So they never actually opened it up to, if you can validate that you are a scholar student. And so it's very hard because any, the other decent libraries are either cost prohibitive, actually that's another thing that Fielding could work on is getting us access to libraries that are close to home. Because sometimes you just have to physically go and do your work and get the articles or whatever. You can't always get them online. And so it's an hour and a half trek for me to get to the closest library where I have access to decent journals and stuff like that. So, you know, I do what I can online and then what I have done, because I travel a lot, I [unintelligible], so you know [unintelligible] professional work, then I would spend an extra day and I'd just go in the library and do what I needed to do and, but I think the other thing is like a lot of Ivy League schools, it's cost prohibitive for you to become a friend of the library. So, I know who [unintelligible] University of Albany so I have more access. Actually, I've done the last couple of years actually.

Which ICTs help to reduce the affect of distance on your PhD program?	Well obviously the email. Email is so much a part of my life; it's kind of like not in my consciousness. In terms of, you know, email is the, with email it's FELIX but especially it's the access to the virtual libraries.
What are the current short-comings of ICT in reducing the affect of distance?	Yeah, the other one that I can think about is and you're starting to hear things that might change is the whole ability to, because I travel a lot, like here is fine because they now have wireless, but you know being able to connect, in other places in the United States where I mean, I can't even get a good modem connection. So from that perspective, absolutely I think that needs to be improved. I think for people who travel frequently like I do, some way to access. At least keep power up is critical, as well as access. One of the things that I find when I travel internationally, it's becoming easier but I still have difficulties necessarily accessing my emails, for example. Or getting through, you know, being able to internationally connect. So I think that needs, it's like I said, it's better now as places get more and more wireless. But I can remember four or five years ago being out of the country for two weeks and not being able to access email, because I couldn't access either through the [unintelligible]. And there's not from an International perspective, it just becomes really difficult because you don't understand how their phone system works, you can't even access the modem. You know, and it's like all that kind of stuff.
If you could design an ideal ICT environment to aid your collaborative learning for your PhD, what would it look like?	It would be wireless access with some kind of real time web chat capability, and that provided easy sharing of our, I mean, it's kind of pain in the ass to share articles with people once you scan it in or that kind of stuff. And so that increasing the ability, increasing digital libraries to the point where you could download PDF files and then just send them, you know. Often times, there's an article that I would like to share with somebody and I can't. It becomes time consuming to be able to do that. You know, so you either, I don't have scanning capability at home, so you end up making a hard copy and then you send it to somebody, and you know, that all takes time. So I think that ability, sort of, I think it's better abilities to scan stuff in that doesn't take up, you know.

Contact Type: Interview
Code: HOD-13F

Site: Fielding Winter session January 2005, Santa Barbara

Question	Information (Summarized)
How does FELIX support learning individually and with others?	Our SiteScape forums are very important. I do a lot of online seminars and I use the forum structure quite a lot. For two major reasons. One is I can post a lot of documents. It becomes the reserve reading room for the seminar. And I can structure the session and the discussions happen online. (Sitescape is the software package that is the architecture, the platform, for Felix).
To what extent do you Share literature?	One two and four, a lot. Read literature, discuss literature, and interact with each other. We don't do a whole lot in terms of sharing data.
To what extent do you Share data?	We don't do a whole lot in terms of sharing data.
Are there specific technology improvements you would like to see in FELIX?	Yes. I will give you a short list. One is, it would be very useful if I could have more than one person authorized as the manager of a particular forum. I'm using a...what's that I'm using? I have a student

	<p>who's working with me for her own learning as sort of a teaching assistant in one of our seminars. And we have to designate one or the other of us with the ability to modify the syllabus and stuff like that which is just a pain and a hassle.</p> <p>I would like it so that the copy and past function from word into the folders were more seamless and didn't mess up the formatting. For example in some of the documents that I post there are in LA style footnotes at the bottom of the page, which get completely left off. Which makes some documents not nearly as useful as others.</p> <p>I think it's, FELIX as a whole is too cumbersome and it's very large and the decision tree package to get through it defeats a lot of people, particularly people who need to economize their time by which I mean all students and the faculty.</p>
<p>Have you used technologies to work with colleagues other than FELIX?</p>	<p>Okay, I do telephone a lot. I've used some other kinds of things in other ways. We do a lot of conference calling and there's a thing set up...you probably have the technical information for it, I forget the name of it [unintelligible] they've changed it...we all dial in to a conference. In other context I've used...I'm forgetting the brand name, where you dial into a service and there's a video conference system. I've used that a couple of times. For presentations. Not in Fielding as it turns out.</p>
<p>Familiar with "ICT"?</p>	<p>No.</p>
<p>Which ICTs do you use in your PhD program?</p>	<p>I'm in the doctoral program yeah. Okay, look at the low tech, no tech. Paper based books and journals, yes. Meetings, yes. Mail, yes. Okay, so telephone and fax I use. Let's move the mid-range. Broadband, fiber, yes, yes, yes. Internet yes. The web, yes. FELIX yes. I've used blackboard, video conferencing. Visual libraries. Databases. Okay, advanced. Reusable learning objects, I'm not sure what that means. I posted things on, I frequently share things with my faculty colleagues and students by putting them in some of the forums or some of the places on FELIX. If that's a yes, then yes.</p> <p>I think I'm able to answer your question. I do a lot of the low tech / no tech, a lot of the mid-range, very little if any of the advanced and when you're talking about this Internet II capacity one of the difficulties we have is I do a lot of file transfer. And the students have a great deal of difficulty downloading, particularly PDF documents. And that's in part a function of the different connection speeds that various people have and the... So that's a sticking point and a problem, so when you're talking about expanding from DSL to something much bigger my perk up.</p>
<p>How would you define advances in ICT?</p>	<p>I think advances that I really honestly would like to see here are probably not very much advances in terms of potential and what's going on. But I think that the standardization of equipment, standardization of software packages and things like that, standardization of access speeds, among the faculty and the students would be a tremendous advance.</p> <p>A second advance would be simplification. Many of us are users of, not techno geeks or cyber geeks, and frankly I don't have time to keep up with each successive way at a technical level. I need it to be seamless and user friendly. And see that as a case.</p> <p>I think moving into a bandwidth capacity that would allow us to do what ought to be real simple, like a PDF document of a chapter or something like that, but then beyond that into video files and pictures and things like that, would certainly be an advance in terms of learning. Another advance that I think would be really important and that's personally frustrating me at the moment, is where to place a lot of documents. For example, we don't have a library. My office is not</p>

	<p>where students can come to it. When I was teaching in traditional universities students would come by the office, sit in the corner, read my books, as a way of getting immediate access to documents. What I'd like to do is to put a lot of my documents into some sort of digital form where my students can access it. And doing this now on my own private website as a way of achieving this, there's a couple of problems with that. One is I have to pay for the website myself - and the other is copyrighting because that website's in public domain and I think the copyright laws are different if it is restricted to the students within a program. So if we could have much more storage capacity instead of some sort of library materials that students could access or something like that. That would be another advance.</p>
Does your PhD program involve shared knowledge creation activities?	We do that a lot. And particularly in the online seminars that I do.
What activities do you do with other PhD students?	Yeah, the most direct thing I do is setting up my online seminars. And one of the things that people do in the seminars is to rethink and then post papers and then respond to each other's papers and then different times during the seminar take responsibility for pulling the threads together and carrying on the conversation that way.
How does Fielding encourage collaboration?	Through the faculty. There was another answer I was going to give you about how I do that. All the time connecting students you're interested in [unintelligible] so you know there's another student over here who's interested too and here's the email address, why don't you talk and stuff. So it's a lot of the informal personal structuring that goes on. Our national meetings, our cluster structure.
Do you feel that there is anything in Fielding policy that discourages collaborative learning?	There's a little push back at...sometimes students want to do collaborative dissertations and collaborative comprehensives. And there's push back from the faculty. I support that push back. But those are the restrictions. In terms of the knowledge areas, which is the bulk of the work, no there is actual encouragement we can try to facilitate and foster collaborative learning.
Satisfaction w collaborative activities on a scale of 1-5.	Close to a 5.
When did you begin to understand and trust these collaborative learning methods at Fielding?	Pretty quickly. One of the first things they did was to invite me to an OPS, Orientation Planning Session. And I sat in with the students, a new group of students with a faculty and an advanced student leader in the anchor groups. And at that session I of course was learning along with the students about all the ways and so on. And there was a group of students there who wanted to um, to do a collaborative knowledge assessment with me. And they called themselves the all over the world group. Because they were from Australia, Hawaii, North America, and Europe. And so we formed an online forum where they could work collaboratively together and they did and I worked with it and that was maybe the first KA I assessed, so I learned to trust that model and then it worked very, very well.
Is there anything you would change or improve about the Fielding collaborative learning environment?	Yeah, straighten out the universe so nobody has to work for a living.
How does your geographical location impact your learning process with Fielding?	Yeah, it doesn't much. I joke with my students that I live in cyberspace. As a matter of fact I live in an area where there are a lot of Fielding students, in San Francisco. And that does mean that it's possible for me to have face-to-face conversations with some of them. But I kind of

	<p>discourage that, because for me it is a relatively unproductive use of time most of the time. I can be more efficient dealing with people's income or their stuff by email or by telephone conversation. If for nothing else, I usually don't take my morning shower until about five o'clock. You know I get up, I work in my sweats, and so on and when I have to get up and actually clean up and drive to a restaurant or something, I find that it takes most of the morning to have a hour meeting.</p>
<p>If you could design an ideal ICT environment to aid your collaborative learning for your PhD, what would it look like?</p>	<p>Okay, first of all I wouldn't have to buy my own computer and peripherals and paper and all that kind of stuff. We get a stipend that's supposed to pay for our office stuff and it doesn't quite but that's different from having somebody who really knows what they're doing, makes selections [phonetic] and stuff. I have to make judgments that I don't know how to make. We would have very powerful computers and peripherals and very, we would...I'm still intrigued by the Internet II connectivity and so on. I know that many of my colleagues are working on dial ups, they don't even have DSL lines and it restricts what we can do.</p> <p>Particularly since we do a lot of our committee meetings, the accommodation of conference telephone calls and the forum where we post documents, and some faculty members say that it's hard for them to get on to FELIX and we go through all of the pages and download and so on, and I mean that's crippling. So we'd have better support, more powerful equipment, standardization.</p> <p>I think the other thing that we would have is, I do not want to have a television camera looking at me when I'm working you know with students and so on. At least there's a default option. Maybe for very special cases but I just don't want that. But it would be really nice to have increased capacity to use other than print words, as ways of posting materials online etc, etc. I talked about having some sort of a disk space, somewhere, where I could post lots and lots of materials.</p>
<p>How do you contract (student / faculty) on a knowledge area?</p>	<p>Now they were all together at the OPS so we had dinner together. And oh it was funny, they first kind of interviewed a number of faculty members to you know, "If we were to contract with you, how would you do it?" And they picked me. And what we did there was they said, "Okay, what would be the basic readings that we would want to have in common and we discussed that and I gave them some suggestions of some very basic things. I pushed them a little harder than they wanted to be pushed in terms of getting in...this was to bring a little bit of the philosophy of science, a little more of that into it than they might have thought.</p> <p>And then we talked a good bit about each person's individual interests and then how to have a common core that everybody would work on, with states for each person then to bring in their own individual interest and then we talked about our process. What would be the sequence that we would do, the time frame, [unintelligible] how we were going to work together and what kind of commitments we were going to make in terms of posting by certain dates and things of this nature? And it's like all things I think there were two people in the group who did not complete the process, who dropped out for one reason or the other. But the rest followed on pretty well. And we then agreed that at the following national session... let's see that was in the fall, not winter, but the summer... so about eight months hence, we would have a session where they would come face-to-face and do presentations of the individual work that they had done in a way that each person could count on [phonetic] and discuss.</p>

Contact Type: Interview
 Code: HOD-14A

Site: Fielding Winter session January 2005, Santa Barbara

1. What were the main issues or themes that struck you in this contact?

Views about eliminating email

Question	Information (Summarized)
How does FELIX support learning individually and with others?	<p>Information (Summarized)</p> <p>Firstly, FELIX it's a repository for : learning guides material produced within the school of HOD. (in the past only available via hard copy) policies & procedures faculty information Virtual library Secondly, it enables/supports collaboration/interaction among students and faculty through: Online forums Virtual offices (1/3 of faculty already have them) The final thing is that it's a double back up for students. They have their papers on their own computer, they back it up, but then they're also posting them on FELIX.</p>
To what extent do you Share literature?	<p>Depends upon the students: some students sharing everything from start. (we're really encouraging this with brand new students), Other students never share and it's really a student's choice.</p>
To what extent do you Share data?	<p>Papers posted on FELIX can be accessed Using FELIX Online tools allow for sharing of papers. We also have a large number of small groups of two, three, up to 12 or 14 students that have formed their own groups and among these folks they're sharing totally everything and a lot of it is not FELIX, it's invisible to FELIX because they're emailing back and forth. But the grapevine is very strong, and the grapevine is not just for which faculty will give you a hard time and which faculty won't respond but it's also sharing the papers, and sharing ideas.</p>
To what extent do you Review each other's work?	<p>Using the virtual office the track changes function of word and we make the comments directly in the students' papers and then post the annotated paper and students revise the paper and post their papers again on the virtual office. All of the students that are part of a faculty's virtual office are invited to look at and to review papers of others students. So it's the real important piece there is also sharing information among students. And that means that the comments that one faculty makes on your paper, will also be available to other students who want to read it.</p>
Are there specific technology improvements you would like to see in FELIX?	<p>All of the improvements are in the works. Would like to have something similar to Face to face sessions: Radio broadcasts of faculty presentations/workshops/seminars(one time events) real time broadcast to various face-to-face sessions is desirable but prohibitively expensive. delayed-time video streaming of sessions. The problem there is having the dollars to do adequate video taping so that it's fairly professional and not amateurish and so that's not to do with the online technology but it is to do with the precursor technology.</p>
Have you used technologies to work with colleagues other than FELIX?	<p>We've also used some online environments that are not on FELIX. And so we don't use, I haven't used, but actually other faculty have, because they're using Web CT, Blackboard and some other. I mean if you're looking at the specifics, different faculty have teach [unintelligible] or</p>

	<p>our faculty about a half of them teach elsewhere and so they have Blackboard and stuff that they use elsewhere.</p> <p>Video-conferencing via the Internet is not successful in HOD right now. It's being used, but not successfully for two reasons. One is we find, and most research supports this, that you don't need to see the video picture all the time to communicate well. You need to have, what works best...according to most of the current research...is if you do have a picture of the person, and occasionally a picture. But the video-conferencing where you see the person all the time is not necessarily supportive of really good collaboration, particularly when it's not flowing smoothly on both sides, or on all of the sides. And that's happening more and more as people have different ways of accessing the Internet and different capacities.</p> <p>In fact I know Fielding has a policy saying that if you don't have a face to final oral review, the only other option is via video-conferencing. And in the school of HOD we just changed that and we've said, "No, we actually will allow telephone conferencing", when it's in conjunction with face-to-face and the distribution of color point slides beforehand. Because we actually think that's more effective than video-conferencing.</p>
Familiar with "ICT"?	Yes, as a computer systems analyst/developer I have been working with computers since the 80s
Which ICTs do you use in your PhD program?	<p>FELIX online forums, virtual offices environment. Some colleagues use WebCT, blackboards. Telephone conferencing as an alternative to video conferencing.</p> <p>Collaborative work : papers posted and reviewed by other faculty/students.</p>
How would you define advances in ICT?	<p>With Fielding I think that it's been appropriate for the diversity within Fielding in that there are, it's always a push pull. But that's okay because, and there's a lot of disgruntledness but that's okay too, because people are always looking forward and trying to improve things. I think that because we're not autocratic but we are collaborative, then the development of the online technologies and uses of them for me has been very appropriate for a genuinely collaborative learning environment.</p> <p>I think that the individuals use of technologies, the social changes that are coming about because of the technologies, are just at the very beginning point. And that's like the potential to where this is going and that has a massive change in who we are as a human species, and what we're going to be capable of doing. Very young kids are starting to grow up in an environment that's very different from anyone who's like over 15.</p> <p>And the changes that this is bringing about is now already enabling very young people to be wired differently. The hard wiring. And here again, this is a scenario, that if you really go into some of the research on what... On the impact of being on the Internet for very young children and particularly playing online computer games...and that's my research area now...is the impact of development of all age of online computer games, it is massive.</p>
Does your PhD program involve shared knowledge creation activities?	<p>we have a whole lot of collaborative research, and again the concentration that I mentioned ISOCKO is the collaborative research where we're actually doing research together on the different ways of knowing that are made possible when you're collaborating online. Every single online seminar involves new knowledge that's being created.</p> <p>And I think that our dissertations themselves are not done in isolation</p>

	<p>but are developed collaboratively. Even we've had collaborative dissertations in which people have worked together online. But there are many areas in which we are developing new knowledge. There's a research methodology that's very rarely used in the United States and it's phenomenography which is not phenomenology but phenomenography that is primarily used in Australia and Scandinavian countries and we've had probably about 12 dissertations that are using phenomenography, particularly in the online environment. And our folks are now being invited to Scandinavian countries to share what's being developed here so there's a lot going on.</p>
What activities do you do with other PhD students?	The interviewee is not a student.
How does Fielding encourage collaboration?	<p>I think by it's very nature it's been collaborative and they started out with three founders who collaborated and I think that our learning model in the School of HOD, because I think the question is a different question Fielding wide and HOD wide. Fielding wide the technology is a major part of it. Fielding wide also we set up Fielding based teams of students and faculty across schools. But most of the work is done within the schools and each of the schools have different approaches. Our approach is continuously encouraging online seminars, having specific faculty training and the facilitation of online seminars. Learning between faculty in our masters program, which is our primary online collaborative learning environment. And have you interviewed people in there?</p>
Do you feel that there is anything in Fielding policy that discourages collaborative learning?	<p>I mean the thing that discourages collaborative learning is precious [phonetic]. And collaborative learning isn't for everyone and it's quite important that we maintain the self directed nature of our program because if we have students. And we do have students that come here to work independently. And right now Fielding's policy and the school of HOD's policy still support that student directiveness, that it's up to you to figure out the best way for you to learn. And so that actually discourages collaboration because we don't force it. And if we have policies that required collaborative learning, I think that would be a step backwards because it would deny a key part of the self directed philosophy.</p>
Satisfaction w collaborative activities on a scale of 1-5.	<p>I'm going to give two different answers because again they're two different perspectives. From a realistic perspective as an administrator, I'm very satisfied and it would be very close to a five. And that is because as an administrator I strongly feel that...so it would probably be a four point five...I strongly feel that the changes that are coming about are evolutionary and that if there are unintended consequences for this kind of environment to have strong shifts from one approach to another.</p> <p>And I actually think that our slow progress, that's very diverse has a real advantage in that the changes that come about are pretty deep and still allow for flexibility among students. And that we don't become autocratic and domineering and imposing because our learning model is not about imposing.</p> <p>On another personal level, I think that the collaborative learning, I would love to be able to have more face-to-face collaboration. And so I think being an online environment hampers the kind of face-to-face work that people engage in just because... There's a great area of study now called geographic sociology that things are different when you're in the same geographic space.</p>
What is your preference, to work individually or	Both

collaboratively?	
When did you begin to understand and trust these collaborative learning methods at Fielding?	At the [phonetic] faculty before I was using strong collaborative methods, stronger even than Fielding. I was using shared grades in collaborative methods. So there was nothing new here at all. So when did I begin? I began when I began working professionally and I began teaching in '89 and all my classes were very very collaborative. So there was nothing different here. Other than, I think the thing that was different at Fielding was that it allowed for non-collaborative learning.
Is there anything you would change or improve about the Fielding collaborative learning environment?	Yeah, I think that the piece that I would improve would be two fold. One would be more support for people who never meet face-to-face. Because it's harder for people when they don't come to session to be able to collaborate, they're isolated. And the other would be to pay closer attention to taking the results of the collaboration and having those available to students who want part of the collaborative, and this is something that we're also working on. It's kind of akin to if you're not part of the session, a way of having people who are not part of the session. By the same token some of the online collaborative work, they really do some really good things and I'd like to have a culture where there's also sharing developed. Or even if you weren't part of that online seminar, at the end of the online seminar, people could take out anything personal from the text that they didn't want shared but the rest of it would be shared in the online environment.
How do collaborative technologies help you in your program?	FELIX has the capacity or real time chat, virtual office allow I had one student who was from the United Arab Emirates and her entire dissertation was online. And we chatted once a week with Instant Messenger. Like I'm right now assessing with a group of three students who are doing work studies. And they're meeting like every two months face-to-face. They are engaged in email and then they have one meeting every week using Yahoo! Instant Messenger in which they're discussing their papers. And about every month or so I join them electronically using Instant Messenger.
How does your geographical location impact your learning process with Fielding?	I think that the collaborative learning, I would love to be able to have more face-to-face collaboration. And so I think being an online environment hampers the kind of face-to-face work that people engage in just because... There's a great area of study now called geographic sociology that things are different when you're in the same geographic space.
Which ICTs help to reduce the affect of distance on your PhD program?	Nothing replaces the face-to-face meeting, so before we can answer that question the face-to-face meetings are absolutely essential. I think that after that it really is dependent upon the student. And I think that in the faculty... Curiously I still think that the telephone and the conference calls that we're having are perhaps the most important for any collaborative work. People seem to crave the telephone. They can go online for a while and then they crave the telephone. Personally I found that my virtual office is particularly useful for students because they know that they can be present there and that I'm present there and so it's a little space.
What are the current shortcomings of ICT in reducing the affect of distance?	Oh I don't think it's the shortcomings of the technology. I think it's just people becoming used to, being able to work well electronically. So I don't see it as a shortcoming of the technology. I really don't. Because when we had a very rudimentary way of communicating together online we had powerful collaborative experiences online. And that was in 1994, one of our most powerful online learning experiences, from which Rena Palloff and Keith Pratt and several other people, whose profession now, they're at the top to the field in online learning, they're all part of

	<p>this. And it was not real time. It was asynchronous but very intense. And I think it's not the technology, it's the people.</p>
<p>If you could design an ideal ICT environment to aid your collaborative learning for your PhD, what would it look like?</p>	<p>I think what it would look like would be a place where much more of the important, where all of the important communication would occur on forums so that it would be preserved for people who are not present at the moment. And the email would be virtually extinguished. Our online masters program doesn't use email at all.</p> <p>For faculty right now to really keep up requires two or three hours a day of attending to email. Because email is the more responsive you are on email the more people send you emails. And so if you're a faculty working with 40 students plus all the other faculty plus the administrators, each student may want to get a response right away. And if you sent a response right away, then they will come back to you so it's this never-ending kind of a cycle. So it's the change, the changes most of all would be to do away with email or to use it very, very judiciously which we're not doing.</p>

QUESTION	SALIENT POINTS	THEME/ASPECT
<p>What would you improve?</p>	<p>More support for people who never meet face-to-face, because it's harder for people when they don't come to session to be able to collaborate, they're isolated. And to pay closer attention to taking the results of the collaboration and having those available to students who want part of the collaborative</p>	

Contact Type: Interview
Code: HOD-15F

Site: Fielding Winter session January 2005, Santa Barbara

Question	Information (Summarized)
<p>How does FELIX support learning individually and with others?</p>	<p>In many different ways. Everything from providing a kind of electronic campus, in terms of people using FELIX on an ongoing basis to see what's going on, to providing a way for faculty to access student records.</p> <p>A medium for us to do online seminars and, of course, a way for us to communicate with each other as work teams in a lot of ways.</p>
<p>To what extent do you Share literature?</p>	<p>The literatures for each one of the knowledge areas are posted in study guides, which are available on FELIX. And those are updated regularly, and then when we do the different knowledge areas, for some of them, we post additional readings, if we're doing some special version of a knowledge area.</p> <p>As for example, my colleague and I are offering a special version of globalization for a group of eight or 10 students that will be working in tandem in that area. And my colleague and I will be putting together an additional study guide that'll be posted online for those purposes.</p>
<p>To what extent do you Discuss literature you've read?</p>	<p>In the case of some of the regular online forums, there would be a combination of, sometimes we would begin an online seminar here in session with a face-to-face session and then continue online. In some cases, most or all of the interactions take place online.</p> <p>In other cases, some of the interactions are online and they're supplemented by, in the case of the certificate program that I'm offering now, with several other faculty. It's a combination of all three ways of being together.</p>

	Namely, we begin and end face-to-face. We have online resources and post online messages to each other within learning groups. And we have regular phone-in conversations. So we're using a combination of all those three different modes of learning.
To what extent do you Share data?	Well, it depends on what you mean by data sharing. Normally we wouldn't be doing research together. We'd be, you know, in collaborative learning with each other. So obviously, there's data sharing of the sort that the tracking records are posted online. And that's a way for administration to allow students to access the data about their grades and what's been recorded and for faculty access to that. But beyond that, I don't use it as sharing online.
To what extent do you Review each other's work?	In the learning groups for online learning, they are very much responding to each other and that's in reviewing each other's work. That's an important part of the learning file [phonetic] in any of the online seminars.
Are there specific technology improvements you would like to see in FELIX?	The question is how specific I could be. Certainly I'm not aware in detail of other software packages. I know that other programs use different kinds of software packages to structure learning. There are certainly some improvements that I would like to see over time. And they are electronic and FELIX and our way of being together electronically.
Have you used technologies to work with colleagues other than FELIX?	I am a consultant to the Kettering Foundation and the Kettering Foundation, like Fielding, is a distributed network across the country. And different work teams will have places on their electronic network to post shared messages and calendars and communications.
Familiar with "ICT"?	That's not a term that we've used here and that I'm particularly familiar with, no.
Which ICTs do you use in your PhD program?	Oh, we do not use videoconferencing in Fielding, but of course we certainly use phone, conference phone, FELIX and so forth. And you know that we use FELIX for the purposes of providing some full-text documents and mainly for reading lists. And for databases for administrative purposes, but not for others as I just mentioned. We don't use it for mass storage, or at least, I don't use it for that purpose. And neither do most people.
Does your PhD program involve shared knowledge creation activities?	Yes, and that's a large part of what the online seminars are, in many respects. The online seminars are a not particularly fancy version of classroom seminars. We would routinely post assignments for different weeks. We would routinely have online learning groups, where different people would be responding to each other within groups of five or six people, typically. And then as instructors, we would be dropping in on different discussions, commenting on students' comments. But the most important part of that, in terms of shared experience, is again the students basically dialoging with each other online in regard to their response to the readings that they've all done.
How does Fielding encourage collaboration?	There are a lot of variations to the collaboration, many of which are informal, in the sense that students are simply informally choosing other people who either have similar interests or are going through the program in a similar way. They frequently, for example, people who come into an orientation session together and are in the same anchor group, will choose to stay connected to each other as collaborative learning groups, in some sense, moving through the program. In some cases, they will be doing knowledge areas at the same time, some group with a couple of them and there's a lot of variability. Some

	<p>of those anchor groups stay together and stay in contact online throughout the entire program until actually subsequent to graduation. Others don't particularly gel and there's simply moribund pretty quickly. There's nobody regularly posting to us. But the informal groups that begin in anchor groups are really a fairly important part of the collaborative learning arrangements.</p> <p>There are others that we've encouraged through the student development team. There's a group of nine or 10 African-American women who have a self-constituted learning group, and part of that takes place online, in terms of very active support contact with each other. And part of that is a series of face-to-face meetings.</p>
Do you feel that there is anything in Fielding policy that discourages collaborative learning?	<p>I'm not sure that there's anything in the policy that discourages it. There are obstacles, rather than discouragements. Part of it is it's difficult for some students who would like to work with others to schedule ways in which they are collaborating with each other at a distance.</p> <p>So the very fact that the students are scattered all over the country and abroad tends to make it a little bit more difficult for collaborative learning to take place sometimes.</p>
Satisfaction w collaborative activities on a scale of 1-5.	3 or 3.5
What is your preference, to work individually or collaboratively?	<p>It depends entirely on how customized it is, and on the students' own preference. I think it's a very important thing to have both those. In terms of my preference, I really don't have one, and it depends upon what suits the students' needs best.</p> <p>I'm glad that they have the option of doing either of those things. And some students who choose never to work in collaborative groups and others that would, I think, do every part of their program collaboratively if they could.</p>
When did you begin to understand and trust these collaborative learning methods at Fielding?	<p>Fielding's always been more collaborative than most programs and traditional programs are. In terms of the trust part, but, you know, not trust, what I see it happening in a sense.</p> <p>I mean, I saw certain kinds of collaboration from the very beginning of the time that I was in Fielding. They were mainly at that point, collaborations that involved cluster groups that would meet together and support each other.</p>
Is there anything you would change or improve about the Fielding collaborative learning environment?	<p>I think that there are things that could be improved about it, in terms of the ease of access. For example, I can imagine ways of using Internet telephones as a way of adding a voice dimension to the online dimension and the print dimension.</p> <p>That's something that we've been trying to build in recently in the Scripture program that I've been doing this last year.</p>
How does your geographical location impact your learning process with Fielding?	<p>You know, first 15 years I was in the program, I was based in Manhattan. And that was in my offices in midtown Manhattan was the place where the clusters would meet. In that sense, because I was centrally located, that made it easier for the clusters to meet there. I don't know that where I am now in Connecticut, I'm not sure that where I am located physically is much of a factor either way. Like most of the Fielding faculty, I travel quite a bit and meet with at least half a dozen clusters around the country over the course of a year.</p> <p>So in the last six months, I've traveled to at least six different cities, in Portland and Santa Monica and Brussels and a couple of other places, Boston, and I've met with clusters in those places.</p>
Which ICTs help to reduce the affect of distance on your PhD	<p>Phones and FELIX for sure. And that's the extent of what's being used. And the other, as well, and that is phone conference calls. I haven't</p>

program?	talked about, we use phone conference calls much more routinely than we used to, both for teams and for occasional events like portfolio reviews.
If you could design an ideal ICT environment to aid your collaborative learning for your PhD, what would it look like?	<p>It would look like what we have. The FELIX interface would itself be more visual and in that sense, more user friendly, rather than a whole series of different to print labels. It would allow the reader access of video clips, for example.</p> <p>It would contain certain sorts of things that would amount to many lectures. It would make us more present on FELIX as individuals. There have been no faces on FELIX as things stand now.</p> <p>And it's a bit too static and a bit old-fashioned, in the sense that there are a lot of words and a lot of places where you click rather than using intuitively obvious how to find what's there.</p> <p>They would make FELIX a more readily accessible site, a warmer site, more a human site. And more of a reflection of what it's actually like when we're together. It's clear that both it's simply awkward to find some of the things that are there.</p> <p>The FELIX site doesn't use icons and other visual cues in a way that would make it easier to use. And as I said, the very fact that there isn't the presence of individuals or videos on that makes it a bit old-fashioned and a bit mechanical.</p>
How do you contract (student / faculty) on a knowledge area?	<p>In most cases, the students that are contracting with me are students that I have met either at an OPS or in a national session. And in fact, a lot of those initial conversations take place at national sessions. In some cases, students will be calling or emailing, but we already would have met each other in some face-to-face context.</p> <p>I mean, the program's large enough so that there's some students that I wouldn't necessarily know to see them. They, in most cases, have seen me or at least have face recognition of me.</p>

Contact Type: Interview
Code: PSY-1S

Site: Fielding Winter session January 2005, Santa Barbara

Question	Information (Summarized)
How does FELIX support learning individually and with others?	It's used for group seminars. Everybody posts their papers and then people respond to those papers and FELIX is also useful for going to the library via the Internet. I've used it for downloading articles, journal articles and even getting a library card and reading books on the Internet. And you can even print pages – it's really amazing. And you can do it all from your house.
To what extent do you Share literature?	Well in the FELIX environment usually we have to write a commentary paper back to somebody after they've posted their paper. And that's usually two or three pages of you know intelligent critique or commentary.
To what extent do you Share data?	I haven't done that, but the people that are doing my PSDSS and the stats classes. (referring to original collective data)
Are there specific technology improvements you would like to see in FELIX?	I don't know. I think it works fine but you know I'm not that expert to say that there should be improvements you know, or what they would be.
Have you used tech. to work with colleagues other than FELIX?	Email
Familiar with "ICT"?	I just am learning about that now. Not too much of the advanced, more of the mid-range I would say.
Which ICTs do you use in your	Internet, email, FELIX, the web. Webber has a lot of information. I've

PhD program?	only used it for one thing but I've heard you can use it for getting a list of the classes, confirming your classes for winter session for example, and getting a list of the students that are going to be in that class, in case you want contact them, car pool, whatever. And I've used the digital libraries and databases a lot.
How would you define advances in ICT?	I know my PDA is going to be passé pretty soon and that's all going to be telephone actually but via Bluetooth I can actually get you know access to the Internet to my bio in my office which doesn't have any Internet connection. Things are probably going to get smaller and smaller, and lighter and more portable and more communicative.
Does your PhD program involve shared knowledge creation activities?	I think that's one of the new purposes. I'm not sure I've actually experienced that yet. Maybe it will happen more in the advanced classes.
What activities do you do with other PhD students?	We're doing a group KA, it's going to be assessed at my house. And I do cluster group meetings and FELIX seminars and winter, well I went to this winter session, summer session, there were group meetings where we presented materials that we had already gathered.
How does Fielding encourage collaboration?	The cluster groups or the group KAs really encourage you to get a group together and not try to do all the KAs on your own. And they're very flexible about how those groups are formed you know. Any person can form a group as long as they can get a professor to assess the group and enough members to agree to do the work. So that's, and that's been my experience, that they really encourage that as a not so much... I think they encourage also FELIX that it's not really that critical.
How do you contract (student / faculty) on a knowledge area?	I haven't done it personally but one person in our group has done that. She went around and got several people in on her cluster group to agree and picked a theory and then talked to a professor. I don't know how she chose that professor, but she interviewed her and asked her to do the assessments, when we were at summer session and she's doing it now in winter, the assessment. So she got a sample contract and sent it out by email to the participants and all the participants modified the sample contract to fit what they were going to do. Normally I think it would be emailed and then the professor would then send those contracts after signing them, to Fielding and then I don't know what happens.
Do you feel there is anything in Fielding policy that discourages collaborative learning?	No, not really.
Satisfaction w collaborative activities on a scale of 1-5.	4. Depends on the group.
What is your preference, to work individually or collaboratively?	Before Fielding I really had been in more of traditional program where you did your own work and so I was used to that. And it probably still would be my personal preference. But it's much more enriching to work in a group.
When did you begin to understand and trust these collaborative learning methods at Fielding?	Probably in cluster. I watched a student in the group make up a kind of a group seminar. Another person in our group has published a couple of books, and his dissertation will probably end up being a book. I watched that, and I thought, "Oh that's pretty good."
Is there anything you would change or improve about the Fielding collaborative learning environment?	Well, no, I can't make any suggestions about that. It's my first experience with such a lot of collaboration. You know if they were forcing you to be in such and such a group that would be different and I'd probably have a lot of complaints but you can form your own groups.
How does your geographical	I just live Redondo Beach so it's not very impacting. It's only two

location impact your learning process with Fielding?	hours to Santa Barbara, and I don't have to come to Santa Barbara that often. There's someone else who lives in my district and we even carpool.
Which ICTs help to reduce the affect of distance on your program?	The FELIX, the Webber. I haven't done conferencing via the Internet yet but I think that would probably be very interesting. The digital libraries definitely and email.
What are the current shortcomings of ICT in reducing the affect of distance?	Well you know you just don't have the person in front of you. You don't get all of the visuals, you don't get the aura, you know the atmosphere that's created by the person, maybe the intensity of their interest or lack thereof. You know you don't get that. You just get whatever they're writing. You can only read one layer.
If you could design an ideal ICT environment to aid your collaborative learning for your PhD, what would it look like?	You'd be able to see the person that you'd be talking to. And have a greater, you know sometimes when you're just looking at a screen you can't really... I work with real books. I always have lots of books around, and that's difficult to do with a computer. You know, you can't keep enough stuff, enough pages, you know like I'd like it to be able to have you know, this book opens at this page and this book opens at this page you know. So that you can amalgamate more. You know maybe support your argument or whatever, from different sources without having to go back and forth. Maybe it's just my lack of facility with a computer, but, you know I'd like it to be able to do that a little more easily. I know you can do it singly but I mean at the same time.

Contact Type: Interview
Code: PSY-2S

Site: Fielding Winter session January 2005, Santa Barbara

1. What were the main issues or themes that struck you in this contact?

Also you spend too much time learning, which happened to me, learning how to use a new technologies, that the purpose of what you use them for gets subsumed, and so you don't have enough time to do the actual work that you're supposed to be doing because you spend so much time trying to learn how to do the learning

Question	Information (Summarized)
How does FELIX support learning individually and with others?	it helps us by sort of creating a central area of inquiry and a central area of depositing information and also receiving information for the program. So in some ways, it's sort of the brain of the program. And yeah, it underscores pretty much everything else that we do. So most of the forms that we need are in fact in there. And it gives you directions to the library and other kinds of assistance. It has a lot of your confidential information also, so you got a record of how you're doing. It's also in FELIX. And you get access to libraries through there as well. And through sessions and timing of the sessions. And so basically, it becomes the sort of central connector for you as a student with the overall university community. And I've gone in there also to find connections with other people, other students, other staff. I can get their email address, I can even see a picture of them to know who they are, and to remember who they were. And even if I only have first names, I can figure it out and find a person. So it keeps me in contact with them if I really need to do so.
To what extent do you Share literature?	I haven't done much of that because I haven't done a seminar in FELIX. But if I was to do a FELIX seminar, I know for sure I would be able to sort of share those references with other students
To what extent do you Discuss literature you've read?	I haven't done that in the FELIX environment because I haven't taken a FELIX seminar as yet
Are there specific technology	I think understand FELIX, it's a long process of experiencing it and

improvements you would like to see in FELIX?	<p>having problems and getting help and realizing that certain things are available to you. And also you don't know you need to use it until it's there.</p> <p>I think having sort of a better tutorial will help, but it's only limited amount of help because unless you know what you want to know, or unless you have some experience in using it, it's hard to really sort of appreciate it or to know the kind of questions you need to know.</p> <p>But I would suggest is that you almost need two kinds of tutorials. One, just the beginning, just to start, to know where to find things, just most generally. And then you need to have another level, after you've been using it for a while, a more advanced level, to kind of understand some of the smaller pieces</p>
Have you used technologies to work with colleagues other than FELIX?	Yes, I did use some Yahoo , messanging, webcam, End note tutorials for Collaboration with one other student and also a professor. WebEX
Familiar with "ICT"?	Sounds familiar
Which ICTs do you use in your PhD program?	I would say it looks like pretty much all of them. So I use the advanced technology. I think WebEx would fit into there. And connecting with the other people pretty much all over the globe, all over North America at least, because I live in Canada and I speak to people who live down in California. And I use that for a lot of my learning, internet, videoconferencing, phone, fax
How would you define advances in ICT?	<p>I would describe them as they're growing faster and are kind of advantageous in many ways. That's the good side of it. You can actually can speed up the work I'm doing.</p> <p>we have more different technologies than we had before, new ways of doing things and more people are using them. you have to keep up with what's been going on in the technological advancement. And you may not know about some new ways of things coming out, which can slow you down relative to other people, who are moving on faster. Also you spend too much time learning, which happened to me, learning how to use a new technologies, that the purpose of what you use them for gets subsumed, and so you don't have enough time to do the actual work that you're supposed to be doing because you spend so much time trying to learn how to do So mainly sometimes as a group we may do a KA as a group the learning</p>
Does your PhD program involve shared knowledge creation activities?	I think there is a lot of shared knowledge and opportunities to be creative, like when I do a virtual cluster and we meet as a group, it does involve us discussing different plans and what we're all doing and we get ideas from each other about things that we could do.
What activities do you do with other PhD students?	We do networking with each other, but often it involves our work itself. So if we want to know about a particular tool, I have done that. Or if I want a referral of the kind of therapies, I will ask someone else if they know someone else who does that work, in whatever area it is, communicate mostly by email, Because it's cheaper to do email, then you are more clear about your thoughts and about what you're trying to go for. On the phone, it can get less clear, more muddy, so
How does Fielding encourage collaboration?	I think the clusters. Having clusters really encourages that. I mean people get a chance to meet together. Having special sessions also do that because then you get to meet good people from various parts of North America. And so having sessions really is an opportunity for people to come together to discuss what they're doing, you know? As they have in cluster meetings, it's really good because then people from the area, or in my case, a virtual cluster- which some people who don't have an area because they're too far away from any area. We could get

	together and also discuss what we are doing. So I think those are really good ways. The other way is having FELIX. Because FELIX has all the emails of all the people are on there, so then you can contact and information, you can get in there and find out who is where and then talk to them
Do you feel that there is anything in Fielding policy that discourages collaborative learning?	There's nothing that would stop you from being able to collaborate. As a matter of fact, most of what is done is really geared to encouraging people to work on things together and from the time when we got our orientation, that was emphasized, especially to keep us on track.
Satisfaction w collaborative activities on a scale of 1-5.	2.5 because I don't feel like I have enough time to do all the collaboration that would be helpful to me. I think it is time-consuming. And it's not like people don't have the opportunities; there's lots of opportunities and it's all available. But I don't have the time. [Unintelligible] emails me to say, "Would you like to join this group that we're doing all this work?" So it's good information, but I find I don't have the time to spend to assess, to see if all these things are worth it for me on my own plan, if it's going to be helpful. So I like the fact that it's available, I can use it. But do I use it to the fullest amount? No, because to do collaboration, it takes time to do it
What is your preference, to work individually or collaboratively?	I'm split in that sense. When I'm learning things, I like to learn in a collaborative environment. But what I need to do, but because I need the flexibility, therefore the things that I need to show my work. I like to do that by myself so that nobody keeps me back, but also I don't feel guilty about keeping somebody else back. So if we had to do a joint project, and my part was not done, then I'd feel like I'm keeping others back and I feel really guilty about it. You know, I feel somebody's keeping me back, I might be feeling frustrated. So I like to learn together to discuss things together, and I'm very social.
When did you begin to understand and trust these collaborative learning methods at Fielding?	I have learnt more about them now than I did before. It's a long learning curve. It's a very long learning curve. And for me, I think longer than most people. I think more people get it faster than I do. Maybe because I haven't had enough time to sort of devote to learning the model. But for me, it's been a long learning curve. And so it took me a long time to learn it. So right now, I'm approaching my one-year anniversary, and I wish I knew things earlier. But I think it was a very intensive orientation
How does your geographical location impact your learning process with Fielding?	I don't think it does at all, not very much because the model, especially the way I need to work with it, very little. Very little. Yeah, I think
Which ICTs help to reduce the affect of distance on your PhD program?	Oh, I think emails more than anything else reduces it because then I have direct contact, my profs get back to me right away. The helpdesk gets back to me very fast, you know? They're faster than I could be to generate the question. They would come back with answers right away. They're really efficient
What are the current short-comings of ICT in reducing the affect of distance?	I think that because it's so specific that you only learn pretty much what you ask. Whereas if you had just dialog, then there's a lot of basic things that you might think extraneous becomes more pointed. So for example, I signed up for a course for the last three days, and I realized that I didn't have enough prerequisites for them. But it was only when I was talking to one of my other colleagues in vivo about what I was doing, then she said to me, "Oh, before you sign up for that, don't you have to do all these other things?" But I didn't know that and then so I had to redo everything that I was

	doing. And that's because we have a casual conversation. But there was no part of the technology that was actually telling me that this was wrong.
If you could design an ideal ICT environment to aid your collaborative learning for your PhD, what would it look like?	I think it would be a more progressive technology system, in the sense that it would learn with you as you learn. So it would start up at the most basic level, it would have a heavy tutorial path to it that you only learn what you can manage at one point. And as your needs increase, it will sort of in a progressive, it would also be able to give you a higher level of learning So it will keep pace with your learning curve because otherwise they jam a lot of information, what they did in orientation, I didn't have enough concepts to grasp what they were telling me

Contact Type: Interview
Code: PSY-3S

Site: Fielding Winter session January 2005, Santa Barbara

Question	Information (Summarized)
How does FELIX support learning individually and with others?	Individually to feedback through interaction which is certainly in a group dynamic process. It provides opportunities for enrichment, for – Enrichment would, academically and also socially in a lot of different ways. Academically because you are presenting your work but also leading the work of others. There are various different stages in the program for various schools of thought, interest levels, you get a unique aspect. Because in most traditional programs you're going to be dealing with someone, or others who are very close in proximity and timeline to where you are in the program. I just finished a seminar with people who have been here five years, are writing dissertations. So what I can gain from them, is rich in variety of different ways. You know just look at [unintelligible] might live in the country can offer that.
To what extent do you Share literature?	I'm in my third FELIX seminar right now and starting the fourth one, so my exposure might be a little bit more narrow than others. But I think it's significant first of all because when you're posting a paper, you're posting one as a bibliography showing 70, 10, different resources. When you do the feedback then you're going to have someone who goes, "Oh yeah, I read about that, have you considered reading...?" And I've had a lot of that. I see a lot of that happening. Of sharing of different articles, of different books, just a variety of different things.
To what extent do you Share data?	Not in my experience. But that would be more of a research type thing. And these have not been research-oriented, these are more knowledge area, core area assessments and writing on topics.
To what extent do you Review each other's work?	Typically we post in rich text format so that no matter what kind of computer you are using you can open it. It's a word document. You can go read it on line and respond that way. I'm very visual, [unintelligible] computer, but I print them off.
Are there specific technology improvements you would like to see in FELIX?	Webcam. I think that it would offer quite a bit. We were just discussing this in my anchor group this morning. There's a dynamic. You wonder about that give and take, propriety and different things when you are on a web-based seminar and even though you can click on the person's name and see a picture of them if there's one available, "I've got a name with that face". But I know that in my own responses and my reading of other people's work, just if it was someone I was at OPS with, if it is someone that I had met, it gives it a personal human feel. And also a recognition of not necessarily chose your words carefully, or being careful and honoring and a respect of that other person. It's just times comments come across that you go, "Did you really

	consider another person was going to read that. You know you're kind of spouting off [phonetic] here and this is affecting people." Webcam is about as close to real time as you can get. You see movement. You're going, "You know, I'm talking to a real person here." This is a person that I'm building a relationship with and I value that. And I think that it would enrich in a lot of ways the experience, increased levels of safety and what you do say and also in your awareness of what you're saying and how you might be saying it. What that impact might be.
Have you used technologies to work with colleagues other than FELIX?	I have participated in an online reading group with the psychology of the [unintelligible], psychology is what it used to be called. And that was one of my first experiences outside the normal using email and communicating with professors and different things in that way in a traditional graduate program. Or accessing things online. But that would be actually people across the globe. It just wasn't in the US. But we were communicating regarding the works of Marian Tolpin and it was wonderful.
Familiar with "ICT"?	No
Which ICTs do you use in your PhD program?	Okay check physical layer. Mid-range physical. Advanced logical, I'm not really sure. I mean we're talking about [unintelligible] operating systems, that's something that's on all computers [phonetic] or [unintelligible] in that capacity then that would obviously be one. Mid-range logical. Plain old telephone system. That I have used in my program. I have done that. Web-based collaborative environments, certainly that would be one in the collaborative advanced. Mid-collaborative – obviously got FELIX and low tech [unintelligible] yes. Mid-range content, low tech content.
How would you define advances in ICT?	Yeah, to mail, to telegraph, to good old POTS. To cellular. You know even then, when we all started with our cell phones they were this big you know and now they're this big and they fold. To Internet from dialup to broadband to cable. Mine is cable. Once I went from dialup to cable folks said, "Oh you'll never go back." And I went, "Yeah, we'll see, you know, am I going to continue paying this amount of money? Okay, I'll never go back." I enjoy it way too much. I was doing something recently, what was it? I had used a SLR camera for years, photography is my hobby. I recently got digital camera. And I was waiting, like I had taken a picture and I was waiting for it to register so that I could take another one. I had to wait two seconds. And I'm sitting there going, "Come on." And I'm thinking, "Okay, three weeks ago you would have waited three days to get these pictures back on film and now you're frustrated about waiting three seconds for the prompts to come up again." So it's something we've become very accustomed to and do not give up easily once we have it.
Does your PhD program involve shared knowledge creation activities?	I think that anytime...if I'm understanding the [unintelligible] shared knowledge creation is saying... anytime you are creating a knowledge base and when you have more than one person, it becomes a shared knowledge creation. We contribute to each other's learning from the things that we have studied so absolutely. I mean in a variety of different ways.
What activities do you do with other PhD students?	Academic and social actually. Academic in that we do group seminars, we do FELIX, just interacting over discussion forum. Here my anchor group from OPS, we all went to dinner last night. My cluster group because that's another avenue where we do research projects, those are shared knowledge creations. Speakers, discussions, dissertation advising, all of those are ways in which we interact and kind of co-create that knowledge base.

<p>How does Fielding encourage collaboration?</p>	<p>My anchor group has two from California, one from Wisconsin and one from Ohio and myself from Michigan. We are a group that the basis is literally an anchoring. It's a reference point to give stability and connection and relationship and kind of getting you through a time that's really very, very intense. When you first start work you have so much information that you are trying to process. You then go home and start into your studies and then you have a geographic cluster group. Those are individuals you meet with once a month. Whatever that time is that's designated and you do some sort of enrichment activity within that. It might be a speaker, research, dissertation, final oral review, presenting dissertation material. And that group is meant to keep you connected and to keep you from becoming isolated. Because this is a program that you could become isolated in if you're not careful. Because you don't have that face-to-face contact, you're not sitting in a classroom and it's very self-elected.</p>
<p>Do you feel that there is anything in Fielding policy that discourages collaborative learning?</p>	<p>Not that I am aware of within the policy. But certainly by professors, the way they formulate. Some, their method is they do not interact during a seminar, they give minimal feedback until the end. Could they offer more? And would that be more collaborative? And would we learn from that? In my opinion, yes. And I've had both now. And the one that I'm in right now, he just kind of says, "Okay, these are thoughts on altruism. Don't feel that you have to respond to them, it's just stuff that's out there for you to think about." And I go, "Man, I'm glad he said that." Because then I go here and here. It's another person and they can offer more.</p> <p>But that's personal preference. As far as I know policy... Actually one of the things they told us at OPS, feel free [unintelligible]. You can ask for anything and you can create as far as the limits of your imagination will take you. So if you can't find the collaboration in one place I think you can find it in another. It's just a matter of where you're willing to work and how hard.</p>
<p>Satisfaction w collaborative activities on a scale of 1-5.</p>	<p>4</p>
<p>What is your preference, to work individually or collaboratively?</p>	<p>At this moment, collaboratively. The idea of developing individual KAs and assessment contacts was a bit intimidating. I like the accountability. Because the other people in the group are counting on you to post on time and to do it in a way that's thoughtful and responsible and it keeps you on time schedule. If I say, "I'm going to be doing individual contracts and I'll have it done in three months." Two and a half months down the line I might be going, "Oh my gosh that's due in three weeks." As opposed to I can just post this Friday, and by the next week, I need to post replies. I like the feedback.</p>
<p>When did you begin to understand and trust these collaborative learning methods at Fielding?</p>	<p>Probably about two months into the program. It was probably about that long before I felt that I had a good handle on where to look. Because you'll get just a bunch of different links to links to links to links. Okay, look under that, look under this, and it's just hard to find your way and navigate through the system. And that first couple of months is, "Oh my gosh what have I gotten myself into?" And then it becomes very natural. And I had to guide my husband through something over the phone once and he was like, "I don't know where to go." And it's just a good memory [phonetic]. 360 days ago I was there. It's a pretty quick progression for me. My understanding is... usually it's like that first six months to really get into it.</p>
<p>Is there anything you would change or improve about the Fielding collaborative learning</p>	<p>Yeah, I just don't know how. Change the registration process on some of them. But I don't know that I have a good solution to that. I don't know. Because I have one that I just registered for, but she said, "This</p>

environment?	is when it's starting, this is when it goes out, email me if you're interested." Then you get the message, you can email. If you're only getting on FELIX every five days or something you might miss that opportunity. If you get on it and go, "Okay, this open to me in three weeks at 9 am" then yeah, you're probably going to be there at that time. If it's really important to you. But I almost wonder if it would encourage students to be on there more frequently if it wasn't, "You've got to be here now." But if you're constantly checking you think, "Oh let's just pick up what I want, I'll reply to it now." You would check much more frequently were that the case.
How does your geographical location impact your learning process with Fielding?	In my case it could affect parts such as practical [phonetic], sites [phonetic] and different things like that. Academically, I live in a little academic hub. I mean there's a lot of universities. I have access to great materials and a really large city that's kind of growing medically and in a lot of different avenues of therapy for me to do this type of thing. So people who live in remote areas, really struggle sometimes with that, and that's not a problem I have. It's really pretty ideal.
Which ICTs help to reduce the affect of distance on your PhD program?	Probably FELIX
What are the current shortcomings of ICT in reducing the affect of distance?	Webcams could help reduce that. Nothing else that I can think of right up here. There could be a ton of things out there of which I am just totally not aware.
If you could design an ideal ICT environment to aid your collaborative learning for your PhD, what would it look like?	It would be holographic. You could have a room where it's projected imaging and it would be real time in a lot of ways. Interaction. I mean if you could truly have something like that that was real time that would be incredibly cool. Of course you'd have time constraints with time zones and such, but still. You probably wouldn't come to seminar in your pajamas but you know once you just didn't care.

Contact Type: Interview
Code: PSY-4S

Site: Fielding Winter session January 2005, Santa Barbara

Question	Information (Summarized)
How does FELIX support learning individually and with others?	FELIX itself as a system? Of course there's a whole library on FELIX, and that's one major piece of my studies. Although I have not yet fully conquered the system, it's complex, and I can Google faster than I can go through the library services still, as a new person. The collaborative learning though I've, I'm involved in three courses, and two of them are groups. One of 11 others, I'm one of 11 and the second one I think there are eight of us. And although we meet on WebEx for classes we have very active forums as you can imagine with that many people. We have lots and lots of discussion.
To what extent do you Discuss literature you've read?	We have lots and lots of discussion.
Are there specific technology improvements you would like to see in FELIX?	could be made much more user friendly. I find it a bit laborious. And I'm in a net-based company myself that I started and had to go through designing software, and I find FELIX very very rich as an environment but overly complicated to use. I'd like to be able to push a button on FELIX and like a telephone ringing or something, if that person's in their office, that I...if they come up for me and I see them.
Have you used technologies to work with colleagues other than	I've participated in conference calls, video conferences, for instance, with people in Africa or people in Asia. And you know you get 10

FELIX?	minutes, and it's a satellite, it goes through a fog, and I don't know, you get completely like this, and it's not very, very good.
Familiar with "ICT"?	: I haven't heard that buzzword explicitly no.
Which ICTs do you use in your PhD program?	WebEX, and some of us have video cameras so there is a visual component. Although that's in a statistics class, and mostly we've only used the video component for the lecture, for the faculty member. But she has presented combinations of slides as well as a Socratic kind of method. We were all there and she was asking us questions to answer. And at one point she will take over all of our computers to demonstrate, do demonstrations herself of what we would do on our own computer. But our cursor is moving from her so. TCP/IP, the web. Cellular technologies is that my phone? Okay, sure, cell phone, fax, you know when we use WebEx we're not only on the computer, we're also on the phone with a conference call. That's where the voice comes through.
How would you define advances in ICT?	Well, more wireless, more seamless. more interconnection between phone, fax, computer It would be nice to send a fax from my phone. Digital recordings would be good
Does your PhD program involve shared knowledge creation activities?	In my understanding of shared knowledge, I guess the term is jigsaw. Could it be that you have people who are themselves teaching by virtue of investigating an area, and I'm trying to make sense of it and coming back to the group and sharing it? And we all learn from them instead of from a single source.
What activities do you do with other PhD students?	This kind of group assessment, as it's called, the knowledge area assessment, we do it together. And I've noticed that our first group has spun off already into two or three other directions on or on [phonetic] without anything that's counting for credit or involving the faculty. We've agreed to share our papers, written on any topic of media and set up a separate forum or intend to set up a separate forum while we're here this week to do that. One of us has a server, access to a big server, and he's already created a list or kind of single source email address that we're all using. And people use that. I must get every day two or three different things that people want to share that they've seen in the press or some other magazine, they found on the Internet or something. So we've, I've got parallel things going outside of FELIX with my fellow students. Some of whom I've never met, yet.
How does Fielding encourage collaboration?	Well one of the first things I noticed, there are a lot of courses being given team teaching, in team-teaching mode. I don't know about your universities experience, but that was pretty unusual for the ones I attended. Just for two people to even know what they were each doing, let alone to collaborate in teaching was pretty, pretty something. They do try to inspire this feel of community, and I've participated in a lot of it. But I know that it's going on, and it makes me feel comfortable. The community meetings here, the faculty thing too, a retiring member, you know, it's more like summer camp or something.
Do you feel that there is anything in Fielding policy that discourages collaborative learning?	Haven't found it yet
Satisfaction w collaborative activities on a scale of 1-5.	Five is high, but I can give it the highest.
What is your preference, to	I'm drawn towards collaborative work. But I also appreciate some time

work individually or collaboratively?	on my own, doing some of my own work as well, a mix. But I'd be weighted towards the collaborative.
When did you begin to understand and trust these collaborative learning methods at Fielding?	In the beginning. When we were inducted as a group a new group in the OPS in September. That's the launching pad. Because I'm only in the third cohort [phonetic] I think, media psychology students and there were I think 14 of us starting off. The faculty member, Bernie Luskin, who created the program, did absolutely everything he could to make us feel low stress that we're all in it together. Social events. We had another faculty member saying that she didn't want to answer any questions herself; she wanted us to work with another student. We could come to her office hours online, but she would not answer explicit questions, she would only turn us back so we'd better work with each other before coming. It was things like that you pick up clues.
Is there anything you would change or improve about the Fielding collaborative learning environment?	The search and navigation in FELIX. Also I'm Mac person. I would put FELIX on a Mac so fast that you couldn't blink. I guess that's one very controversial debate I guess that does go on in Fielding. When I came in with my iBook expecting, because it had been on the application you know, this is what you need if you're going to apply with this school. And my little iBook sure did measure up. It did, but when I came, I was immediately given several messages that you better find Windows. right
How do collaborative technologies help you in your program?	Certainly the WebEx. It's still a very stilted format. But it does make you feel connected. We use email a lot, which is, you know, kind of low tech, but still in terms of connection that's great
How does your geographical location impact your learning process with Fielding?	I'm in Washington DC which is an area where I don't have a problem finding anything in terms of connection. But the cluster group idea I am missing, and probably that goes back to your last question. And because of my location there is a cluster group you know about those? In Baltimore and one in North Carolina. But even going to Baltimore is a bit of a slog for me. Cluster groups though are really only for the Psych people and the Media Psych people. We're talking this time about studying as a virtual cluster, which would be, really be moving any kind of problem for my geographic location. And I would really like that as well
Which ICTs help to reduce the affect of distance on your PhD program?	We use WebEX, we call it attending class, and some of us have video cameras so there is a visual component. Although that's in a statistics class, and mostly we've only used the video component for the lecture, for the faculty member. But she has presented combinations of slides as well as a Socratic kind of method. We were all there and she was asking us questions to answer. And at one point she will take over all of our computers to demonstrate, do demonstrations herself of what we would do on our own computer. But our cursor is moving from her so.
What are the current shortcomings of ICT in reducing the affect of distance?	Speed for one. If I think of the FELIX network, for example, I find it again cumbersome that I have to go through step to step to step. I must have to do three unnecessary steps to get where I'm going. And I would like to go straight from there to the library without having to go back and back and back, and so it's clumsy that way. But I guess seamlessness could also mean more interconnection between phone, fax, computer.
If you could design an ideal ICT environment to aid your collaborative learning for your PhD, what would it look like?	I would like to be coming to a screen. I'm using my computer all the time, to the point where my eyes are burning out of my head. That's one of my big problems with the PhD program is the amount of screen time for me has gone up exponentially. And again more seamlessness would help with that. I don't have to keep changing my screen. If my

	screen had, when I came to FELIX, you know, a button for library and a button... I don't know what I'm describing exactly. I'm not being very articulate, but I still, I feel like I'm coming to a sloppy desk every time I come to FELIX. And it ought to be arranged better somehow. I'd like to see the face of the person who I'm engaging with.
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Contact Type: Interview
Code: PSY-5S

Site: Fielding Winter session January 2005, Santa Barbara

1. What were the main issues or themes that struck you in this contact?

I certainly feel like everyone at Fielding is very willing to work with you. You just need to make clear what you need. So when I get going further with my dissertation and my topic, I need to put my feelers out and say, "This is what I require from you." And then almost 10 times out of 10 faculty and friends and everyone has responded wonderfully

Question	Information (Summarized)
How does FELIX support learning individually and with others?	that's pretty much the essence of what we do is just discuss the literature. I would actually say back to the first question, that's probably what FELIX is, is a forum for discussing the literature and coming to conclusions about what is good about it, what is bad about it, and what needs to be furthered. I certainly feel like everyone at Fielding is very willing to work with you. You just need to make clear what you need. So when I get going further with my dissertation and my topic, I need to put my feelers out and say, "This is what I require from you." And then almost 10 times out of 10 faculty and friends and everyone has responded wonderfully
To what extent do you Share literature?	that's pretty much the essence of what we do is just discuss the literature. I would actually say back to the first question, that's probably what FELIX is, is a forum for discussing the literature and coming to conclusions about what is good about it, what is bad about it, and what needs to be furthered.
To what extent do you Share data?	That's how I've done most of my classes in the group forums
Are there specific technology improvements you would like to see in FELIX?	None that come immediately to me. I think they do a great job of updating, especially like servers that we have access to. FELIX itself the format [phonetic] I think is fine.
Have you used technologies to work with colleagues other than FELIX?	Certainly yes, Email, database searching, like Google. Even if I'm like getting ready to like start a paper, just kind of to get a feel for what popular culture feels about things
Familiar with "ICT"?	Not familiar with the term, until today, but now I that know what it means, considers himself familiar with it.
Which ICTs do you use in your PhD program?	FELIX that already talked about, has this education services on here. Digital libraries and databases we spoke about. Mass storage, like the disk drives I definitely use. I've done videoconferencing. I use phone and fax. And I've guess that would be it.
How would you define advances in ICT?	I would define advances in ICT as furthering ways of communicating and learning new knowledge in the world of information
Does your PhD program involve shared knowledge creation activities?	I think with the shared knowledge piece, especially since the population that comes to Fielding are people that have been within the field themselves for some time that the shared knowledge comes from their expertise and the faculty's expertise, and then each individual student's piece. That becomes a shared knowledge that we all learn from
What activities do you do with other PhD students?	I just try and enjoy them and I'm interested in how they view life and just find them enriching in life and in general. I don't think I'm in [phonetic] my cluster as much as I should. But especially at national sessions, and even some of the research [unintelligible] sessions, it's

	<p>just a great time to get a bunch of people that are like-minded together and throw around some ideas and just enjoy each other's company. And at Fielding there's a lot of people that are very enjoyable. So that's a good time.</p>
<p>How does Fielding encourage collaboration?</p>	<p>one thing is certainly with instances such as these where we can come to sessions or get involved online with other people's research, and I think that Fielding does a good job of making it feel like there's a camaraderie piece, that we want to help each other out. And that's definitely a good support system.</p> <p>And even just with knowing who has sort of pioneered practicum sites, or internship sites, they do a good job of allowing that kind of camaraderie and you know getting others into those positions with that.</p>
<p>Do you feel that there is anything in Fielding policy that discourages collaborative learning?</p>	<p>No</p>
<p>Satisfaction w collaborative activities on a scale of 1-5.</p>	<p>Four. The one point difference is sort of based on the fact that I've done mostly group KAs up until this point, and sometimes there are some issues that come up with different kinds of individuals being involved in a group KA when you don't know everybody. And you don't know their writing style, you don't know if their papers are going to be in on time, you don't know if life is going happen, and it just does and that's fine. So that would be the one.</p> <p>But also the one because I'm coming on dissertation. And the collaborative piece is harder to get rolling from what I'm feeling like. And I'm really needing to get my feelers out to some faculty and some support systems to help me stay on top with the dissertation piece. So there's so many pieces to Fielding, clinical, research, academic, and each one's different</p>
<p>What is your preference, to work individually or collaboratively?</p>	<p>Collaboratively</p>
<p>When did you begin to understand and trust these collaborative learning methods at Fielding?</p>	<p>Quite soon after my OPS in March of '02, because I had a wonderful anchor group. I was extremely fortunate. I've gone through a number of my classes with a handful of those people from the anchor group. There was six of us and for the majority of my classes, three or four of us, or even five at times have been going through classes together. Which is just awesome, because then it isn't up on you to always figure out what faculty member you're going to try and assess with, and it's not always up to you to have to go and find the faculty member, it's somebody else's turn. And plus, I will always preach that the group KAs are the ones where you learn the most, because you're not only getting faculty input, pretty much just grading your own individual work, you're getting input from all of these extremely experienced and intelligent people.</p>
<p>Is there anything you would change or improve about the Fielding collaborative learning environment?</p>	<p>Fielding collaborative environment. Collaborative is such a broad word. But I wouldn't mind and I'm one of the, you know this is an issue at Fielding, I wouldn't mind a little bit more structure in the collaboration. Meaning people sort of, or not people maybe an advisor, or even your AD [phonetic] or somebody collaborating with you more on where you're at, what you need to be doing with that, if there's a timeframe involved. For instance with the PIE some of the informed consent paperwork it's the time to document, it's two years. But I know people who are coming up on two years after their practicum experience and are realizing that they need to get their PIE done (Pre-Internship Evaluation)</p>

How does your geographical location impact your learning process with Fielding?	That's a great question, because I have lived overseas for periods of time during my time at Fielding. And the wondrous thing about Fielding and in fact my advisor who I should really speak to and who has been wonderful is that they haven't required me to be either in the country or be at a cluster meeting every single month. Fielding has also been flexible in that if I'm no longer living where my advisor's cluster is which is in North Carolina, and I move some place else in the country. And as of right now I'm living in Boston. I have then the option usually to attend a cluster there. So geographically I have not had any real requirements set upon me.
Which ICTs help to reduce the affect of distance on your PhD program?	I've used WebEx through Fielding and you know conference calling and things like that. That's certainly worked. Internet networking, education services I guess would also pertain to the practicum and stuff like that. Training is sort of through Fielding, but pretty much through other avenues of input. I've used videoconferencing in other realms of my life. That actually wasn't through Fielding.
What are the current short-comings of ICT in reducing the affect of distance?	I would only say, and I think we're moving to this which I have some opinions on, but that libraries are still necessary. Everything is not online yet. Although I know that some libraries that are putting all X number of their books online. So we will be getting to that I'm certain. But for instance, while I was in France, I had to have my parents ship all of my books to me
If you could design an ideal ICT environment to aid your collaborative learning for your PhD, what would it look like?	I would say FELIX really is just doing a great job. It's bringing all kinds of diverse people together, to one forum, asking for their input, while policing it. You know you're not just going to put anything up there. It also provides database access, so I mean again I don't really have any qualms about it, and I think that that's probably the best I've seen in my experience.
How do you contract (student / faculty) on a knowledge area?	

Contact Type: Interview
Code: PSY-6S

Site: Fielding Winter session January 2005, Santa Barbara

Question	Information (Summarized)
How does FELIX support learning individually and with others?	I have found that the opportunity to interact with others who are a part of various FELIX programs, course works, are enriching for me, because I can read what other students have posted on the website and reflect on that, sometimes take a number of days to respond. It may be with a posting of a paper or just reflecting my own ideas with some supportive documentation that goes with that. So in that sense, the interaction with fellow students is good in that, if I already know the student, it enhances the relationship with them. If I don't know them, then the next time that I see them at some national session or research week, it enables me to get acquainted with someone that in some sense I know something about anyway. I think individually, it helps me with, I read what's posted on FELIX and I will take some time to reflect on it basically throughout the day and evening too. I can be driving and be having a conversation with my wife about something that I'm reading in response to a posting on FELIX, so it's an ongoing process of learning.
To what extent do you Share	On a regular, ongoing basis, it's not uncommon for me or a fellow

literature?	student to indicate something they have read has been helpful, and they will post that. And if it's something that I'm interested in, then I will procure a copy, whether it's the journal article or the book. And so, it's an ongoing process of evaluating the resources.
To what extent do you Review each other's work?	Yes, we do. It can be done in a couple of ways. It can be done what I consider informal, and that I would read a posting, and I can respond back just in terms of my own thoughts about it. Or it can be more formal, in that I will post maybe a paper in response to that. Or it may be that in my own thoughts, with doing some supportive documentation and articles and readings that I have to support it as well.
Are there specific technology improvements you would like to see in FELIX?	There's not a lot of improvements that I really would like to see in FELIX. I think the things that exist there that are what I would consider to be frustrations for me, has to do more with my continuing to learn some of the procedures. This is not so much with the FELIX part, but with library, resources. It's just learning to walk one's way through the process of obtaining dissertations, and so forth like that. Other stuff, obtaining articles, is pretty routine and easy. There are some things that I don't do that often. And the courses are offered here; I've stepped through a number of those. So I think that Fielding is doing a good job in being supportive of whatever resources the students need.
Have you used technologies to work with colleagues other than FELIX?	I use the computer quite a bit as far as emailing and in my business use websites and so forth. So that part is pretty familiar with me
Familiar with "ICT"?	I guess I am. I'm more familiar with a term like IT, information technology.
Which ICTs do you use in your PhD program?	everything from cell phone to fax and high-speed networks, and all that's very much an important part of what I use in the work with Fielding.
How would you define advances in ICT?	I think part of what we do in the use of FELIX allows students to be able to share conceptualizations and ideas, and there's a lot of energy that's focused around the learning process as we share together things. The entire process is, I think, very friendly for students with creative ideas and concepts to be shared. And that's an important part of the learning process, particularly at a place such as Fielding.
Does your PhD program involve shared knowledge creation activities?	I'm involved multicultural class now, and there's a lot of learning that takes place, areas that maybe a student wasn't even aware of that is a part of the reading; different levels of understanding, which is then conceptualized, and the whole cognitive process is an enriching sort of a thought process that moves a person from one layer of understanding to another. And interacting with fellow students is a part of that, because I may be focusing on a particular area of multiculturalism, for example, and other students are looking at other areas of interest to them, as it pertains to multicultural. But it's that integration that allows them a mutual understanding.
How does Fielding encourage collaboration?	The entire process of adult learning, the Fielding model, is built on the importance of doing collaborative learning. The requirements for any PhD program, Fielding or a traditional program anywhere else requires an in-depth commitment to study. The collaboration is a very important part of the motivation for a student to continue the learning process, so on a personal level, the collaborative learning is motivating, because you're sharing with other people in a learning process that everybody is energized with that collaborative energy. At another level, it's the sharing of ideas and concepts that broadens one's horizons. And so, I think, just in terms of my own individual perspective, I think I have a pretty good understanding of this

	area. And then someone else comes in and gives me a different perspective, and I grow by leaps and bounds by incorporating those different cognitive views of things.
Do you feel that there is anything in Fielding policy that discourages collaborative learning?	Not at all. I think the entire structure...I think everything about Fielding really encourages the collaborative aspects of learning.
Satisfaction w collaborative activities on a scale of 1-5.	5
What is your preference, to work individually or collaboratively?	A mix. I would say it's probably more...the collaborative part is important to me; I see it in stages. Individually, I like to do my own homework, in terms of a particular area that I'm working on, and do my learning. And then, the next sequence in that is the collaborative aspect, once I have developed a certain understanding in an area. Or maybe I already have it, you know, because of my own previous learning or life experience, but the collaborative part is the part of the process of learning that's very important. I don't think learning can occur in any program in isolation.
When did you begin to understand and trust these collaborative learning methods at Fielding?	I understood the collaborative process long before I came to Fielding. I think that's one of the things that appealed to me about the Fielding structure.
Is there anything you would change or improve about the Fielding collaborative learning environment?	Probably not, because quite honestly, I'm more focused on the program that I am on. I have not been disappointed or frustrated about this collaborative learning process, so I'm very pleased with it. I can say that when I first began the process, I felt somewhat intimidated by the WebEx, for example. And it took me a little while of getting, I guess, acculturated to the technology environment with that.
How do collaborative technologies help you in your program?	Even though I have a fairly comparable working level with computers, the WebEx was somewhat intimidating, but acclimated to it, it's fine. It was the combination of having to call in and getting a meeting number, and get the headphones set up so that I can dial in on my phone while I'm on the computer. And so, it's that I'm operating two or three different systems at the same time, and in the midst of that I've got to do the...the lecture that's being given, I've got to do the note taking there. And I'm trying to save the slides that are being presented on the screen of my computer
How does your geographical location impact your learning process with Fielding?	I live in Tennessee. I belong to the Florida cluster, and I have never missed a cluster meeting, because the cluster is an important part...the cluster meetings are an important part of my motivation. We meet some in Gainesville, we meet in Fort Lauderdale, and we meet in Tampa. And so, my location itself, because of the communication model allows me to stay connected, even though I'm the only student, I'm the only Fielding student that's active in Tennessee. I mean, there's been graduates that live in Tennessee, but I'm the only...well, there may be one or two others that have completed the coursework and they're in the dissertation phase, or something. But as far as I know, I'm the only one that's actively pursuing KAs -
Which ICTs help to reduce the affect of distance on your PhD program?	ability to maintain ongoing Internet access and email as well. I mean, I'm continually emailing some of my fellow students about assignments or clarifying cluster meeting locations, and so forth, so that's really an essential part of the program.
What are the current shortcomings of ICT in reducing the affect of distance?	I really don't feel hindered in terms of any shortcomings with what I'm dealing with right now. And part of that is that I have high-speed access, and that's essential. You know, I was told that when I first enrolled in

	<p>Fielding, that having high-speed access is important, and so that's essential. The ability for emails, and a lot of times that we will communicate by phone as well</p>
<p>If you could design an ideal ICT environment to aid your collaborative learning for your PhD, what would it look like?</p>	<p>it would a system. For example, with the WebEx, I wouldn't have to bring together the headset and the phone line online with my computer. There would be one system that would integrate all that, and I could go online without having to dial up, for example.</p> <p>There would also be the capabilities, and we're almost there now, in using such things as SPSS with the computer to do our analysis, our data analysis, and so forth. My hope would be that that would be a little more advanced in integrating that into the system.</p> <p>But I think it would be great, in terms of dreaming, to think about a computer where one can basically structure, this is what I want to do, and it provides me the kind of research design and methodology.</p> <p>Right now, I have to go through reams of courses, and books, and journals, and saying: "Okay, what research design is best for what I want to do?" What if there was a program integrated within this system that says: "Okay, this is what I want to do. You know, answer some questions, it comes up with a design, and gets me the steps, the procedures I need to do." That's my dream.</p>
<p>How do you contract (student / faculty) on a knowledge area?</p>	<p>I've set up a number of group contracts – I have learned, first of all, that I look at the course syllabus to find out what the pertinent knowledge areas are from that. So I use the syllabus basically to design the learning objectives that I'm going to include in designing the contract.</p> <p>So I take the basic, approved contract form and I add to that the required requisites for learning that's posted on the syllabus. So I incorporate that into the contract, and I will coordinate with the professor, in terms of how many students are needed, to establish the group seminar. And based on that, then, usually when I'm doing the contract, I will usually have a... we have a flexibility that I will identify what questions are going to be included, for example; what paper, topics are going to be posted, those kinds of things; come together in agreement on that and submit it to the professor and –</p> <p>I look online with FELIX, in terms of who are the professors that teach this particular knowledge area? Out of those, let's say there are maybe four, five professors, out of those it is someone that I particularly like; either their style, because I've had other courses with them, or maybe other students, by word of mouth, have said: "Hey, this is great under so-and-so."</p> <p>So I will select a particular professor, and then contact that person before submitting a contract, asking: "Are you available to do this?" And if so, then we'll submit the contract, and they will look at it, and either ask for some revisions or sign off on it.</p> <p>For other PhD students to join, There's a couple of different aspects to that. One is, it may be those of us who started the OPS [phonetic] at the same time have a sort of a group. And so, we pretty well need the same courses because we've moving through the program in pretty much the same process. So we have email contact, it may be others that are members of the cluster we're in. So acquaintances, either by having been in other courses or OPS process, things like that, we contact each other.</p> <p>If I need additional ones, then I will go online and post either under "Psychology Program" or "Psychology Students", maybe both, and see if there's others who have an interest or a need.</p>

Contact Type: Interview
Code: PSY-7S

Site: Fielding Winter session January 2005, Santa Barbara

Question	Information (Summarized)
How does FELIX support learning individually and with others?	I think FELIX is fabulous. I found that reading other students' papers is naturally stimulating for whatever reason, that I learn, actually a lot more from it. I think because it's an inter-active process as opposed to didactic learning. It actually stimulates a deeper type of learning.
To what extent do you Share literature?	All the time. I have another resource in bibliographies of the students if I need to access that kind of information for something I might want to do later,
To what extent do you Discuss literature you've read?	All my courses require that you respond to the other students' papers. It's shared knowledge, but it also, when you have to stop and think about how to respond to something, then you have to have a sort of, you have to have an understanding of what you're responding to. So it forces you to that level of absorption, I think, so facilitates your process because it takes, when you have to respond, you can't just read it you really, you have to respond to it, so you have to engage in a higher dialogue with yourself.
To what extent do you Share data?	I do save papers from other students, you know, books names will come up and I add them to my list of things I'm going to order when it's time to buy books. But I find that I have another resource in bibliographies of the students.
To what extent do you Review each other's work?	We take the learning to the next step which is critical thinking. So you're engaging at a higher order process of learning when you're critiquing and responding to someone.
Are there specific technology improvements you would like to see in FELIX?	There's got to be maybe a formalized approach to this, but some ways that are structured, the course of the structures in FELIX, to me are more helpful than others. Different professors have different structures for the class. I'll start with one of my favorites, the seminar at a coffee house. There was section one, two three. And then you go in there and you respond and there were dates that you responded. That's very segmented and linear which it was nice because it organized me. Then there's another with a new professor that was too loose then I kind of get overwhelmed, and I don't know what I've read, and what I haven't read, where I should go next. There's also the difficulty of different students get online, you know, different times, to do whatever. I wish that there were a way to capture when someone has made a response or post-it, you'd notified, but I almost wish that I knew where to go on some of these that the response has been made. You get a personal email that says in this class there's been an addition. But it doesn't take you right to it so you don't know where it is.
Have you used technologies to work with colleagues other than FELIX?	I worked on Wall Street, and I worked on a training floor, and I helped to automate the training systems, you know, as well as for the underwriters. If a program wasn't doing what needed to be done, I'd go and learn how to do the program and fix it myself.
Familiar with "ICT"?	Yes
Which ICTs do you use in your PhD program?	I don't understand the advanced layers. I would say "Mid-Range".
How would you define advances in ICT?	I use technology in EEG Biofeedback to do cognitive rehabilitation. I'm one of the top trainers in the country. My interest has been turning the ICT into something that's useful, that touches people and helps them to heal. That's when I saw ICT going in that direction, when I was in special education and teaching in Bedford-Stuyvesant after Wall Street. I

	got onto EEG Biofeedback, so I'm interested in that application. I see what's going on with all the brain research and everything else. It's changing the paradigms, and people tell me that part of what I have to do is to bridge that gap between psychology and physiology-it's technology driven. It's changing the way I think about the brain.
Does your PhD program involve shared knowledge creation activities?	I haven't done group KA yet. I mean in our cluster groups and at the sessions we have a lot of shared learning experiences. And they've been amazing.
What activities do you do with other PhD students?	We had a two-day session on what qualitative research was. We worked until 11 o'clock at night and then we gave her back, the idea was to do a sample qualitative research study. So it was very hands-on. And we ended it, we came up with we wanted to do a PowerPoint presentation and we were doing at the same time the other half of the question, doing a qualitative. So it was the technology that facilitated.
How does Fielding encourage collaboration?	They give you choices and options and demonstrate and model, by power of example so the only thing, you know, they'll take you through a dry-run of the way something is so you learn it.
Do you feel that there is anything in Fielding policy that discourages collaborative learning?	I really don't. I mean, I don't think so. I mean there are...and then there's me. If there was I would probably run. I'm the type of person that would try to seek out those kinds of opportunities.
Satisfaction w collaborative activities on a scale of 1-5.	5
What is your preference, to work individually or collaboratively?	Absolutely collaboratively
When did you begin to understand and trust these collaborative learning methods at Fielding?	When I got to the end of my first FELIX KA. At first, I'd plug in and I would be scared of how the professor responded, about what everybody else thought about my paper, etc. And so there was this, "Oh I'm going to do it now, so close my eyes and I'll learn from the practice."
Is there anything you would change or improve about the Fielding collaborative learning environment?	I'm not sure that I'm doing the best job at research that I could be doing, using the system. And I think I do a fairly good job, but I don't feel like I'm maybe using the search engines in the best way that I could and I want to feel more confident about the way I use it.
How does your geographical location impact your learning process with Fielding?	I'm just outside of New York. So there area lot of advantages to not being one of the students that are in a remote area.
Which ICTs help to reduce the affect of distance on your PhD program?	N/A
What are the current short-comings of ICT in reducing the affect of distance?	N/A
If you could design an ideal ICT environment to aid your collaborative learning for your PhD, what would it look like?	I would make sure that the faculty had licensure and education. I think we'd use the ICT more effectively with better idea of how human learning should take place... I think that the way they teach you how to use FELIX. I think Stefan does a great job, but I think there has to be more of it when you come in.
How do you contract (student / faculty) on a knowledge area?	N/A

PAGE	SALIENT POINTS	THEME/ASPECT
Question from page 15, but this	Teachers had to be trained or certified to know how to teach. If there's a mismatch between	

clarification came in an email.	what people want and what they really need to do the job, then I think technology can fail.	
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Contact Type: Interview
Code: PSY-8S

Site: Fielding Winter session January 2005, Santa Barbara

Question	Information (Summarized)
How does FELIX support learning individually and with others?	The dissemination of knowledge through FELIX, I have found, even though I was not computer literate when I started the program, I did find it very... I want to say very easy; moderately easy. A lot of information, a lot of links to understand the program, how the program works. In terms of collaborative learning, the group work, you can do course work with other students.
To what extent do you Share literature?	That interactive with voice was the only class I did. In terms of sharing literature and research...did I do that? The research project I got involved, that's more difficult, and I think a downside to Fielding, at least that I've been struggling with; and I've been somewhat successful. I was getting into research projects, and there would be a winter session. So then, in terms of sharing literature and research, someone from my cluster, who's in the New York area – so there's the physical miss [phonetic] – announced he was working with a principal researcher who was in Michigan, and outside person from Fielding. And it was in the area of spirituality, which is my interest, and so I hooked up with this student. And we shared information in person, because we were located in similar areas, so we able to do research together, data collection together. I got a hospital on board with this research project, near me. The principal researcher was in Michigan. I made the initial contact with the hospital, and then he followed up with a proposal, and all of that.
To what extent do you Discuss literature you've read?	The way we interact is, someone will post: "Actually, I'm about to begin this when I get back. I will post my paper on February 20. There will be three papers already posted, so I will read those three papers and comment." There's a thread. There's a forum in FELIX.
Are there specific technology improvements you would like to see in FELIX?	Web-Ex: you have chat capability, you have a shared whiteboard in there, shared PowerPoint
Have you used technologies to work with colleagues other than FELIX?	A PowerPoint presentation in person
Familiar with "ICT"?	yes
Which ICTs do you use in your PhD program?	Logical layer [phonetic]; collaborative learning technologies, FELIX. And content layered [phonetic] digital libraries, databases.
Does your PhD program involve shared knowledge creation activities?	Yes- cluster meetings that we have in our areas -
What activities do you do with other PhD students?	Well, we've sessions, national sessions, and research and clinical sessions, so it's four times a year - four weeks a year that there's a lot of collaborative learning; very rich, very pressured, because it's short.
How does Fielding encourage collaboration?	Cluster meetings: the faculty who is in charge of their clusters will do group KAs and initiate them, encourage them. We'll do student presentations at cluster meetings, or group presentations. And at national sessions, student-led events are encouraged. Also, group KAs that...I initially liked this form of learning. I had a bad experience with it, and I've shied away from it now. But another way that we do collaborative learning is, they split the course where you can do a paper, and the group, as I've already described, post papers on

	the forum. And then, the second part is, you do an oral presentation at national session, and I did that with Joan Read, biological basis, and that was terrific. It was absolutely wonderful.
Do you feel that there is anything in Fielding policy that discourages collaborative learning?	In their policy, no. In action, I'll go to that course that I took. It was the manner, and it was personality of the faculty that greatly discouraged our voices in that class. It was greatly discouraged. You know, to be kind to the faculty, I'm sure it wasn't intentional. - but it was because the personality was very condescending, everyone clammed up. And there already PhDs in the group there, you know, accomplished and even they clammed up.
Satisfaction w collaborative activities on a scale of 1-5.	5
What is your preference, to work individually or collaboratively?	When I first started the program, I thought it would be individual, but now it's collaborative.
Is there anything you would change or improve about the Fielding collaborative learning environment?	Well, you know, even though I had that bad experience, the others have been so strong and positive, I would say to have more of that format or oral presentation and discussion as part of a course; and mix that with papers, writing and papers.
How do collaborative technologies help you in your program?	we had a lot of colloquiums. We would meet in the different houses on campus and just have discussions, you know, different material that we were learning. Yes, that was very different, I remember. And I describe this to people that it was immersion in the theoretical material, because we'd wake up at night...now Smith is a little different too, because we were on campus for 10 weeks. This is different from other - this was a clinical social work program - different from other, traditional schools. So we're living, eating with each other; wake up in the morning. I had two friends that, you know, we'd take our time waking up, and we would sit with our coffee and breakfast, and other people were discussing Freud and theory at 7:30 in the morning. And we were sitting there saying: "Shut up. Don't talk about Freud." But when I thought about it, we were surrounded, so a good word is "immersed". - you know, in the theoretical material, so you couldn't help but ingest it and get it, so that's a big difference.
How does your geographical location impact your learning process with Fielding?	It impacts in a positive way. I'm lucky that I'm in a very metropolitan area. There's 60 students in the New York, New Jersey, Connecticut area. I know that it's a great difficulty in other parts of the country.
Which ICTs help to reduce the affect of distance on your PhD program?	So in the case of the statistics, it was Yahoo's Instant Messenger, and audio. I forgot what else; the WebEx, I guess.
What are the current short-comings of ICT in reducing the affect of distance?	I'll say again, they don't utilize WebEx enough.
If you could design an ideal ICT environment to aid your collaborative learning for your PhD, what would it look like?	Well, the first thing that came to mind were all these videos, so that I could view the class. If it has to virtual, then that's what I would love, so that we were all together and you could see facial expression and talk.

Contact Type: Interview
Code: PSY-9S

Site: Fielding Winter session January 2005, Santa Barbara

Question	Information (Summarized)
How does FELIX support learning individually and with	It allows us to communicate with each other individually, or faculty members with peers, and allows students who are new in the program to

others?	communicate with students who are older in the program, without public disclosure necessarily. It allows us to take classes online.
To what extent do you Share literature?	I participated in a qualitative dissertation, and looking at the review of literature, doing data analysis, and having intra-reader reviews, all through FELIX.
Are there specific technology improvements you would like to see in FELIX?	we have the WebEx, and we've done fairly instantaneous communication with people all over the country and in a couple of other countries at the same time, with statistical analysis. If there was anything that was going to be improved, it would just be we'd all have WebCams and could look at each other while we're doing it. my only big complaint about FELIX right now, is the administrators have everything locked down, so I can't communicate with work right now, and even signed on as an administrator, because of all the firewalls. Everybody's protecting everybody from bad things, but now there's been problems accessing
Have you used technologies to work with colleagues other than FELIX?	Just my office, We're pretty well networked there: Email, phone
Familiar with "ICT"?	yes
Which ICTs do you use in your PhD program?	software, visual library, mass storage, phone and fax
Does your PhD program involve shared knowledge creation activities?	Yes. For instance, doing a FELIX seminar with other students involved; sharing their papers, their references; and in feedback sessions with each other and with faculty, the processes that were utilized in achieving those final results.
How does Fielding encourage collaboration?	They encourage collaboration from the outset. They start with more senior students welcoming the incoming students; and making sure they know how to use the technologies and what to access; how to line up their curriculum so that they get the most benefit the quickest, and not to get discouraged. And that's the non-academic part. Academically, they encourage collaboration throughout and promote an interactive environment with each other.
Do you feel that there is anything in Fielding policy that discourages collaborative learning?	No. I've never been discouraged
Satisfaction w collaborative activities on a scale of 1-5.	5
What is your preference, to work individually or collaboratively?	Collaboratively . I've done individual seminars with faculty, and then seminars with groups of students and faculty, and I learn a lot more.
When did you begin to understand and trust these collaborative learning methods at Fielding?	Pretty much right off the bat. The seminar we did was a research and methodology seminar and it was with a group, and it's something I signed up for when I was here for orientation; and just the way everything worked
Is there anything you would change or improve about the Fielding collaborative learning environment?	Just WebCam, it's more normal to look at people when interacting
How does your geographical location impact your learning process with Fielding?	it's the same as going to work, but otherwise it hasn't impacted at all. I moved from Tucson to Utah, and no problems. We've been in New York and Canada, Alexandria, Virginia; and been able to communicate with home, with work, with Fielding with no problem utilizing Fielding's technology.
If you could design an ideal	a virtual kind of classroom, and not just the WebCam issue, but the

ICT environment to aid your collaborative learning for your PhD, what would it look like?	<p>instant communication verbally with each other. And I know with the Web access only a little bit of a problem, because people kind of get cut off verbally electronically.</p> <p>I know some universities are supplying people with laptops when they come in as freshmen so that they have the technology they need. I can't imagine what our tuition would be if we did that, but if everybody had the same level playing field, with their own technology, then that would be awesome.</p>
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Contact Type: Interview
Code: PSY-10S

Site: Fielding Winter session January 2005, Santa Barbara

Question	Information (Summarized)
How does FELIX support learning individually and with others?	<p>it creates the community. It creates the learning environment underneath community. It keeps me posted on pretty much anything that's available at Fielding, in terms of the resources, in terms of people and library services.</p> <p>What's being offered, keeps me in contact with activities, events and communicating with other students, with other faculty, with other people that have similar interests. I would say it's the glue -</p>
To what extent do you Share literature?	I've participated in a lot of online group seminars. And we do all of the above. We present information to each other. We review each other's work by other students.
To what extent do you Review each other's work?	<p>I know I've taken some courses where we're expected to write formal response papers and that means we can actually critique each other's papers by writing about the form of the paper or the substance.</p> <p>I think in terms of my own personality, I tend to do more, well, not more, I don't comment so much on, you know, grammar or technical things. Or even style unless it's a terrific paper and then I would say, you know, "Terrifically written paper".</p> <p>But more about the information that's being presented. Although I have encountered some students that, depending on the forum, have actually done more of, you know, critiquing the actual paper, how it stands as an actual piece of work.</p> <p>So in terms of formal responses, sometimes you know, there's been guidelines given by faculty to focus in on a particular area that was just covered broadly in the paper, that now provided more additional information for other people in the learning environment.</p> <p>So to sort of pick up and focus more on that. Or just to disagree or agree with an opinion that was stated. And in that way, I mean it's the equivalent of, you know, a discussion in a classroom.</p>
Familiar with "ICT"?	vaguely
Which ICTs do you use in your PhD program?	Videoconferencing via the Internet, WebEX, FELIX, Digital libraries and databases

Contact Type: Interview
Code: PSY-11S

Site: Fielding Winter session January 2005, Santa Barbara

Question	Information (Summarized)
How does FELIX support learning individually and with others?	<p>Well, I have found that the opportunity to interact with others who are a part of various FELIX programs, course works, are enriching for me, because I can read what other students have posted on the website and reflect on that, sometimes take a number of days to respond. It may be with a posting of a paper or just reflecting my own ideas with some supportive documentation that goes with that.</p> <p>So in that sense, the interaction with fellow students is good in that, if I already know the student, it enhances the relationship with</p>

	<p>them. If I don't know them, then the next time that I see them at some national session or research week, it enables me to get acquainted with someone that in some sense I know something about anyway.</p> <p>I think individually, it helps me with, I read what's posted on FELIX and I will take some time to reflect on it basically throughout the day and evening too. I can be driving and be having a conversation with my wife about something that I'm reading in response to a posting on FELIX, so it's an ongoing process of learning.</p>
To what extent do you Share literature?	<p>On a regular, ongoing basis, it's not uncommon for me or a fellow student to indicate something they have read has been helpful, and they will post that. And if it's something that I'm interested in, then I will procure a copy, whether it's the journal article or the book. And so, it's an ongoing process of evaluating the resources.</p>
To what extent do you Review each other's work?	<p>It can be done in a couple of ways. It can be done what I consider informal, and that I would read a posting, and I can respond back just in terms of my own thoughts about it. Or it can be more formal, in that I will post maybe a paper in response to that. Or it may be that in my own thoughts, with doing some supportive documentation and articles and readings that I have to support it as well.</p>
Are there specific technology improvements you would like to see in FELIX?	<p>There's not a lot of improvements that I really would like to see in FELIX. I think the things that exist there that are what I would consider to be frustrations for me, has to do more with my continuing to learn some of the procedures. This is not so much with the FELIX part, but with library, resources. It's just learning to walk one's way through the process of obtaining dissertations, and so forth like that.</p> <p>Other stuff, obtaining articles, is pretty routine and easy. There are some things that I don't do that often. And the courses are offered here; I've stepped through a number of those. So I think that Fielding is doing a good job in being supportive of whatever resources the students need.</p>
Have you used technologies to work with colleagues other than FELIX?	<p>I use the computer quite a bit as far as emailing and in my business use websites and so forth. So that part is pretty familiar with me.</p>
Familiar with "ICT"?	<p>yes</p>
Which ICTs do you use in your PhD program?	<p>I would say the majority of what I see here is used in one way or another- everything from cell phone to fax and high-speed networks, and all that's very much an important part of what I use in the work with Fielding.</p>
How would you define advances in ICT?	<p>I think it's expanding somewhat exponentially. It's phenomenally advanced in comparison to where it was just a few years ago</p>
Does your PhD program involve shared knowledge creation activities?	<p>I think part of what we do in the use of FELIX allows students to be able to share conceptualizations and ideas, and there's a lot of energy that's focused around the learning process as we share together things. The entire process is, I think, very friendly for students with creative ideas and concepts to be shared. And that's an important part of the learning process, particularly at a place such as Fielding</p>
What activities do you do with other PhD students?	<p>Well, I'm involved multicultural class now, and there's a lot of learning that takes place, areas that maybe a student wasn't even aware of that is a part of the reading; different levels of understanding, which is then conceptualized, and the whole cognitive process is an enriching sort of a thought process that moves a person from one layer of understanding to another. And interacting with fellow students is a part of that, because I may be focusing on a particular area of multiculturalism, for example, and other students are looking at other areas of interest to them, as it pertains to multicultural.</p>

How does Fielding encourage collaboration?	The entire process of adult learning, the Fielding model, is built on the importance of doing collaborative learning. The requirements for any PhD program, Fielding or a traditional program anywhere else requires an in-depth commitment to study. The collaboration is a very important part of the motivation for a student to continue the learning process, so on a personal level, the collaborative learning is motivating, because you're sharing with other people in a learning process that everybody is energized with that collaborative energy. At another level, it's the sharing of ideas and concepts that broadens one's horizons. And so, I think, just in terms of my own individual perspective, I think I have a pretty good understanding of this area. And then someone else comes in and gives me a different perspective, and I grow by leaps and bounds by incorporating those different cognitive views of things.
Do you feel that there is anything in Fielding policy that discourages collaborative learning?	Not at all. I think the entire structure...I think everything about Fielding really encourages the collaborative aspects of learning
Satisfaction w collaborative activities on a scale of 1-5.	5
What is your preference, to work individually or collaboratively?	the collaborative part is important to me; I see it in stages. Individually, I like to do my own homework, in terms of a particular area that I'm working on, and do my learning. And then, the next sequence in that is the collaborative aspect, once I have developed a certain understanding in an area. Or maybe I already have it, you know, because of my own previous learning or life experience, but the collaborative part is the part of the process of learning that's very important. I don't think learning can occur in any program in isolation.
When did you begin to understand and trust these collaborative learning methods at Fielding?	Oh, I understood the collaborative process long before I came to Fielding. I think that's one of the things that appealed to me about the Fielding structure.
Is there anything you would change or improve about the Fielding collaborative learning environment?	Probably not, because quite honestly, I'm more focused on the program that I am on. I have not been disappointed or frustrated about this collaborative learning process, so I'm very pleased with it. I can say that when I first began the process, I felt somewhat intimidated by the WebEx, for example. And it took me a little while of getting, I guess, acculturated to the technology environment with that.

Contact Type: Interview
Code: PSY-12A

Site: Fielding Winter session January 2005, Santa Barbara

Question	Information (Summarized)
How does FELIX support learning individually and with others?	I would say that FELIX supports learning individually through the databases that we have, the search engines as well as, well probably I would say that would be the best way for me as an individual, that FELIX supports. Collectively it helps through the forums that we have for communication as well as like committees, you know, for committees, information, passing on information and the forum dialogue.
To what extent do you Share literature?	It's minimum actually.
To what extent do you Share data?	Yeah I would say that that probably happens more administratively as far as sharing data between people that we work with.
Which ICTs do you use in your PhD program?	just about everything in the mid-range here and the physical layer, Internet, FELIX, Some videoconferencing, databases, digital libraries,

	meetings and mail.
How would you define advances in ICT?	I would probably consider the advance to be the technologies that are collaborative, that connect more than one person at a time. The WebEx, the, you know the various ways of doing that.
Does your PhD program involve shared knowledge creation activities?	I would say that particularly for the Masters program that is done more face to face. In group sessions we do learning community models so it really is about coming together. I know that within the HOD program they've got the online facilitation program and they do blended programs where they meet some face to face and then they carry on a lot of their sharing through online. So I guess that, and I think that each of the schools kind of handle it differently and I think it basically is a combination of meeting face to face and using online.
How does Fielding encourage collaboration?	I think the collaborative piece is kind of a part of the design I think the School of Educational Leadership and Change, because of the nature of education, has particularly worked at that model, collaborative model
Do you feel that there is anything in Fielding policy that discourages collaborative learning?	I think there's a lot of challenges with the distance learning situation regarding collaboration. When I was a faculty I lived in Denver and so there's a sense of isolation.
Satisfaction w collaborative activities on a scale of 1-5.	4,
When did you begin to understand and trust these collaborative learning methods at Fielding?	I would say it was probably during my second year. I think my first year I was not that comfortable or feeling that trust, just becoming acclimated, beginning to understand the model of, the learning model and taking my ownership in that model
Is there anything you would change or improve about the Fielding collaborative learning environment?	I think that I would have more face-to-face sessions for students and faculty
How do collaborative technologies help you in your program?	I communicate largely with my faculty via the Internet and a lot of that is really done via email for individual faculty. We also have forums for our faculty and for each community and we also use for our, when we're planning, when we have planning sessions and faculty come together to plan for a session, we use a lot of phone conferencing.
How does your geographical location impact your learning process with Fielding?	I'm not sure that the process is really impacted because the process stays the same
Which ICTs help to reduce the affect of distance on your PhD program?	telephone, conference call meetings and your online communication We are just beginning to use the WebEx you know and I think that will enhance that
What are the current shortcomings of ICT in reducing the affect of distance?	the capacities of the individuals using them. Of course there's always, I mean the shortcomings of you know the scams that go around, the viruses, the issues that we've faced in that way as well as I think just, just the need for technology to continue to advance.
If you could design an ideal ICT environment to aid your collaborative learning for your PhD, what would it look like?	you can just turn on your computer and you could you know, contact people and you could have visual communication with them. Because communication is more than just verbal and so by being able to see people's expressions and motions and body language you gain a lot more information. As well as, you know, we've had a lot of incidents and I've been guilty myself in, you know, how we interpret what's written. You know, when we think we've expressed ourselves rather clearly I would need a system, well I guess you know there's something about filing documents and everything that I would like to find a better way, a more efficient way of doing that and being able to access information once it does get filed.

Contact Type: Interview
Code: PSY-13F

Site: Fielding Winter session January 2005, Santa Barbara

Question	Information (Summarized)
How does FELIX support learning individually and with others?	it's an information resource, and by that I mean that materials are posted. As an administrator I post materials pertinent to academic requirements and explanations and helpful hints and suggestions, examples of how people have met those requirements. FELIX provides an opportunity for students then to seek clarification to say, "Gee, I don't get it; this doesn't make sense." Or to dispute things and get some response to that. And the thing that's useful is that those are on, those being on the electronic forum, on FELIX, to some extent I don't have to answer the same question over and over again. So you know, a lot of students will have the same question and we'll see how you know John Doe asked this and Joe responded blah blah blah.
To what extent do you Share literature?	we've invested a lot of our resources in using FELIX as the modality by which this kind of sharing will take place. And you know there's certainly other approaches, but we've decided that this one's a good risk, a good investment. And I think that for students who respond to that encouragement, you know it works very well. You know I mean there's certain kinds of problems and so forth, but I strongly encourage student to share their questions, to share information, to post articles, comments
Are there specific technology improvements you would like to see in FELIX?	Now, I'm a little bit spoiled. Five minutes now feels like forever, you know to be clicking here and clicking there. And maybe the answer to that is you know... Five minutes, it isn't so bad. On the other hand I don't know what the technological improvement would be but when you got... FELIX is a huge complex you know interconnected body, some kind of a search engine that's user friendly in a way that isn't quite there yet. But some way in which people could find the stuff they need to find in seconds
Have you used technologies to work with colleagues other than FELIX?	a lot of my research involves working with kids with chronic illnesses. And using sometimes computer installations in pediatric hospitals so that children are able to...they're intranet installations for example...so that children can access development or the appropriate for doing a search and finding an email pen pal you know, to find another kid who has the same unusual disease that you do and so I use that kind of technology to work in my content
Familiar with "ICT"?	Not really
Which ICTs do you use in your PhD program?	Well certainly low-tech physical layer. I would say both mid-range and advance logical layer, I would say all three levels of collaborative and learning technologies and content layer
How would you define advances in ICT?	I would define advances not in terms of the sophistication of the technology involved but in terms of the utility to the user. That when a user is able to more easily efficient and completely reach the goals that they want to. That to me is a more advanced technology. You know, whether or not, no matter how highly or unsophisticated it is, that it gets the person there. It's that access to what the user's purpose is that to me denotes being more advanced
Does your PhD program involve shared knowledge creation activities?	FELIX seminar is a group KA where you have groups of students working together in the discussion of a topic but there are other group KAs that are not FELIX seminars that may not be electronic at all. they may be more of a synchronous as opposed to what I just described were asynchronous. They may be more of everyone log on at the same time and it's in some ways a little more like a traditional classroom, in which

	there's discussion and you know even administration of assignments and responses. WebEx is one of the main tools for doing that.
What activities do you do with other PhD students?	there may be research teams okay who may be involved... it can either be the quantitative or the qualitative or in a few cases even some joint utilization of quantitative [unintelligible] software. And focus on the team. You know the data may be saved in such a way that everyone can access the data and people, there can be different purposes. I mean it may be that everyone is supposed to basically do the same kind of analysis. And it's like a class and the purpose is to teach people for example how to use SPSS [phonetic] to run some regression analyses and so everyone's given the assignment to get these data and do such and such. Or maybe that it's a research team and you know the purpose isn't so much teaching SPSS but doing the research together
How does Fielding encourage collaboration?	we simply produce a lot of opportunities for collaboration, and I'm rather pleased to say that often that's sufficient. By that I mean you know if we say that for example we have a curriculum requirement that a student has to pass a knowledge area in social psychology or biological [unintelligible] personality or whatever. And then we offer a FELIX seminar, which is a collaborative approach. And then the student can also do it individually and do it in a non-collaborative way. The FELIX seminars, to say that they're popular is an understatement. Okay, we have to set up all kinds of procedures by which you know, here's the date on which you can request participation, because otherwise the people who know the professor get in early and other people come along and say, "Hey, by the time it was announced it was already full." So the demand for these is such that when you say what do I do to encourage participation, that's one of the easiest jobs in the world. It's like I put it out there, the seminar and boom! The demand for it, it's filled like that.
Do you feel that there is anything in Fielding policy that discourages collaborative learning?	I think that there is some intentional discouragement of an overly exclusive reliance on collaborative work. There's some concern that when a student's course through Fielding is you know 90% or something approaching totality collaborative learning that there's something missing you know. And one of the things is the ability to sit down and write a very affective composition. You know a scholarly argument. That we're a little bit concerned that collaborative learning, that that's not one of its strengths. Okay. And so you know you've asked about factors that discourage it and I'm talking about a level on which we want to intentionally encourage it up to an appropriate level and discourage it beyond what we see as being an appropriate level. As opposed to seeing it as something that is going to fulfill all the pedagogical needs for the students.
Satisfaction w collaborative activities on a scale of 1-5.	4.
What is your preference, to work individually or collaboratively?	I think that there are some students and faculty and probably administrators who avoid it, who are a little bit more comfortable or less threatened just working in a solitary mode. Which is okay. But if they take that to the extreme of avoiding collaborative activities completely, I think there's a loss there. I think on the other hand there are some people who go in the other direction who you know... I think there's a wide range. I mean I think a good balance of collaborative and individual activities; it doesn't have to be 50:50. There's no one ratio. But when you get out in to either of the extremes of the distribution of the ratio I think that's unfortunate and I think some individuals actually put themselves at those extremes. I don't see that as a limitation coming

	from the technology but rather you know a quirk or a characteristic of human nature that some folks are going to find their niches and their comfort levels. And those aren't always going to be the most optimum places for them to be.
When did you begin to understand and trust these collaborative learning methods at Fielding?	I don't see that as a limitation coming from the technology but rather you know a quirk or a characteristic of human nature that some folks are going to find their niches and their comfort levels. And those aren't always going to be the most optimum places for them to be.
Is there anything you would change or improve about the Fielding collaborative learning environment?	I don't think collaborative learning is the appropriate approach at all times, for all students. I think it's terrific, but it is part of an array of approaches and tools. So as opposed to saying that it's always...I mean there's this tendency to jump on the band wagon and say you know it's...the more the better, it's good for everybody it should be absolutely maximized. I don't think so. I think what I would want to do is to find out where it's most useful and to optimize rather than maximize its use.
How do collaborative technologies help you in your program?	
How does your geographical location impact your learning process with Fielding?	I think it's harder for the students who are in remote areas. Now the whole collaborative technologically mediated collaborative [unintelligible] activities that we've been talking about. That I think is pretty level. I mean people in the city might have slightly faster cable modem connections. But aside from that convenience I think that that's pretty equally available to everybody no matter where they are. In the clinical psychology program we also rely upon a fair degree of face-to-face work. I mean clinical practical training, working with clients, requires that you get into a place that you can be supervised by someone; you work in a clinic or some kind of setting like that. But right now at least telehealth is sort of a new blip on the horizon. And the students need to get themselves to Calgary or Minneapolis or somewhere where there's a little bit more population.
If you could design an ideal ICT environment to aid your collaborative learning for your PhD, what would it look like?	if I could answer that I'd probably be able to make myself a millionaire. Because it would be, I don't know what it would look like. I know what it would do. It would be something like what I said earlier where despite having tons of layers of fully-networked information that you somehow were able to communicate what you're looking for in some kind of a search engine within the environment and find it like that.

Appendix F

Fielding Founders' Professional and Educational Backgrounds

Fredric Hudson

Frederic Hudson, a Rockefeller and Danforth Fellow, earned his doctorate at Columbia University in New York, and taught at Colby College, Stephens College, and the University of San Francisco. He is respected as a recognized expert in adult change and has written a number of books on this subject (Hudson, 1999a, 1999b; Hudson & McClean, 2000). He is also recognized by American industry leaders, such as AT&T, Harley Davidson, Motorola, Quantum, Sybase, Syntex, Pritikin, Lockheed, Genetech and many others. As the founding president of The Fielding Institute in 1973 --the most innovative doctoral studies graduate school in America--he is widely respected for his contributions to adult training in management, organizational developmental and education (Hudson, 1986).

Hudson left Fielding in 1986 to establish The Hudson Institute of Santa Barbara, a training center for professionals focusing on renewal and resilience at work and at home.

The existing graduate schools and professions are not able to devote themselves to what is most needed as the world deregulates itself in the swirl of endless change: persons capable of entrepreneuring the future at every level of change--personal, career, work organizations, communities and beyond (Hudson, 1986)²².

Hallock Hoffman

Hoffman started his career as a political advisor and as Robert Hutchin's right-hand man at the Ford Foundation's Fund for the Republic, which became the Center for the Study of Democratic Institutions in Santa Barbara. He co-founded the Fielding Institute, one of the most important graduate schools in psychology and the social sciences, based mainly on distance education. He was also chairman of the Pacifica Foundation, the parent of two of the leading public broadcasting stations (Hoffman, 2003).

Renata Tesch

The third founding member of the Fielding Institute, which as recently as 2005 changed its name to the Fielding Graduate University, is best known for her work on qualitative research analysis. Renata Tesch identified forty different labels used for models of qualitative research (1990), a list which was distilled into 26 types of data analysis (Aigen, 1995). She was also married to co-founder Hallock Hoffman.

²² Accessed from <http://www.hudsoninstitute.com/pages/Frederic.asp> on February 26, 2006.

CURRICULUM VITAE

Heidi was a PhD candidate at the Department of Decision and Information Sciences at Rotterdam School of Management, Erasmus University in the Netherlands from 2004-2006. She holds a Masters of Arts in English (1999) from Florida International University (FIU) and a Bachelor of Science in Education from the University of Miami (1979). She was presented with FIU's Presidential Award for outstanding contributions in research and education for her work on the Inter-regional Grid Enabled Center for High Energy Physics Research and Educational Outreach at FIU (CHEPREO, 2003). She also holds Executive Development certification from the FIU College of Business (2002).

Heidi L. Alvarez is the Director at the Florida International University (FIU) Center for Internet Augmented Research and Assessment (CIARA), where she is responsible for support of the division's directive to offer Internet Augmented Research and Assessment, Internet2, and high-performance next generation networking services to research and education institutions. She develops and implements information technology grant activities with local, state and federal agencies, either solely or in collaboration with various colleges and offices of the University, with an emphasis on science and educational outreach collaboration. Alvarez works with colleagues and collaborators to plan and implement high performance Research and Education (R&E) networks and US e-Science initiatives in South and Central America, Mexico and the Caribbean.

Alvarez is Principal Investigator of CyberBridges (NSF Award #OCI-0537464) to create a new generation of scientists and engineers who are capable of integrating cyberinfrastructure into the whole educational, professional, and creative process of diverse disciplines. She has served as Co-PI for AMPATH since 2000, Co-PI for CHEPREO since 2003, and the Western Hemisphere Research and Education Network (WHREN) – Links Interconnecting Latin America (LILA) since 2005. She served as Director of Information Technology Research for the Madrid-Miami Center, Madrid, Spain, for a year in 2002-2003. The Madrid Center for Education, Research and Development focuses on three areas of importance to South Florida and greater Madrid: immigration, economic development and information technology.

Selected Publications/Presentations:

Alvarez H. & Ibarra, J. (2003). Experiences with the digital divide in Latin America. Paper presented at the 2003 Round Table on Developing Countries Access to Scientific Knowledge, The Abdus Salam International Centre for Theoretical Physics (ICTP), Trieste, Italy.

Alvarez, H., Ibarra, J., Illyin, S., Kunze, M., Karita, Y., Williams, D.O., White, V., & Newman, H.B. (2003). International Committee for Future Accelerators (ICFA) Standing Committee on Interregional Connectivity (SCIS) Digital Divide Executive Report (Digital Divide Sub-Committee). CERN: ICFA.

AMPATH Scientific Applications Collaboration Update; First International AMPATH Conference, Valdivia, Chile, April 10 -12, 2002.

AMPATH Network of the Americas, LISHEP Grid Workshop, UERJ, Rio de Janeiro, Brazil, February 7-8, 2002.

AMPATH Scientific Applications Overview: AMPATH Workshop, Miami, Florida, August 15 – 17, 2001.

AmericasPATH, STAR TAP Annual Meeting, INET 2001, Stockholm, Sweden, June 5, 2001.

AMPATH International Connectivity Issues, Internet2 Fall Members Meeting, Atlanta, Georgia, October 31, 2001.

Regional Aspects of Miami Crime Fiction: A Postmodern Frontier – Master's Thesis, 1999.

Book Review: "Essays by Contemporary American Women," Probable Cause, 1996.

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Distributed collaborative learning communities enabled by information communication technology

How and why can Information Communication Technology (ICT) contribute to enhancing learning in distributed Collaborative Learning Communities (CLCs)? The first part of the book offers a review of the current literature and relevant theories concerned with the phenomenon of ICT enabled distributed collaborative learning. It identifies gaps in the current knowledge. Many questions can be asked about the role of technology in distributed CLCs. How technology is enabling collaborative learning in learning communities is an important one. What are the issues and problems in the context of technology enabled collaborative learning, is another. The articulation of CLC characteristics stem from the Communities of Practice and Communities and Technologies movements that have taken root in twenty-first century Information Society dialog. The theoretical lens provides a framework to study this phenomenon empirically in a case study setting. The research methodology explains the choice and justification for the single case study of the Fielding Graduate University. Fielding offers a unique example of both the phenomenon and context of technology enabled distributed graduate education. The study findings can begin to be generalized to CLCs with similar characteristics to the Fielding Graduate University. Because of the need for intense collaboration, distributed collaborative learning can be facilitated by the use of rich media. Where people use media rich technologies their distributed collaborative learning results seem to be better than their colleagues that did not use ICT. Therefore, media rich ICTs with collaborative features may improve the level of learning and performance in collaborative distributed learning environments.

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