COMMUNITIES OF LEARNING AND CULTURES OF THINKING:

THE FACILITATOR'S ROLE IN THE ONLINE PROFESSIONAL DEVELOPMENT

ENVIRONMENT

by

CAROL LYNNE BROOKS SIMONEAU

B.A., University of Nebraska at Kearney, 1993
M.S., Kansas State University, 1996

AN ABSTRACT OF A DISSERTATION

submitted in partial fulfillment of the requirements for the degree

DOCTOR OF EDUCATION

Department of Educational Leadership
College of Education

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Abstract

Online professional development has the potential to be a dynamic tool to construct knowledge and enhance professional performance. Online collaboration tools have accelerated learning and have made online professional development convenient, dynamic, and flexible. Yet access to powerful learning resources has not always ensured that quality online professional development has taken place or that authentic, transformational learning has occurred. This study has shown that technology has presented challenges that have proved difficult for online professional development facilitators and participants. Consequently, the facilitator's role in professional development has been even more critical in the virtual environment and the facilitator has had to be even more intentional in their actions, decisions, and expectations.

The purpose of the study was to research, develop, and validate an online professional development facilitator's handbook that would clarify and demonstrate the knowledge, attitudes, practices, and skills utilized by exemplary online professional development facilitators. This study has also ascertained practical instructional strategies that are effective in planning, implementing, and facilitating online professional development.

As a result of this study, an online professional development handbook was developed according to Borg and Gall's (1989) Research and Development (R&D) cycle and methodology using three panels that consisted of expert and novice online professional development facilitators.

Findings include: Learning, defined as the process of constructing personal understanding through interactions with others while collectively engaging in challenges that are novel and transferable to other situations and settings, is transformational and has a sustaining impact when skillfully facilitated in the online environment. Online learning communities organized around collaborative inquiry and collective problem solving become co-creators of knowledge in a risk-free, trusting environment. Participants (teachers) become self-determining learners focused on engaging in appropriate endeavors to increase their classroom content knowledge and management skills by identifying their own needs and creating a plan to raise academic achievement and improve their own practices. When educational systems invest in honest

dialogue about student work, candidly assess student and teacher needs, make changes based on data and research, and value individual and group contributions, these organizations become cultures of thinkers and communities of learners.

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Dedication

To my parents, my husband, my family, my friends, and my touchstones who have believed in me, encouraged me, inspired me, and walked beside me on this journey, I thank you. From the depths of my heart, I am grateful.

To Carrie and Cressie, you still take my breath away. As I turn this page, I thank you for grounding me and for giving me wings.

To all the "facilitators of learning," I applaud you.

CHAPTER 1 - Introduction to the Study

Introduction

Budget reductions, time constraints, and geographic distance have limited access to exemplary professional development and have fueled a growing interest in professional development through technology by way of the Internet (Driscoll, 1998; Thomas, 2004). As an innovative avenue for delivering professional development, technology has provided a new culture for learning that is ubiquitous and pervasive and has offered choices for individuals whose lifestyle demands and work commitments have made online learning an enticing alternative to traditional face-to-face professional development (Killion, 2000; Warner & Christie, 1999). E-learning, the delivery of learning by electronic means, has provided unique opportunities for dissemination of information and novel possibilities for instruction and learning (Kokmen, 1998; Salpeter, 2003; Strauss, 1998; White, 1999).

The Internet has offered many advantages not previously possible with traditional face-to-face professional development models (Wiske, 2002) and has been regarded as a potential catalyst for transforming professional development from a conventional emphasis on teaching to a concentrated focus on learning (Ljoså, 1998; McKenzie, 1991). This shift in thinking concerning online professional development practice has the capacity to redefine the role of the learner and that of the teacher in ways that more closely align with how adults learn (Hase, 2003).

Farrell (2001) has defined online professional development as educational training opportunities available anywhere, anytime, by almost anyone via the Internet. Online professional development has included activities, programs, and experiences using synchronous and asynchronous electronic tools, such as email, simulations, instant messaging, chat rooms, blogs, vlogs, voice chats, and podcasts (Richardson, 2006).

Barker and Dickson (1996), Danchak (2000), and McStravick (2006) have found that successful online professional development courses have been a blend of synchronous interactions between and among participants and the instructor that have been time or

geographically sensitive and asynchronous communication completed electronically at an individual's convenience.

Synchronous and asynchronous online communication has supported continuous learning and has provided a format for learners to become reflective practitioners while creating collaborative communities (Bourne, McMaster, Rieger, & Campbell, 1997; Carr-Chellman, Dyer, & Breman, 2000; Hawkes & Romiszowski, 2001; Hiltz, 1997; Kent, 2003; Latchem, 2004; Surry, 2000). In particular, asynchronous interactions have provided online learners additional time to reflect on their experiences before participating in online discussions and have allowed opportunities for personal analysis and thoughtful response (Bonk, Malikowski, Angeli, & East, 1998; Hiltz, 1997; Kaye, 1992, Norton & Wiburg, 2003).

Online professional development has generated opportunities to collaborate with educators from surrounding districts, across the country, and around the world. The chance to share strategies that have addressed common problems has been stimulating and rewarding and unlike other trainings that participants have previously experienced (Lewis, 1999; Milligan, 1999).

Online professional development has mirrored traditional face-to-face professional development in a number of ways. Facilitators of online professional development have created a syllabus, included outcome objectives, identified indicators of success, organized materials, determined instructional strategies, established the sequence and pace, and aligned readings and assignments. Participants have taken part in discussions, have completed individual projects, and have collaborated on group projects. The primary difference between traditional face-to-face professional development and online professional development has been the technology that has been used as the main mode of communication between and among the facilitator of the learning and the learners (Smith & Trayner, 2005; Tinker & Haavind, 1996).

In educational settings, a facilitator has been defined as an instructional leader who has assisted professional development participants in taking an active role in their own learning. In this position, the facilitator has helped learners make connections between the instructional content and their own knowledge, experiences, and needs. The facilitator has challenged participants to evaluate their present perspectives and has encouraged them to create new solutions. The facilitator's objective has been to design learning opportunities that have

paralleled authentic situations for the purpose of motivating learners to question, reflect, create, and evaluate their personal practices and beliefs (NCREL, 2002; Shea-Schultz & Fogarty, 2002).

Participants in online professional development who have been deemed successful have been characterized as highly motivated, confident, achievement-oriented, self-managing learners who have responded well in the self-directed online format common in an asynchronous online environment (Ben-Jacob, 1997; Diaz, 2002; Melburg, Lettus, & Bonesteel, 1993). Ben-Jacob has further observed that the successful online professional development participant has been "someone who understands time commitments and will keep pace with the course work. This personality type will be successful and will appreciate the lack of time constraints in a distance learning without abusing them" (p. 212).

For some participants, the shift from teacher-directed activities to learner-centered activities has been unsettling. Prior experiences with instructor-driven, passive learning orientations have contributed to participants' hesitancy to engage in an interactive, learner-led, collaborative online format. The different roles and expectations required of learners in an online environment have created a level of concern for participants who have been more comfortable in traditional face-to-face professional development settings (Melburg et al., 1993; Muilenburg & Berge, 2005).

Other barriers have deterred participants from enrolling in online professional development. Enrollees have lacked ready access to a computer and to the Internet. Learners unfamiliar with the online medium have felt uneasy navigating within a virtual environment. Participants have presumed they would encounter difficulties in developing working relationships with other participants with whom they had little or no face-to-face contact (Muilenburg & Berge, 2005; Thompson, 1998). While others have hesitated to enroll in online professional development because they have assumed there was little personalized support from the online professional development facilitator.

In an online professional development environment, the facilitator has been available virtually, but has maintained a diminished presence. However, this lack of visibility and immediate contact with the online professional development facilitator has compelled participants to rely on each other and their own resources and has worked to encourage interactive discussions and increased participant collaboration (Beard & Harper, 2002; Kreijns & Kirschner, 2001; Thompson, 1998).

In a virtual environment, the professional development facilitator has the responsibility to address the needs of all learners and increase all learners' comfort levels and involvement. Facilitators who have effectively met the learning needs of varying levels of a diverse learner population have balanced a dynamic combination of flexibility and individualization and have incorporated learner-centered, self-directed, cognitively challenging, scaffolded learning experiences while successfully utilizing emerging technologies (Thompson, 1998).

Facilitators of online professional development have utilized three strategies to nurture and develop an interactive learning environment that has increased the likelihood of success for online participants. Successful online professional development facilitators: (1) have asked questions that have guided discussions and have empowered participants to ask questions of each other, (2) have required relevant group interactions that have a focused topic with short-term responsibilities, and (3) have assisted peer learning through a class structure that has gradually placed more responsibility on the learners to direct their own online learning (Allen, 1997; Belenky & Stanton, 2000; Durrington, Berryhill, & Swafford, 2006).

The online professional development facilitator has played a key role in the success of online learners. A handbook compiling the knowledge, attitudes, practices, and skills of exemplary online professional development facilitators would benefit both novice and experienced online professional development facilitators and would ultimately enhance learning for all online professional development participants.

Statement of the Problem

As the demand for choice in content and flexibility in access in professional development has increased, online learning has offered compelling possibilities to capitalize on technology. At the same time, there has been increased pressure from teachers and administrators who have sought assurances that online professional development has been of high quality and that the investment of time and money has been soundly rewarded, without adding personal and work-related stress. The challenge for educational leaders has been to provide participants with experiences that are purposeful, cognitively challenging, and pleasurable (Beatty, 2003).

As technology has advanced, online professional development opportunities have dramatically increased in number (Brown & Green, 2003). With such a deluge in online professional development offerings, the quality in online professional development has varied as

greatly as the quantity. The determining factors that have strengthened or have weakened the quality of the training and have impacted the learning experiences for the participants have been the instructional design of the training and the skill of the online facilitator (Milheim, 1995; Smith, 2005).

Facilitating professional development effectively in an online environment has required knowledge of exemplary instructional practices as well as management of the online environment. Online professional development facilitators have been challenged to enhance the virtual teaching and learning process by establishing a responsive learning environment online. A responsive online learning environment has enabled participants to be active, critical thinkers by providing a virtual atmosphere that has alleviated communication anxiety for participants who are accustomed to face-to-face interactions, by guiding participants to independently initiate learning activities that have aligned with their personal and professional needs, and by gradually releasing the responsibility of self-directed learning to the participants (Allen, 1997; Belenky & Stanton, 2000; Durrington et al, 2006; Milheim, 1995; Smith, 2005).

Simply replicating face-to-face professional development in an online environment has not guaranteed an exemplary online professional development experience (Levenburg & Major, 2000). Online professional development facilitators who have lacked training have increased the possibility that online participants will experience substandard online professional development. Having highly skilled online professional development facilitators coupled with quality online instructional design has increased the likelihood that online learners have been successful (Dewer, 1996; Joiner, 2002; Palloff & Pratt, 1999).

The problem is that well-meaning facilitators have intended to provide exemplary online professional development experiences for online learners, but have been ill-equipped and have been uncertain how to proceed. As a result, learners have experienced inferior training. Information clarifying the role of an online professional development facilitator, as well as effective online instructional practices, knowledge, attitudes, and skills, has been scarce. This void has been addressed in the handbook.

Purpose of the Study

Information about specific characteristics that have distinguished exemplary online professional development instructional practices has been scant and fragmented. For educational

leaders to be knowledgeable and effective in their role as online professional development facilitators, information should be readily available. The online professional development facilitator's handbook has addressed this void and has provided an accessible resource describing the role of an online professional development facilitator and effective online practices that have accelerated participants' learning.

The purpose of this study has been to research, develop, test, and validate an online professional development facilitator's handbook. This handbook has clarified the role of an online professional development facilitator and has identified the knowledge, attitudes, practices, and skills that have characterized exemplary online professional development facilitators.

Target Audience

The online professional development facilitator's handbook has outlined guidelines for facilitators who have been new to online professional development and has also served as a resource for experienced online professional development facilitators who have sought to improve their online facilitating skills. The handbook has identified specific online techniques and strategies that have been found to be effective in creating high-functioning, intellectually stimulating online learning communities that have encouraged individual reflection and growth.

Research Questions

To determine what information would be included in the handbook, two research questions were identified:

1. What knowledge, attitudes, practices, and skills characterize an exemplary online professional development facilitator?

2. What instructional strategies are effective in planning, implementing, and facilitating online professional development?

The research objectives used in the development of *Communities of learning and cultures of thinking: The facilitator's role in the online professional development environment* were: (a) examine the literature to determine current online facilitation practices, (b) determine how successful online professional development facilitators scaffold instruction so participants have been successful, and (c) develop examples that online professional

development facilitators could use to clarify facilitation of professional development in the online environment.

Significance of the Study

The participant dropout rate has been higher in professional development courses presented online than in professional development courses that have been presented in a traditional face-to-face format. Online course participants who have been less experienced in the online environment have been more likely to drop out due to unfamiliarity with the behaviors required to effectively engage with other participants in a virtual context (Irani, 2001). Other contributing factors for noncompletion in an online course have been the lack of immediate feedback and feelings of isolation, anxiety, and confusion (King, 2002). Skilled facilitation has diminished social isolation evident within the potentially impersonal online environment.

This study has been relevant for inexperienced online professional development facilitators who have needed assistance developing an understanding of their role as an online professional development facilitator. This study has also been significant for experienced online professional development facilitators who have needed a resource to evaluate and improve their current online instructional practices in facilitating online professional development.

Scope and Limitations

The intent of this study has been to review, analyze, and synthesize current research regarding online professional development practices and procedures in order to clarify and define the knowledge, skills, practices, and attitudes that have been exhibited by exemplary online professional development facilitators. The scope of this study has included the development of an online professional development handbook that has been designed for online professional development facilitators and educational leaders. Educational leaders have included curriculum directors, professional development coordinators, building-level and district-level administrators, curriculum specialists, and teacher leaders who have been recruited to facilitate online professional development.

The handbook has not been intended to provide a comprehensive model for authoring an online professional development course, but has been focused on the structures and processes a facilitator utilizes when implementing online professional development. The study has clarified

practical, systemic instructional practices and strategies that have increased the effectiveness of an online professional development facilitator when implemented as have been prescribed by the findings of this study and described in the handbook.

Organization of the Study

This dissertation has been organized according to Borg and Gall's (1989) Research and Development (R&D) cycle and methodology. This methodology has been developed for industry as a method to procure a product that has been effective, practical, and functional. These products have been developed through a structured process of testing, evaluation, and refinement (See Figure 1). Research and Development products developed for education have followed this same rigorous process of testing, evaluation, and refinement to produce a valid education product. This study has adhered firmly to the seven steps required for educational products.

This study has also closely aligned with the instructional design model and formative evaluation process of Dick, Carey, and Carey (2004) and Dick and Carey (1985, 1990). The handbook for online professional development facilitators has been viable utilizing these two methodologies.

The dissertation has been organized into five chapters.

Introduction

Chapter 1 has introduced the study and has included an introduction, statement of the problem, purpose of the study, research questions, significance of the study, scope and limitations, educational research and methodology, organization of the study, and definition of terms.

Review of the Literature

Chapter 2 has reviewed the literature pertaining to online professional development and has included implications for the role of the online professional development facilitator.

Methodology

Chapter 3 has presented a statement of the methodology utilized, the rationale guiding the study, and the method for analyzing the collected data. Chapter 3 has included the process used to validate the handbook: research, development, field tests, and revisions.

Validated Product

Chapter 4 has provided the revised version of the handbook created as a result of the systematic analysis and synthesis of pertinent data, research findings, and feedback from the panel of experts and novices. The handbook has intended to provide guidance for facilitating online professional development in an educational setting and has identified the knowledge, attitudes, practices, and skills that have characterized exemplary online professional development facilitators.

Findings, Conclusions, and Implications

Chapter 5 has discussed the findings, conclusions, implications, recommendations, and future areas of research found as a result of this study.

Definition of Terms

Action research: Inquiry or research in the context of focused efforts that have been used to improve the quality of an organization and its performance. Has been designed and conducted by practitioners who have analyzed the resulting data to improve their own practice (North Central Regional Educational Laboratory [NCREL], n.d.).

Andragogy: Theory of adult learning based on the assumption that adult learners have been different from child learners. Hypothesizes that adult learners have been self-directed and have been expected to take responsibility for personal decisions (Kearsley, 2001).

Asynchronous: Communication between parties in which the interaction has not taken place simultaneously. Examples: electronic mail (e-mail), bulletin boards, discussion forums (Shea-Schultz & Fogarty, 2002; Palloff & Pratt, 1999).

Asynchronous learning: Learning events that have taken place independently in time. An exchange that has not occurred at the same time, but has occurred at disparate times and disparate places (Driscoll, 1998).

Asynchronous online communication: See asynchronous.

Attitude: A learned predisposition used to respond positively or negatively to certain objects, situations, concepts, or persons (Aiken, 1996, p. 226).

Autonomy: The ability to learn independently by exercising control over the content and methods of learning (Moore & Thompson, 1997).

Blog: Web Log or online newsletter. Web site that has contained dated entries about a particular topic in reverse chronological order with most recent first. Has been written by one person or a group of contributors. Entries have contained commentary, images, and links to other web sites (Freedman & Morrison, 2006).

Chat room: An interactive, online discussion (by keyboard) about a specific topic hosted on the Internet. Has been set up to handle group discussions where all participants have been able to see what other participants have typed. Has the capability for two participants to break off and have a personal keyboard chat (Freedman & Morrison, 2006).

Collaboration: The act of working together in a joint intellectual effort (ASCD, 2005).

Collaborative learning: The learner has actively constructed knowledge through interaction with others. Instruction has been learner-centered and knowledge has increased through active engagement and participation in own and others' education (Hiltz, 1998).

Community of learners: Social phenomenon where learning has been the result of membership in a group. Opportunities have been provided whereby knowledge has been acquired through the process of solving real problems (Palloff & Pratt, 1999).

Computer-mediated Communications (CMC): Any form of organized interaction between learners who have utilized computer networks as the medium of communication (Romiszowski, 1997).

Constructivism: Philosophy of learning founded on the theory that learners have constructed their own understanding of the world they live in by reflecting on their prior experiences and adjusting mental models to accommodate new experiences into existing schema. In virtual education environments, the constructivist model has encouraged active participation, intentional communication, and collaboration among learners in authentic activities (Kearsley, 2001).

Curriculum: The organization of subject matter to be taught over a prescribed period of time (LearnNC, 2005).

Curriculum director: Administrator who has been responsible for planning, implementing, and evaluating an education program and who has provided both leadership and management functions (National Association for the Education of Young Children [NAEYC], 2005).

Dissemination: Process of helping potential users become aware of a product that has resulted from a Research and Development study and to demonstrate that the product would replicate to similar situations and achieve the intended effects if implemented according to the developers' specifications (Borg & Gall, 1989).

Distance learning: Education in which students have taken academic courses by accessing information and communicating with the course leader asynchronously as a correspondence course or over a computer network (ASCD, 2005). Planned learning that has normally occurred in a different place from teaching (Moore & Kearsley, 1996).

Effective instructional practices: Serious, thoughtful, informed, responsible state-of-the-art teaching. General consensus of how students have learned best. In general, instruction has been student-centered, active, experiential, democratic, collaborative, rigorous, and challenging (Zemelman, Daniels, & Hyde, 1998).

Effectiveness: Measure of achievement of a specific goal (Moore & Kearsley, 1996).

E-learning: An umbrella term for providing delivery of instruction, training, or educational program by electronic means over the public Internet, private distance learning networks, or in house via an intranet (Freedman & Morrison, 2006).

Email: Transmission of text messages and optional file attachments over a network to a single recipient or broadcast to multiple users. Mail has been sent to a simulated mailbox in the network mail server or host computer until it is examined and deleted by the recipient (Freedman & Morrison, 2006).

Experts: Panel of educators with knowledge in area to be studied and have judged a product objectively (Borg, Gall, & Gall, 1993).

Face-to-face professional development: Professional development where all participants have been in the same room (National Staff Development Council [NSDC] & National Institute for Community Innovations [NICI], 2001).

Facilitator: The online course instructor who has aided learning in an online, student-centered environment. Has known when intervention has been necessary and in a way that has added to the group's creativity rather than taking away from it (Freedman & Morrison, 2006).

Formative evaluation: Collection of data and information during development. Has been used to improve effectiveness (Dick & Carey, 1985).

Handbook: A concise manual or reference book that has provided specific information or instruction about a subject. Also has been referred to as resource guide or guidebook.

Heutagogy: The study of self-determined learning where the teacher has provided resources but the learner has designed the actual course he or she might take by negotiating the learning tasks. Focus has been on developing the learner's capability, not just embedding discipline based skills and knowledge (Hase & Kenyon, 2000).

Infrastructure: The underlying mechanism or framework of a system. Has included the means by which voice, video, and data have been transferred from one site to another and processed (Kaplan-Leiserson, Davydov, Emery, Lahanas, & Potemski, 2005).

Inservice: Continuing education needed by educators when they have completed pre-service training and have been employed as an educator. Also referred to as staff development or professional development and has been typically perceived as a workshop. See professional development. (ASCD, 2002).

Instant message (IM): Messages exchanged in real time between two or more people when all parties have been logged onto their instant message service at the same time (Freedman & Morrison, 2006).

Instructional content: Well-structured educational materials that have included course objectives, teaching strategies, systematic feedback, and evaluation (Moore & Kearsley, 1996).

Instructional practices: A set of methods or procedures that have been followed, as in best practices or standard practices. In e-learning, the methods that have been used to communicate the content to the learner (Freedman & Morrison, 2006).

Interaction: An attribute of effective instruction (Wagner, 1994) by which a learner has been actively engaged in a purposeful exchange of information with an instructor, other learners, or the learner's environment (Moore & Clark, 1989).

Interactive learning: Has occurred when the source of instruction has communicated directly with the learner, shaping responses to the learner's needs. Computers and other modern technological applications have made it theoretically possible to provide effective interactive instruction to any learner on any subject (ASCD, 2002).

Internet: An international network first used to connect education and research networks, begun by the US government. The Internet has now provided communication and applications services

to an international base of businesses, consumers, educational institutions, governments, and research organizations (Kaplan-Leiserson et al., 2005).

Learner: One who has taken up knowledge or beliefs (Lexico Publishing Group, LLC, 2005)

Learner-centered professional development: Professional training where participants have been actively involved in designing their own professional learning and incorporating that learning into their daily instruction. Participants have both learned and modeled learning for their students daily (Eisenhower National Clearinghouse [ENC], 2002).

Learning: A cognitive and/or physical process in which a person has assimilated information and temporarily or permanently has acquired or improved skills, knowledge, behaviors, and/or attitudes (Kaplan-Leiserson et al., 2005).

Learning opportunities: Favorable or advantageous circumstances or combination of circumstances that have provided a chance for progress or advancement (Lexico Publishing Group, LLC, 2005).

Locus of control: An individual's perspective of the influences that have determined life's experiences, whether resulting from their personal actions (internal locus of control) or from external factors as fate or luck (external locus of control) (Grantz, Mackey, Otterman, & Wise, 1999).

Main field test: Quantitative evaluation process of a new educational product by eight or more educators with expertise in the field where the product has been applicable. Purpose has been to determine whether the new product has successfully met its stated objectives (Borg & Gall, 1989).

Needs assessment: Process of identifying a perceived need and collecting information that has substantiated that need. Instrument for data collection has been either formal or informal (Dick & Carey, 1985).

Novice: A beginner. Someone who has just started learning or doing something new and has little or no previous experience in the skill or activity.

Online: Active and prepared for operation in the web-based environment. Also has suggested access to a computer network (Shea-Schultz & Fogarty, 2002).

Online course: A unit of curriculum that has been accessible via a computer or computer network (Shea-Schultz & Fogarty, 2002).

Online instruction: Instructional multimedia-based presentation format in a web-based delivery system (Brewer, DeJonge, & Stout, 2001).

Online learning community: A group of individuals focused on learning who have shared common interests and needs and whose main mode of communication has been the Internet. Has been open to all or by membership only and may or may not have been moderated (Kaplan-Leiserson et al., 2005).

Online learning environment: Information technology educational activities that have not been dependent on location of either the students or the facilitator. Also known as virtual learning environment ("Towards a definition of online learning at UWA," 2003; Milligan, 1999).

Online professional development: Ongoing process of teacher learning that has enhanced student learning conducted online via a computer or computer network. Also known as online staff development (Lewis, 1999; Milligan, 1999).

Online professional development facilitator: Instructional leader designated to provide guidance and training in an online professional development setting. An online professional development facilitator has created online environments and meaningful activities that have guided learners in actively constructing their own knowledge. May or may have been the author of the course (Shea-Schultz & Fogarty, 2002).

PDF (Portable Document Format): The native file format for Adobe Systems' Acrobat. Has been the file format for representing documents in a manner that has been independent of the original application software, hardware, and operating system used to create those documents. Has been described as documents containing any combination of text, graphics, and images in a device-independent and resolution-independent format. Documents have been one page or thousands of pages, very simple or extremely complex with a rich use of fonts, graphics, color, and images (Howe, 2006).

Participant: One who has shared or taken part in something (Lexico Publishing Group, LLC, 2005).

Podcast: A non-music audio broadcast that has been converted to audio file format for playback in a digital player and has been made available to subscribers as news feeds (Freedman & Morrison, 2006).

Preliminary field test: Qualitative evaluation of a new educational product by four to eight educators with expertise in the field where the product would be applicable (Borg & Gall, 1989).

Professional development: Also known as staff development. Includes experiences, such as attending conferences and workshops, that have helped teachers and administrators build knowledge and skills that have resulted in improved student learning (ASCD, 2002).

Professional development coordinator: Also known as staff development coordinator and referred to as an individual who has developed, implemented, and supported professional development opportunities within an educational system (ASCD, 2002).

Project: Long-term activity in which students have been engaged in gathering information and developing a product of some kind, such as a written report, oral presentation, or model. Some educators have believed that students have learned more, have understood the content more

thoroughly, and have remembered information and skills longer when they have worked on a project (ASCD, 2002).

Proof of concept: Validation of a need for a Research and Development educational product (Borg & Gall, 1989).

Prototype: Preliminary form of Research and Development product that has been field-tested (Borg & Gall, 1989).

Research and Development (R & D): The use of research findings to design new products and procedures followed by the application of research methods to field-test, evaluate, and refine the products and procedures until they have met specified criteria of effectiveness, quality, or similar standards (Gall, Borg, & Gall, 1996).

RTF (rich text format): An interchange format for exchange of documents between Microsoft Word and other document preparation systems (Howe, 2006).

Self-directed learning: Has occurred when individual learners have become empowered to increasingly take more responsibility for various decisions associated with the learning endeavor (Hiemstra, 1994)

Simulations: Highly interactive applications that have allowed the learner to model or role-play in a scenario. Simulations have enabled the learner to practice skills or behaviors in a risk-free environment (Kaplan-Leiserson et al., 2005).

Staff development: See professional development.

Student-centered learning: A learning model that has placed the student (learner) in the center of the learning process. Students have been active participants in their own learning: they have learned at their own pace and used their own strategies; they have been more intrinsically than extrinsically motivated; and learning has been more individualized than standardized. Has

developed learning-how-to-learn skills such as problem solving, critical thinking, and reflective thinking. Has accounted for and adapted to different learning styles of students (In Time, 2002).

Student-directed learning: Knowledge obtained as the student has identified and pursued topics felt to be important for her/his own learning. Locus of control has been with the student and outcomes of lessons have been based on student design (Milligan, 1999).

Summative evaluation: Final evaluation utilized to determine effectiveness and if objectives have been met (Dick & Carey, 1985).

Synchronous learning: Communication that has occurred at the same time (Palloff & Pratt, 1999).

Synchronous online learning: A real-time, instructor-led online learning event in which all participants have been logged on at the same time and have communicated directly with each other. Has occurred via audioconferencing or videoconferencing, Internet telephony, or two-way live broadcasts (Kaplan-Leiserson et al., 2005).

Teacher: One whose primary occupation has been to instruct (Lexico Publishing Group, LLC, 2005).

Teacher leader: Individual teachers who have been called to support fellow teachers in a mentoring, collaborative peer-coaching role to improve student achievement (Usdan, McCloud, & Podmostko, 2001).

Teaching: A process used to increase or improve knowledge, skills, attitudes, and/or behaviors in terms of personal growth for the learner (Kaplan-Leiserson et al., 2005).

Technology: Mechanisms for distributing information. Examples: radio and television broadcasting, telephone, satellite and computer networks (Moore & Shattuck, 2001).

Technology coordinator: An education professional who has managed resources and curricular support for online learning to insure smooth delivery of the material (Northwest Regional Educational Laboratory [NWREL], 2005).

Technology support: Individual who has investigated and resolved technical issues related to the use of technology (NWREL, 2005).

Telelearning: See E-learning.

Vlog: A video weblog with video clip entries instead of text (Freedman & Morrison, 2006).

Voice chat: An audioconferencing capability via the Internet that has enabled two or more people to use the computer as a telephone conferencing system. "Voice" has been used to signify a verbal chat as chatting in the computer field has traditionally meant an interactive communication via keyboard (Freedman & Morrison, 2006).

CHAPTER 2 - Review of the Literature

Introduction

To research, develop, and validate an online professional development facilitator's handbook, an extensive review of the literature began in the summer of 2002 and has continued through the summer of 2007. Due to the evolving nature of online professional development, resources have continued to be reviewed until the completion of the project in the fall of 2007. An extensive study has been conducted in all areas relating to online professional development in order to secure the most current information, pertinent research, and appropriate applications on this topic.

This literature review has been organized in six main sections. The research findings have been summarized in Chapter 2 in these sections: (a) existing literature about professional development in educational settings, (b) systems thinking, (c) learning communities, (d) adult learners, (e) constructivist learning, and (f) the need for an online professional development handbook. The six sections have provided a conceptual framework and rationale for developing an online professional development handbook. The first section has introduced professional development in educational settings and has defined professional development and online professional development. The first section has also discussed professional development standards and challenges that have confronted educational leaders in regard to professional development. The second section has addressed the relevance of systems thinking and the foresight and planning required in developing connectedness within an educational organization in regard to professional development. Section three has focused on learning communities and the interdependent relationships and shared learning that has occurred when learners have collaborated effectively. Section four of the literature review has discussed the unique characteristics of the adult learner and implications therein for the online facilitator. In the fifth section, the theory of constructivist learning has been discussed. The sixth section of the literature review has established a need for an online professional development facilitators' handbook.

Professional Development in Educational Settings

Professional Development

Block (2000), Darling-Hammond (2000), and Haycock, Jerald, and Huang (2001) have concluded that the most powerful variable in student achievement is the quality of the teacher in the classroom. School systems have long recognized that teachers' content knowledge and pedagogical skills have needed to be elevated in order to sufficiently address the increasingly stringent demands for improved student performance. Professional development has been defined as the process used to improve educators' skills and competencies in order to produce outstanding educational results for students (Hassel, 1999).

Fullan (1999) has stated that any school focused on improvement has had to consider professional development as a cornerstone strategy. "One constant finding in the research literature is that notable improvements in education almost never take place in the absence of professional development. At the core of each and every successful improvement effort is a thoughtfully conceived, well-designed, and well-supported [professional development] component" (Guskey, 2000, p. 4). The National Reading Panel (2000) has concluded that purposeful professional development that has been constructed to address teachers' knowledge, practices, and skills has improved student performance when it has been driven by careful analyses of student assessment data. "In-service teachers not only demonstrate improvement in their teaching, their improvement leads directly to higher achievement on the part of their students" (p. 5.13-5.14). "Well-prepared teachers who are confident of their instruction are indispensable for children's…success" (Learning First Alliance, 2000, p. 28).

Sparks (2002) has stated that professional development that has been shown to be effective has been characterized as engaging, ongoing, job-embedded, and has provided opportunities for collaborative reflection on personal practice. Sparks & Hirsh (1997) have concluded that professional development should be "results-driven and job-driven," "curriculum-centered and standards-based," and "directly linked to what teachers do in the classroom" (p. 4).

Effective professional development practices have adhered to consistent patterns revealed in the literature. The American Institute for Research (2003) has identified six factors of effective professional development and as a result, has improved instruction in both math and science: form, duration, collective participation, content, active learning, and coherence. Joyce

and Showers (2002) have found that teacher learning and strategy use have been greatly improved when coaching, study teams, and peer support have been provided. Reed (2005) has identified professional development practices that have proved to be effective: (a) teachers have scheduled times to meet and plan instruction, (b) teachers have been encouraged to observe in other classrooms, (c) teachers have opportunities to collaboratively analyze student assessment results and work products, (d) teachers have received training specifically tailored to meet individual teacher and collective school needs, (e) training has included study of scientifically based research and professional books, and (f) teachers have been provided with research of appropriate classroom materials and resources that have aligned with best practices.

The greatest difference between schools has not been evidenced in faculty talent or professionalism, but in school-level structures that have provided opportunities for educators to plan, reflect, and problem solve within a school-based professional learning community (DuFour, DuFour, & Eaker, 2006; Hord, 1997). For professional development to have impacted student achievement, training, materials, and time to learn have been allocated for teachers. Providing time for educators to meet and learn together has required that schools rework schedules and realign staff (Darling-Hammond & McLaughlin, 1995). Corcoran (1995) and Lieberman (1995) have found that learning has improved when sharing, discussion, and reflection on practice has been established as a routine in professional development.

In planning effective professional development, school leaders have focused on the structural richness and the overall "menu" of opportunities for professional learning and have purposefully shaped professional development so that educators have been involved in coherent learning experiences in multiple and ongoing occasions that have allowed for critical self-reflection on current practices (Darling-Hammond & McLaughlin, 1995; Hargreaves & Fullan, 1998).

Online Professional Development

Online professional development has been defined as professional development whereby educators have utilized a computer-mediated communication format to acquire and develop the knowledge and skills to become more effective in the classroom (British Educational Communications and Technology Agency [Becta], 2006). Moore and Thompson (1997) have described online professional development as pedagogical, instructional, and philosophical

changes in learning that have occurred while learners and instructors have been separated geographically. Relan and Gillani (1997) have defined online instruction as the "application of a repertoire of cognitively oriented instructional strategies implemented within a constructivist...and collaborative [virtual] environment" (p. 43).

The obvious difference between face-to-face professional development and online professional development has been the medium in which the information has been conveyed and how the interaction between and among participants has taken place. McIsaac (1996) has stated that "distance education is, after all, simply education at a distance with common frameworks, common conceptual concerns, and similar research questions relating to the social process of teaching and learning" (p. 408). McIsaac has predicted that distance learning theories will ultimately meld into current adult learning theories.

An essential difference that has led to increased learning growth in online professional development has been that online learners have increasingly taken responsibility for their own learning (Belenky & Stanton, 2000; Durrington et al, 2006). The sense of ownership of knowledge acquisition and responsibility for learning has been altered by physical separation and has subsequently led to a shift in the power and authority relationships between the online professional development facilitator and the learners.

In addition, online professional development has increased opportunities for learners to reflect on personal and professional practices. Reflective thinking has helped teachers more openly analyze and diagnose their practices and has stimulated teachers both intellectually and professionally. Since online communication has offered opportunities for asynchronous communication, participants' interactions with online study teams and partnerships have occurred away from the pressures of the school setting and have allowed online participants to make contributions to online networks when in a reflective frame of mind. When expressing ideas in written form in an online environment, teachers have taken more time and have purposefully constructed and conveyed their thoughts (Blanchette, 2001; Hannafin, Hill & Land, 1997; Hawkes, 2000; Sigala, 2005).

In an online environment that has promoted opportunities for reflection, teachers have discussed curricular and instructional matters (Markee, 1994) and have shared understandings that have clarified what being a teacher is all about, thus making a powerful impact on participants who have been new to the teaching profession (Selinger, 1997). For beginning

teachers, online cross-role partnerships have provided opportunities for collaboration between pre-service and seasoned educators, which has been critical for professional growth and socialization. Teachers have helped illuminate each other's thinking on many aspects of teaching, which has helped teachers to create, solidify, and then operate from their own professional identity.

Online professional development has enhanced teachers' critical thinking skills through cognitively stimulating, collaborative efforts with other online participants (Feldman, 2001; Kizlik, 1996; Taylor & Stuhlmann, 1998). Online participants have gained planning skills ((Bennett, Priest, & Macpherson, 1999), technical skills (Brown, 1999), and pedagogical skills (Spratt, Palmer, & Coldwell, 2000).

In an online environment where sharing has been commonplace, teachers have gained a rich treasury of teaching ideas through the responses from other online professional development participants. Teachers have assisted each other in solving problems in their classrooms and have sought and received aid from online peers (Bowman, Boyle, Greenstone, Herndon, & Valente, 2000). Computer-mediated communication has also made accessible a forum for expert debate, peer support, and access to information otherwise unavailable (Parker & Bowell, 1998). Participants' interactions with online facilitators and peers in designated collaborative online work areas have supported active, experiential learning within practical job-embedded application (Shearer & Rose, 1998).

Effective professional development has included more just-in-time, job-embedded, content-rich learning opportunities (NSDC, 2001). When online professional development has been aligned to teachers' specific content areas, teachers have examined their teaching approaches, have deepened their conceptual understandings, and have increased their use of learning strategies within their subject area (Ofsted, 2002; Selinger, 1997). Through careful examination of their own and their students' needs, educators have committed themselves to topics of learning that have been of intrinsic interest and have aligned their individual objectives for personal growth (Lieberman, 1995). Positive results have included ease of information availability and convenience, progression from "passive" to "active" producers of information, and camaraderie among online professional development participants who have been exposed to other perspectives (Barab, Thomas, & Merrill, 2001).

Online professional development has the potential to be a dynamic tool to provide the impact needed to construct knowledge and sustain growth over time (NSDC, 2001). Even though research findings regarding online professional development have been apparent, many online professional development practices have not made use of what has been learned through research. Implementation challenges have remained.

Challenges Confronting Educational Leaders

Darling-Hammond and McLaughlin (1995) have documented challenges confronting educators:

> The vision of practice that underlies the nation's reform agenda requires most teachers to rethink their own practice, to construct new classroom roles and expectations for student outcomes, and to teach in ways they have never taught before—and probably never experienced as students. The success of this agenda ultimately turns on teachers' success in accomplishing the serious and difficult tasks of *learning* the skills and perspectives assumed by new visions of practice and *unlearning* the practices and beliefs about students and instruction that have dominated their professional lives to date (Darling-Hammond & McLaughlin, 1995, p. 597, emphasis in original).

Spitzer (1998) has stated that "those involved in distance education grossly underestimate the difficulty involved in changing deeply entrenched teaching and learning habits, and consequently we grossly underestimate the difficulty of changing from a traditional classroom environment to a distance learning context" (p. 53). Kearsley (1995) has observed that Internet-based instruction has focused largely on student-content, self-study lessons, and materials rather than attend to designing and sustaining environments of communication where collaborative and individualized construction of meaning has been encouraged within communities of learning (Eastmond, 1995). The challenge for online professional development and charge for online professional development facilitators has been to establish online environments for learners who have recognized the complexity of developing individuals capable of coping in a changed world. As schools have been expected to meet nationally mandated student achievement goals, a culture of professional learning that has encouraged self-reflection, higher order thinking, and collaboration has been regarded as critical.

The lack of face-to-face contact has been a barrier for some online learners as physical presence has, in natural settings, provided social context cues for interpretation of the intent of spoken messages and has ultimately enhanced sensory stimulation and engagement. Since professional development via the Internet has limited, and in some cases, excluded face-to-face communication, messages have been misinterpreted and have created communication anxiety as participants have typically relied on social cues, especially facial expressions (Bates, 1995; Bossé & Rider, 2005; Eastmond, 1995; Hallet & Cummings, 1997; Hodge, Bossé, Faulconer, & Fewell, 2006; Mann, 2005; McPherson & Baptista-Nunes, 2004; Meyer, 2003; Wenger, McDermott, & Snyder, 2002).

In the online environment, physical presence has been absent. Instead, a "sense of presence" has been established. A sense of presence has been described as the awareness of personal identity and the understanding of who others are in relation to that personal identity. A sense of presence has mimicked proximity in the online environment (Bossé & Rider, 2005; Hodge et al, 2006; Mann, 2005; McPherson & Baptista-Nunes, 2004; Meyer, 2003; Wenger et al, 2002).

Online conversation has also involved personal risk-taking and has caused apprehension over how other participants will perceive the content or competence of participants' written communications. The public aspect of posting online has created discomfort as participants have felt vulnerable and exposed (Garmston, 2004).

In the online environment, social rules and norms for interaction have not been established and a relaxed, casualness has resulted in regard to communication. Feenberg (1987) has found that messages have often been left unanswered without the embarrassment that would have normally been felt if the transgression had occurred when meeting an acquaintance on the street and had failed to respond (p. 175). This disregard has been magnified among participants who have lacked self-confidence in online learning situations and has impacted their online contributions.

Piotrowski and Vodanovich (2000) have also identified problems with online learning. Multiple ongoing threaded online conversations, overload of information processing, infrequency of participation, emotional absorption, and tenuous technological skills have caused hesitation in some participants when approaching learning situations encountered in nontraditional forms. Lack of training, technical problems, concerns about privacy, and a focus

on technology rather than content have been noted as deterrents to some online learners (Piotrowski & Vodanovich). In addition, some individuals have been less successful learning independently, lacking the motivation and discipline required for online learning.

Osika and Sharp (2003) have determined certain technical skill competencies that have been necessary for success in an online learning environment and have created apprehension in some participants: fluency in communicating in an online environment, ease in navigating the Internet, and facility using word processing programs. Wang and Newlin (2002) have found that successful online participants have exhibited evidence of elevated internal locus of control and high levels of self-efficacy when confronted with the technological and instructional requirements of an online course.

Technology has provided a medium for learning in online professional development, but the charge for providing enriching online experiences has been the responsibility of the online professional development facilitator. Regrettably, online professional development has the potential to be as inappropriate and inflexible as any other form of inferior professional development practices. Online professional development facilitators have played an essential role in the success of online learners as the online professional development facilitator has had the responsibility to discern appropriate use of communication methods that have fostered a sense of community and have encouraged greater participant involvement (Shotsberger, 1997; Willis & Dickinson, 1997).

Standards for Online Professional Development

When teachers have had access to high quality, results-driven, content-specific professional development, student academic achievement has increased (Killion, 1999; National Commission on Teaching and America's Future, 1996; WestEd, 2000). "An investment in professional development produces greater increases in student achievement than comparable investments in reducing class size, increasing salaries, and hiring more experienced teachers" (National Commission on Teaching and America's Future, 1996, as cited in NSDC standards, p. 3).

Professional development, both face-to-face and online, has been designed to support educators in gaining knowledge and skills. Given the importance of face-to-face and online

professional development, much attention has been focused on *what* should be done and *how* it should be done (Sparks, 2001).

In education, standards have served as benchmarks to guide educational leaders in making decisions that have increased the substantive instructional quality of professional development. Standards have provided clarity of purpose for professional development and have created a common vision for developing educators' skills and knowledge (Kent & McNergney, 1999; Sparks & Hirsh, 1997).

In a joint effort to ensure that professional development in the online environment has addressed teachers' content knowledge and pedagogical needs, the National Staff Development Council [NSDC] and the National Institute for Community Innovations [NICI] created the Online Task Force and have reviewed the National Staff Development Council's Standards for Staff Development, Revised Edition (2001). NSDC and NICI (2001) have collaboratively developed standards that have been widely accepted as guidelines for online professional development. These standards have been divided into context standards (*where* learning has occurred), process standards (*how* learning has occurred), and content standards (*what* learning has occurred).

Context has been described as the environment that has supported the organizational structure where learning has been applied and where improvement has been expected. Context standards have outlined three critical elements that have been essential components in the online learning environment: a collaborative community, leaders who have facilitated continuous instructional improvement, and adequate specialized resources. Specialized resources have been defined as expectations of high levels of technology support (hardware, connectivity, technical support, and software) and human support (instructional leaders with specialized training in designing, teaching, and facilitating online professional development).

Online professional development process standards have provided direction in development, implementation, and evaluation of online professional development. Online professional development process standards have outlined expectations for ongoing teamwork, dialogue, product and project development, and research.

Online professional development content standards have outlined the knowledge (information, theories, principles, and research), skills (strategies and process to apply knowledge), attitudes (beliefs about the value of information or strategies and internal motivation

to engage in a particular practice), and behaviors (the consistent application of knowledge and skills) that have produced the highest achievement and performance in online learners (NSDC & NICI, 2001).

Nationally-accepted standards have identified and defined expectations of student and teacher performance.

Conclusion

Technology has altered the learning environment and has provided new structures to access knowledge and construct understanding through reflection on and communication about professional practices. Face-to-face professional development and technology-mediated professional development have been significantly similar. Both formats have required a high level of support and extensive resources to ensure effectiveness. Both have utilized many of the same learning processes, including collaboration, inquiry, dialogue, and reflection. Face-to-face professional development and online professional development have worked toward the same outcome: to build teacher capacity that will ultimately result in increased student achievement.

The next section has addressed systems thinking within an organization.

Systems Thinking: Developing Connectedness and Effecting Change Within an Educational Organization

Senge (1990) has defined systems thinking as a "discipline for seeing wholes" and has described systems thinking as a "framework for seeing interrelationships rather than things, for seeing patterns of change rather than static 'snapshots'" (p. 69).

"System design has a significant effect on performance. The improvement of student learning, therefore, has required a system that has been designed to initiate and maintain significant change in teaching and leadership" (Sparks, 2002, p. 4.6). Systemic change has required an understanding of the social structures and cultures that live within organizations (Schlechty, 2001). Understanding the interconnectedness of all parts of an organization has enabled educational leaders to recognize how decisions and actions have influenced both individual and group performance. "True reform that results in real change and improvement requires changing the organizational structure, the established procedure, [and] the way decisions

are made and resources allocated" (Duttweiler, 2000). By paying attention to the system and structures within which professional development exists, educational leaders have produced high performing learners (Sparks, 2002).

Changes, seemingly minor, have affected both the system as a whole and the elemental parts of the system in dynamically interacting ways. A concentrated focus on the interactions between inherent elements within a system for the purpose of assessing and understanding the unique relationships between the interactions has improved teacher performance (Sparks, 2002).

According to Fritz, "…every structure has within it an inclination toward movement, a tendency to change from one state into another" (Sparks & Hirsh, 1997, p. 7). Temporary change in individual behaviors has not achieved desired improvement, but changes in patterns of behavior that characterize and shape the organization has. Improvement within a system has required creating new structures that drive the organization, influence behavior, and improve performance. "Structures achieve their power in organizations through their influence on human behavior" (p. 7).

Changes that have been applied at critical leverage points within systems have produced considerable and enduring results. Once these leverage points have been located, educational leaders have analyzed the current state of performance, determined a desired outcome, strategized approaches and structures to achieve the desired outcome, and implemented a plan designed to produce the desired outcome (Senge, 1990; Costa & Garmston, 2002).

An authentic vision, when collaboratively crafted and embraced collectively as an organization, has produced a generative force for change. "Leadership and productive change begin with the creation of a compelling organizational purpose. But a compelling purpose alone will not result in *productive change*—change that makes a positive difference in student learning and in how schools operate. What's missing in most cases is a concrete, detailed vision statement that describes what the organization will look like when operating at its ideal best to accomplish its declared purpose" (Schwahn & Spady, 1998, p. 45, emphasis in original). To achieve goals that have been valued by the organization and developed collaboratively, has required a purposeful, structured, systemic plan centered on the organization's shared vision (Fritz, 1996). Systemic planning has had a direct impact on the learning and behaviors of the organization's members.

"Systems thinking has two important implications for staff development. First, staff development must help install systems thinking at all levels within the organization so that school board members, superintendents and other central office administrators, principals, teachers, and students understand the nature and power of systems to shape events. Second, educational leaders must understand the limitations of staff development that is divorced from a systems perspective and appreciate the central role of staff development within systemic change efforts" (Sparks & Hirsh, 1997, p. 8-9).

Rogers (2000) has concluded that instructionally effective, highly interactive experiences that have been flexible, equitable, and responsive to individual needs have successfully improved the effectiveness of existing academic programs. When enveloped within the larger scope of the organizational system, professional development has expanded teachers' understanding of content and, at the same time, strengthened school structures.

Conclusion

This section has shown that change within educational systems has been continuous. Systemic change, driven by an organization's collective vision and grounded in best practices research, has yielded sustained, purposeful reform. Professional development that has been aligned with and has supported the organization's vision has influenced teachers' thinking and behavior, which in turn, has enhanced teacher and student performance. Planning within a systemic structure has provided an organized, efficient procedure for initiating change and maintaining improvement and has secured a foundation that supports and sustains professional development.

The next section has clarified the relationship between systems thinking and learning communities.

Learning Communities

Educational organizations have become increasingly complex and have required more knowledge, skills, and experience than a single learner has been able to acquire as an isolated individual. The expertise and experience needed to be successful in multifaceted organizations has required a community of learners committed to and driven by a desire for continuous, systemic improvement (Gunawardena, 2004; Garvin, 1994). Senge (1990) has defined learning

organizations as "organizations where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning how to learn together" (p. 3). Sparks (2002) has described learning communities as communities of collaboration and practice "where staff members provide meaningful and sustained assistance to one another to improve teaching and student learning." The purpose of a learning community, according to Sparks, has been "to create sustained professional learning and collaboration in schools for the benefit of all students" (p. 6.2).

For teachers, enhanced performance has been achieved through face-to-face and online professional development within a learning community. Within these learning communities, systemic structures, such as careful planning, supportive leadership, and data-driven decision-making have been necessary elements to encourage and sustain the learning (Loucks-Horsley, Hewson, Love, Stiles, 1998; Sparks & Hirsh, 1997)

Marzano (2003) has identified teacher collegiality and professionalism as one of eleven factors that has most influenced student achievement. In professional development learning communities, teachers have felt supported by their peers as they explore, experiment, and reflect on the results. In collaborative environments where educators have been pragmatic, vulnerable, and reflective, teachers have successfully changed personal patterns of behavior, and in turn, have improved student performance and achievement.

Peck (1987) has described true community as "… a group of individuals who have learned how to communicate honestly with each other, whose relationships go deeper than their masks of composure, and who have developed some significant commitment to 'rejoice together, mourn together,' and to 'delight in each other, [and] make others' conditions our own'" (p. 59). When learning communities have regularly engaged in authentic interactions where they have collectively analyzed student achievement data and have recommended changes in classroom practices and procedures, school systems have successfully addressed teacher inadequacy and have initiated systemic improvement. When individuals have shared the responsibility for learning, the communities have evolved into collegial, interdependent teams that have been instrumental in creating high performing systems. The potency of the learning community has been substantiated in the commitment to collaboration as a means for reform and has been

established in the original structures, processes, and leadership styles within the organization (DuFour et al, 2006).

Amit (2002) has described community as multiple, complex, long-standing interpersonal relationships of intimacy and familiarity that have invoked an emotive charge. Mynatt, O'Day, Adler, and Ito (1998) have defined community in terms of bounded sets of relationships. Etzioni and Etzioni (1999) have found that learning communities have two attributes: bonding and culture. Etzioni and Etzioni have further defined bonding as a web of affect-laden relationships that have included a number of individual, interwoven affiliations that have reinforced and supported one another, rather than a series of one-on-one relationships.

Senge (1990) has identified the phenomenon of "reciprocal learning" where learners have experienced professional growth by making their own thinking explicit and subject to public examination. In reciprocal learning cultures, educators have attempted to understand underlying sources of problems and then have found solutions through shared inquiry, personal and group reflection, and analysis of research and data (Darling-Hammond, 1989). Learners in reciprocal cultures have explored the reasoning that has driven personal beliefs and assumptions. Learners have then been challenged to examine the evidence upon which those views have been based.

Hargreaves (1994) has noted that creating collaborative work cultures and promoting collegiality among educators has been a complex enterprise. Robinson and Darling-Hammond (1994) have found that cultures of collaboration and shared decision-making have not been prevalent. However, aligning organizations to support collaborative efforts has enabled cultural and structural changes at individual and organizational levels (Sirotnik, 1991). Skeptics of collaborative cultures have focused on difficulties of implementation, in particular, finding and isolating increments of time when educators can work together.

Robinson and Darling-Hammond (1994) have recognized characteristics of successful collaborative cultures as identified by Van de Water (1989) and having parallel characteristics of learning organizations and successful partnerships (Senge, 1990). The essential characteristics have been: mutual self-interest and common goals, mutual trust and respect, shared decision-making, clear focus, manageable agenda, commitment of top leadership, fiscal support, long-term commitment, dynamic nature, and information sharing (Robinson & Darling-Hammond, 1994, pp. 209-216).

Educators have created professional networks for the purpose of collegial growth through

shared experiences, discourse, and experimentation (DuFour et al., 2006. Lieberman and McLaughlin (1992) have found that networks within a learning community have provided structures for learning and have been organized based on intrinsic interests: subject matter, instructional methods, or school improvement and restructuring efforts.

Involvement in networks beyond the local organization has created discourse that has encouraged professional exchanges among educators and has resulted in new forms of collegiality, expanded understanding of leadership, and enhanced perspectives of students' instructional needs. Networks have also provided opportunities for educators to be both learners and partners in constructing and strengthening knowledge. Professional networks have focused on assessment, curriculum reform, instructional strategies, action research, and the process of change.

Lieberman and McLaughlin (1992) have found that community networks have common characteristics. Community networks: (a) have a clear focus with a specific, targeted need, (b) have offered a variety of learning opportunities, applications, and activities while providing flexibility and choice, (c) have created an environment where discourse has provided a broad and deep understanding of subject matter (Lichtenstein, McLaughlin, & Knudsen, 1991). Community networks have also cultivated leadership skills and have provided "critical friends" who share experiences and examine and reflect on practices.

Teachers who have been members of a strong professional community have reported a high sense of professional efficacy and have felt personally and collectively successful with students. Teachers have credited professional discourse within a supportive learning community as a source of motivation and the reason for longevity in exceedingly demanding teaching situations (Goddard, Hoy, & Woolfolk-Hoy, 2004; McLaughlin, 1994).

Researchers have found that learners who have experienced high levels of interaction within a community have exhibited improved positive attitudes (Garrison, 1992; Hackman & Walker, 1990; Schaffer & Hannafin, 1993) and have increased levels of achievement (McCroskey & Andersen, 1976). Opportunities for interaction have increased effectiveness (Bates, 1995), have elevated levels of cognitive processing (Garrison, 1992), have cultivated collaborative and cooperative learning skills (Berge, 1995), and have encouraged intrinsic motivation through active engagement of the learner (Schaffer & Hannafin, 1993; Wagner, 1997).

Allen (1997) has found that professional development facilitators have elevated participants' effectiveness in four ways.

1. Facilitators have empowered learners to assume responsibility for their own learning by allowing learners to operate as partners in the learning process. By doing so, learners have been more motivated to contribute to the community. Facilitators have consciously communicated in an open, friendly, approachable manner to purposefully diminish feelings of isolation.

2. Facilitators have remained knowledgeable about curricular areas and current research on adult learning (Berge, 1998).

3. Facilitators have offered appropriate feedback and encouragement. Learners have felt validated and encouraged as individuals by facilitators who have demonstrated a continual positive presence in learner discourse (Tagg & Dickinson, 1995). Facilitators who have consistently provided positive feedback have enabled learners to take risks and experiment with innovative projects and academic challenges. When errors have occurred, participants have learned from their mistakes because learners have not feared being subjected to embarrassment by the facilitator. As a result, the process has been meaningful for both the facilitators and the learners (Allen, 1997).

4. Facilitators have been humble role models.

Online Learning Communities

Online social networks have helped form new structures of association through virtual, "imagined communities" (Slevin, 2000). Anderson (1991) has discussed the concept of "imagined communities" where "belief in [the imagined communities'] presence is their only brick and mortar" (p. 15). Exchanges within interpersonal relationships have provided the structure, the virtual brick and mortar so to speak, for online learning communities (Haythornthwaite, 2002).

Dede (1996) has asserted that online communities have been powerful and effective instruments for enhancing distributed learning and creating supportive, collaborative virtual networks. "One of the most powerful elements of using the Web for teaching is the ability to engage learners in an interactive format" (Hazari & Schnorr, 1999, p. 31). Piaget, Rotter, and Vygotsky have acknowledged that interaction, both socially and intellectually, has been essential to the process of learning (Saunders, Malm, Malone, May, Oliver, & Thompson, 1997;

Vygotsky, 1978). "Peer interaction within an educational setting is a critical variable for cognitive development" (Saunders et al., p. 12, 1997). Gardner (1996) has also found that intelligent, productive learning has occurred only in conjunction with other learners.

Effective communication in educational settings has been reciprocal, voluntary, and interactive. These factors have inherently redistributed the balance of control (Belenky & Stanton, 2000; Dede, 2004; Durrington et al, 2006). Learners in reciprocal cultures explore personal beliefs, values, and assumptions and challenge one another to examine the evidence upon which those views reside (Cranton, 2006). Online communities are a powerful and effective instrument for enhancing distributed learning and creating supportive, collaborative learning networks (Anderson, 2004; Dede, 1996). Learning, distributed across an online format, has enriched, expanded, and even transformed human connections by increasing the amount and quality of contact that has been made available to online learners (Reudenstine, 1997), emphasizing not the distance, but the connections that have been made possible by communication technologies (Dillon & Cintron, 1997; LaPointe & Gunawardena, 2004).

Facilitating interaction virtually has been both a challenge and an art (Moore & Thompson, 1997). The key has been to optimally utilize the interactive capabilities of the online medium (LaPointe & Gunawardena, 2004) so the individual has considered himself a worthy member who has been valued by the community (Gorsky & Caspi, 2005). As a result of feeling like an essential member of an interactive community, participants' perceptions of the quality and value of their learning have been significantly enhanced (Anderson & Garrison, 1995; Zirkin & Sumler, 1995).

Hobaugh (1997) has found that the socialization component that has been the expected norm in face-to-face professional development has sometimes been ignored in online professional development, especially if facilitators have neglected to leverage the full potential of interactive technologies and incorporate online resources such as instant messaging, web cameras, chat rooms, blogs, vlogs, etc. (Richardson, 2006). Acknowledging this concern, Simonson (1995) has stated that facilitators who have created a "highly interactive educational experience that stimulated social-dialogical interaction that was scholastic and professional, yet lively, friendly, and very social...seemed to facilitate personally relevant learning, professional development, and collegiality, as well as a fair amount of fun" (Bragg, 1999, p. 1). These

facilitators have effectively made "the experience of the distance learner as complete, satisfying, and acceptable as that of the local learner" (Simonson, 1995, p. 12).

Computer-mediated instruction and learning has had a positive effort-to-interest relationship. Online participants' motivation, defined as enthusiasm, determination, and a sense of ownership, has been attributed to amount of interaction that they have been exposed to on the Internet—both synchronous and asynchronous (Bennett et al, 1999; Bowman et al., 2000; Duchastel, 1997; Ellis & Phelps, 2000; Selinger, 1997; Watabe, Hamalainen, & Whinston, 1995). The attitudes and ideas teachers have held about the Internet have been found to shape and formulate their personal perceptions and understandings of the Internet as a teaching resource (Bennett et al).

Hillman (1999) has compared interaction patterns in face-to-face classes with interaction patterns in computer-mediated communication. Facilitators in face-to-face classes have spoken seventy-three percent of the sentences, while facilitators in computer-mediated environments have produced only forty-nine percent. In addition, interaction patterns in computer-mediated classes have more closely resembled discussion, whereas the patterns in the face-to-face classes have resembled recitation. In this study, Hillman has quantified the significance of the expanded role of the learner and has validated the reduced role of facilitator in online interactive communities. "…perhaps the most lasting effect of computer-based instruction on instructional design and development will be the impetus it has provided to interactive instruction" (Jonassen, 1985, p. 7).

Three types of interaction have been identified: (1) learner-instructor interaction, defined as interaction that has improved learner motivation and dialogue between the content expert and the learner (McIsaac, 1996); (2) learner-content interaction, defined as interaction that has allowed the learner to gain substantive knowledge; and (3) learner-learner interaction, defined as interaction that has encouraged the exchange of knowledge and understandings among learners who have been engaged in a common intellectual endeavor (Moore & Clark, 1989; McIsaac). Lohr (2000) has discussed a fourth type of interaction: the learner-interface interaction, defined as an interaction where the learner has used technology to access and participate in instruction and to communicate with others.

Kaupins (2002) has found that adult learners have preferred participative, interactive learning opportunities. Hawkes (2000) has stated that the online environment has sustained

dialogue-driven collaboration and has contributed to teachers' knowledge. The ubiquitous structure of the Internet has improved teachers' abilities to learn autonomously and to work in a collaborative environment with fellow learners with diverse educational backgrounds and settings. Online professional development has been regarded as an alternative means of seeking new teaching ideas for both pre-service teachers (Selinger, 1997) and experienced teachers (Spratt, Palmer, & Coldwell, 2000), has actively supported and facilitated the empowerment of knowledge among teachers, and has been shown to improve teaching, and thus the learning of the students (Ellis & Phelps, 2000).

In interactive environments, participants have been expected to respond to content and to other participants and facilitators in discussions. In their responses, participants have had to form thoughts and ideas and express them coherently and carefully. Participants have had to reflect on others' ideas and respond thoughtfully and appropriately. The responses have then been available for all parties to see, to absorb, to question, and to evaluate in relation to the group's needs and learning outcomes (Entwistle, 1995). As a result of these expectations, learners have generated richer, longer, and more complex responses to online content, questions, and ideas when using computer-mediated communication than in face-to-face environments (Romiszowski & Jost, 1989).

Allen (1997) has found three instructional moves that have encouraged participant interaction and have distributed the responsibility for learning within the online community: (1) facilitators have encouraged and guided online discussions by asking questions that have empowered participants to question each other; (2) facilitators have required group interaction that has been relevant to and has focused on the current topic with defined short-term responsibilities for participants; (3) facilitators have encouraged peer collaboration and learning through instructional structures that have gradually released responsibility to participants who have then crafted their own online learning experiences.

To encourage interaction, Nunn (1998) has recommended that facilitators design questions that have addressed the content to be covered while kindling critical thinking and generating lively dialogue among participants. To generate dialogue, Collinson, Elbaum, Haavind, and Tinker (2000) have recommended that online professional development facilitators ask thought provoking questions to produce deeper understanding, summarize information to organize thinking, and provide specific feedback designed to promote deeper reflection.

In an online medium, the interpretation and integration of messages has relied heavily on dialogue. Lipponen (2002) has emphasized that dialogue has had to supplant absent nonverbal social cues, namely facial expressions, gestures, and intonation of speech.

Fairclough (2003) has found that participants who have intentionally made connections to others' thinking in online correspondence have been more likely to have been perceived as open and approachable. Costa and Garmston (2002) have referred to the form of language intonation that signals accessibility as approachable voice. Conversely, use of authoritative intonation has generally been perceived as absolute and has been offsetting. Costa and Garmston have referred to this type of language intonation as credible voice. Fairclough has found that the use of credible language has projected authority and confidence in correspondence, while the use of dialogical, approachable language has signaled openness.

Vygotsky (1978) has emphasized the critical role language has played in sharing ideas and communicating knowledge. Modalized language, also referred to as exploratory language, has allowed for greater flexibility in thinking. Modal words, such as 'may', 'might', and 'consider', have provided opportunities for more possibilities, interpretations, and resolutions. Non-modalized words, such as 'should', 'must', and 'ought' have signaled closure and relational distance (Gustafson, Hodgson, & Tickner, 2004).

Fairclough (2003) has found that modality choices have played a significant role in posturing identities in online learning environments. Shotter (1993) has stated that identity construction and personal growth have occurred within and through dialogue. Through language, learners have explored relationships and in doing so, have tested and confirmed their individual and their social identities. Spears and Lea (1992) have stated that in networked learning environments social identity has developed from an individual's identity as part of a group or in an individual's acceptance of a social role within the interactive community.

In an online learning community, use of authoritative voice and language in discourse, coupled with implied expectations of obligatory consensus, has polarized participants. Dialogue where voice and language choice have signaled open, equal relationships has welcomed participants to share views and opinions and has encouraged a dialectic method of inquiry, that has been Socratic in nature (Gustafson et al, 2004). Dialogue, as a learning tool, has allowed participants to deepen understanding, share commonalities, build trust, shape visions, make connections, and strengthen community.

Success in professional development has been dependent on three facilitator functions: contextualizing, monitoring, and meta-communicating. Contextualizing has been defined as the basic design of a networked learning environment and crucial to establishing a social structure where learning has occurred and where learners have engaged in task-oriented interaction. Contextualizing has been a necessary component to overcome the lack of face-to-face communication. Monitoring the online dialogue has involved recognizing, encouraging, and prompting individual contributions. Meta-communication has included prosodic cues, bodily motions and gestures, temporal and rhythmic coordination of utterances, and facial expressions that have signaled interactive engagement that has been critical in human dialogue (Costa & Garmston, 2002; Feenberg, 1989; Koiso, Shimojima, & Katagiri, 1998). Since meta-communication has been absent in online environments, the online professional development facilitator has been required to create an interactive learning environment without access to meta-communication cues and the insight acquired through extemporaneous language and body signals.

Participants' confidence has weighed heavily on their willingness to take risks and share with others in the online environment. Muirhead (2004) has stated that facilitators who have established low-risk online environments have allowed for diversity of thought and critical inquiry. In equitable environments, learners have felt comfortable questioning others' viewpoints and dialogue patterns have signaled safety. Participants have perceived their learning environment to be based on intimacy, immediacy, and trust and participants have come to view diversity as productive and essential (Cranton, 2006; Gustafson et al, 2004).

Hase (2003) has found that facilitators who have been open and friendly have alleviated participants' feelings of isolation. Conversely, facilitators who have been perceived by participants as emotionally detached have greatly elevated the possibility for apprehension and misunderstanding. In addition, feedback from the facilitator that has been perceived as too formal has been misinterpreted and distorted by participants. Muirhead (2004) has added that participants who have been overly polite in online conversations have undermined genuine sharing. To overcome these barriers, experienced facilitators have modeled appropriate online dialogue and have established an online tone that has encouraged authentic inquiry and reflection. The online facilitator has accurately assessed the needs of participants and has offered emotional support when necessary and has tendered intellectual challenge when required.

"Students should be given a chance to assess their comfort level of structure while learning at a distance and decide to what extent they need direct contact from the instructor. The learner's ability to engage in 'dialog' with the instructor is an essential feature of distance education systems" (Saba, 1998, p. 1). Jaffee (1997) has found that learners who have come from traditionally oriented degree programs have needed a period of adjustment as they have moved from the physical presence of instructors and classmates to the virtual online presence of facilitators and participants. Repman and Logan (1996) have concluded that "both students and instructors must be given as many opportunities as they feel they need to move beyond discomfort. This may involve creating onsite support, online consultations, and/or written or video support materials" (p. 38).

Parker and Bowell (1998) have found that participants' confidence has increased and feelings of isolation have decreased when participants have had opportunities to share problems and successes in online discussions. Feenberg (1987) has found that excessive facilitator interaction has diminished the quality of discussion as participants have become focused on the facilitator's thinking and opinions. "The online teacher therefore leads most effectively by encouraging personal viewpoints and diversity of opinion rather than through offering authoritative solutions to the problems posed in the course" (p. 184). Shank (1998) has recommended that the facilitator contribute a mere five percent of the online discussion comments, but has cautioned that teaching and learning has been a dynamic process that transcends formulaic boundaries.

Online professional development participants who have displayed competence with online interactivity have exhibited certain characteristics that have promoted collaboration and interaction with other online participants. Participants skilled at online interactivity have provided "mutual support" to other teachers (Ellis & Phelps, 2000), have taken the initiative to make appropriate personal disclosures to fellow participants and have provided emotional support to other participants (Hughes, 2001), and have offered encouragement, recognition, and positive feedback on ideas, materials, and classroom practices that other participants have contributed (Tsui, Wu, & Sengupta, 1996).

Harasim, Hiltz, Teles, and Turoff (1995) have found that when facilitators have been "actively involved—responding regularly, posting new material, encouraging activities and discussion—students have responded with enthusiasm and regular participation" (p. 43). Active

involvement by the facilitator has provided participants with "a rich, safe, and self-sustaining environment for implementing changes in instructional practice" (Shotsberger et al., 1997, p. 2). By modeling involvement, the facilitator has established a framework that has allowed participants to also be active and free to share with other participants. Hawkes (2000) has cautioned that online participants are more likely to contribute to online discussions with a facilitator who has maintained a very light touch than when the facilitator has exercised an interventionist approach.

To ensure success, Collis (1998) has recommended that communication patterns be flexible and adaptable for facilitators and participants. Facilitators have been available for participants' needs, but Collis has added that facilitators have created communication schedules as needed.

Online learners have been found to participate more readily and more openly in online discussion groups if their online contributions have not been assessed (Moody, 2000). However, Hallet and Cummings (1997) have found that participants have not contributed beyond required assignments and have not posted additional comments when the work has not been graded. Heath (1998) has stated that participation levels have varied and comments have differed in quality. In addition, irregular contributions by individual participants has had a negative impact on the community as a whole. Over the course of the professional development course, Heath has found that online participation had declined and fewer comments had been posted even when the course grade had required that participants consistently share meaningful comments. "Even if the students in an online course possess strong motivation and good writing skills, there is still the matter of insuring that enough students are participating, thoughtfully, in the online discussions" (p. 13).

Technology has changed the nature of interaction and instruction and has required the facilitator to become a collaborative co-learner and guide rather than the center of learning (Katz & Associates, 1999; Rogers, 2000). Tagg (1994) has defined the role of a facilitator as "one that motivates, provides support, and stimulates, …guides, or "weaves' the topic in order to keep it on the right track…, provides strong leadership…, coaches students on communication skills…, facilitates discussion…and secures continuity in a medium in which a sense of overview may be lost…, while simultaneously attempting to 'humanize the technology' and act as a trouble-shooter…" (p. 40). In essence, the facilitator has become the teacher, host, and community

organizer and has been responsible for guiding discussions, stimulating participation, and offering intellectual leadership (Mason, 1991).

The transition from knowledge expert to learning partner has required facilitators who have been capable of equipping participants for self-directed knowledge acquisition. Successful facilitators have modeled their own learning habits and personal pursuit of knowledge as they have interacted with participants and shared responsibility for participants' growth (Jones, Valdez, Nowakowski, & Rasmussen, 1995). Facilitators have stretched participants intellectually, but have been highly conscious about overwhelming or confusing participants. Online professional development facilitators have exhibited strong administrative skills that have included clear policies and procedures for participant work. Participant anxiety has been lessened when facilitators have offered appropriate guidance.

Although the online format has provided the environment and the potential for interaction, true intellectual engagement and authentic interaction has been fully dependent on purposeful human involvement and the immediacy of the facilitator (Fulford and Zhang, 1995). Immediacy has been defined as the measure of psychological distance between the communicator and the object of the communication. Immediacy has been shown to create a sense of social presence conveyed both verbally and nonverbally (Gunawardena & Zittle, 1997). Christophel (1990) and Gorham (1988) have determined that immediacy has been an effective predictor of participant learning. Immediacy has contributed to learner satisfaction and learning in the online environment (Boverie, Nagel, McGee, & Garcia, 1998).

Gunawardena and Zittle (1997) have found that social presence has been a strong predictor of learner satisfaction in a computer-mediated environment. In the context of telecommunications interactions, social presence has been defined as the degree to which a person has been perceived as authentic based on interactivity between and among participants (Gunawardena & Zittle; Rafaeli, 1988). Cutler (1995) has described "sense of presence" as an awareness of personal identity and an understanding of who others are in relation to that personal identity. A sense of presence has required reflection on one's concept of self, followed by shared personal disclosure. Disclosure of personal information has encouraged others to reciprocate, has enabled greater understanding and collegiality, and has embedded a feeling of trust and support. In essence, "disclosure creates a kind of currency that is spent to keep interaction moving" (p. 18). As a result of facilitator and participant personal disclosure, online learning communities

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have successfully bound together guided by agreed upon conventions and norms for the common purpose of exploring issues of interest (Gunawardena & Zittle).

Groups with a high level of trust have actively supported one another. Trust has been demonstrated by listening with the intention to understand and responding in a timely manner, sharing responsibility for learning, and displaying a commitment to the group (Ellison & Hayes, 2006).

In a trust-filled online environment, a learner-centered model of teaching and learning has regarded participants as academic partners who have experienced personally relevant, self-initiated, meaningful learning in a collaborative environment (Milheim, 1995). A learner-centered model has required facilitators to alter their standard teaching methods. "[Facilitators] will need to become researchers of [learner's] perceptions, designers of multifaceted assessment strategies, managers of assessment processes and consultants assisting [learners] in the interpretation of rich information about their learning" (Boud, 1995, p. 42).

Learning has been a social process as well as an intellectual process (Dede, 1996). Gunawardena (1995) has found that technology has created the possibility for unique social climates that have been unlike the climates in traditional face-to-face instruction. These social climates have had a direct impact on online interactions and group dynamics. "Team learning is vital, because teams, not individuals, are the fundamental learning unit in modern organizations. This is where 'the rubber meets the road'; unless teams can learn, the organization cannot learn…When teams are truly learning, not only are they producing extraordinary results, but the individual members are growing more rapidly than could have occurred otherwise" (Senge, 1990, p. 10).

When online professional development facilitators have planned for online activities that have required participants to work together on a group project, the facilitator has created a team-oriented environment and has cultivated an authentic purpose for participants to be interactive (Findley & Findley, 1997). Facilitators who have consciously designed interactive group activities have enabled participants to commit to the team project and have allowed the participants to create their own support systems within the community (Cronje, 1999; Feenberg, 1987). To ensure that teams have remained cohesive and have maintained collaborative work relationships in the online environment, facilitators have distributed responsibilities and have balanced the influence held by individuals within the group (Johnson-Bailey & Alfred, 2006).

Brown (2001) has identified a three-level progression for creating online communities where participants "were part of a long, thoughtful, threaded discussion on a subject of importance after which participants felt both personal satisfaction and kinship" (p. 1). Through this process, participants had experienced a sense of camaraderie defined as a "long-term or intense association with others involving personal communication" (p. 7).

The first level of community had been established when participants have made online acquaintances that some participants had labeled as "friends." In this first level, participants have stated that they had gravitated toward some individuals online with whom they found similarities, such as common locations or academic backgrounds, mutual commitments and motivation, or shared circumstances. Brown (2001) has found that participants who had discovered commonalities had started interacting regularly. The recurrent communication had been done, in part, as a course requirement where participants had been expected to react to other participants' online contributions. The frequent communication had not necessarily been due to the establishment of a true community, however.

The second level of community has been characterized by a feeling of kinship with other participants based on inclusion in significant discussions. Participants had felt personal satisfaction in their own knowledge and ability to communicate when discussion ideas had been offered, accepted, and considered worthy of further discussion by other participants.

The third level has been characterized by a sense of camaraderie that had been achieved after long term, intense personal communication with other participants. The third and highest level of community has been recognized when participants who had been through multiple courses together, had communicated beyond the online professional development course by telephone, e-mail, or face-to-face meetings.

A graduating degree of engagement and commitment had distinguished each of the three levels of community. At the third level, participants had placed a high priority on the course, had desired to get to know and learn from each other, had been highly motivated, had participated regularly in a timely fashion, and had demonstrated respect for all participants. Elevated levels of community and increased participant engagement have been acknowledged as parallel occurrences. Wegerif (1998) has found the conferment of community has helped participants feel a sense of belonging.

Rovai (2002a, 2002b) has identified four elements that have characterized educational communities: spirit, trust, interaction, and learning. Spirit has been defined as a sense of belonging based on bonding and friendship (Etzioni & Etzioni, 1999). Trust has been evident when participants have relied on communication and have believed that participants have demonstrated a sincere desire to assist other participants (Ellison & Hayes, 2006; McConnell, 2002; Tschannen-Moran, 2004). Interaction has involved both work relations and social communications that have been initiated by the facilitator or by the participants. Learning has been a shared goal as community members "grow to feel that their educational needs are being satisfied through active participation in the community" (Rovai, 2002b, n.p.)

Wegerif (1998) has listed conditions that have maximized the social aspects of learning within a community: (1) overcoming barriers of differential access to the online learning environment; (2) encouraging the use of common language and tone; (3) gradually moving from structured instruction to open instruction to allow participants to become familiar with the online environment and other participants; (4) creating opportunities for participant-led learning experiences; (5) allowing time for reflection on learning; and (6) ensuring that the online platform has allowed for structured discussions.

In effective online professional development, learners have been characterized as explorers, producers, cognitive apprentices, and occasional teachers (Jones et al, 1995). When learners have been actively engaged in pursuing interests that have augmented personal growth, the learners have been inspired to go beyond minimal assignments and have produced at higher levels and demonstrated learning in distinctive ways. In collaborative, supportive environments, teachers have reported greater job satisfaction, higher overall morale, and lower absenteeism (Lee, Smith, & Croninger, 1995).

Sandholtz (2001) has advised that teachers work in teams when engaged in professional development activities. Haythornthwaite (2002) has found that participant pairings with weak relational bonds have been likely to confine their interactions to class-mandated media. Strongly tied pairs have found many ways to communicate, but also have *needed* many ways to communicate. For these pairs, the question has not been which connections, but how many connections.

Klemm & Snell (1996) have advocated the use of collaborative learning practices where participants have been expected to perform tasks that can only be accomplished by higher level

learning processes leveraged by a group that has worked to assist each other to successfully complete the task. "…no individual can know enough to solve the tough problems we are facing as workers and managers, in science or society. As learners, our knowledge is expanded through interactions with a diversity of other learners. The learning community becomes a vehicle for bringing this diversity of learners into a dialogue" (Comstock & Fox, 1995).

Goddard, Hoy, and Woolfolk (2000) and Lee et al. (1995) have found that when teachers have a shared sense of group efficacy, the teachers' own sense of personal competence has been elevated. Collective group efficacy has differed from teacher efficacy in that "it's the perceptions of teachers in a school that the faculty as a whole can organize and execute the courses of action required to have a positive effect on students" (Goddard et al, 2004). As personal regard and trust have increased for colleagues, the teachers' level of commitment and vigor to the vision of their school has improved which has favorably impacted student achievement scores (Bryk & Schneider, 2004; Lee et al.).

Gilbert (1996) has cautioned that the desirable, yet potentially isolating "anytime, anywhere" approach to learning available through technology has ignored the importance of learning through collaboration with others. Spitzer (1998) has cautioned that "an excessive fascination with technology has played a role in neglecting the social dimension of learning" (p. 53). Dede (2000) has reinforced the need for a sense of community and has stated that widespread implementation of technology-based innovations has required, and has been enhanced by, reflective, interpretive dialogue in a knowledge-building community (p. 298).

Conclusion

This section has shown that ongoing professional development driven by context-specific needs of an educational organization has raised academic achievement and improved teacher practices. When educational systems have had honest dialogue about student work, have assessed student and teacher needs, have changed practices, and have become cultures that have valued thinking, improvement has occurred.

Professional learning communities have created cultural norms that have promoted productive, supportive relationships that have allowed participants to reflect on current beliefs and practices in order to make skilled decisions that have fostered learning and growth. Learning within a community has cultivated a commitment to other learners that has energized and

sustained the improvement process. When all community members have believed themselves to be learners and have invested personally in the learning process, purposeful professional development has occurred.

The next section has discussed the concept of the adult learner and professional development practices that have engaged and supported the adult learner.

Adult Learners

Andragogy, the theory of adult learning, has been described by Malcolm Knowles (1980) as self-directed learning where adult learners have initiated a personal analysis of their own learning needs, formed their own personal learning goals, identified resources needed for increasing their learning, applied learning strategies, and evaluated their own learning outcomes.

Brookfield (1986) and Dirkx and Prenger (1995) have further explored the adult learner and have found that adult learners have common characteristics.

1. Adult learners have been voluntary learners who have been goal-oriented. They have performed at their best when they have been encouraged to be self-directed and in charge of their own learning.

2. Adult learners have been diverse and have brought a wide range of life experiences to the learning event. They have used these life experiences as resources that have enabled them to understand new information and create their own more elaborate personal knowledge structures.

3. Adult learners have been task-oriented and problem-centered and have appreciated authentic, meaningful learning opportunities that they have perceived as applicable to their own personal needs. Adult learners have not tolerated learning objectives that have lacked a direct application to their own lives, professional or personal. Thus, adult learners have expected that time devoted to professional development has to have been time well spent.

4. Adult learners have generally been self-motivated and have appreciated being involved in determining not only *what* they would learn, but also *how* they would learn. They have preferred to have some degree of control of their own learning.

Knowles (1980) has distinguished between teacher-centered instruction and learner-centered instruction and has acknowledged that learner-centered facilitation has been the more

effective practice because learner-centered facilitation has regarded adults as collaborative partners in the learning process. Brookfield (1986) has stated that in a learner-centered environment, the learner and the facilitator have shared the responsibility for the learning. Both the learner and the facilitator have contributed in creating and maintaining the learning environment. The learner has fully expected to assist in determining the climate and structure of the learning environment, the instructional methods that have been utilized, the direction of study based on their own perceived needs and objectives, and the methods of evaluation. Rodes, Knapczyk, Chapman, and Haejin (2000) have concluded that a "tactful, gradual introduction of Web-based technologies can guide and enhance the learners' transition from a traditional model of pedagogy in which their role has been passive, to a model in which they have taken a full, active role in directing and achieving their own learning" (p. 7) reinforcing Knowles' (1975) theory of learners becoming self-directors of their own learning.

McCombs and Whisler (1997) have defined learner-centered as "the perspective that couples a focus on individual learners (their heredity, experiences, perspectives, backgrounds, talents, interests, capacities, and needs) with a focus on learning (the best available knowledge about learning and how it occurs and about teaching practices that are most effective in promoting the highest levels of motivation, learning, and achievement for all learners). This dual focus then informs and drives educational decision making" (p. 9).

Expanding on Knowles' andragogy theory, Hase and Kenyon (2000) have stated that heutagogy, a concept of self-determined learning, has been based on the assumption that adult learners have the potential to continue to learn throughout their lifetimes. In the right environment, adults have been motivated to go beyond core knowledge and basic skill acquisition to a more holistic evolution of their own capability where they have sought solutions to ambiguous situations (Stephenson & Weil 1992). Hase (2003) has acknowledged other models that have aligned with heutagogy philosophy: the system-environment interface (Emery & Trist, 1965), learner-managed learning (Graves, 1993), work-based learning (Hase, 2003), and knowledge management (Davenport & Prusak, 1998).

Citing Rogers' (1969) student-centered approach, Hase and Kenyon (2000) have identified five key principles of heutagogy:

1. Teachers cannot teach another directly. Teachers have only facilitated learning;

2. Learners have learned significantly only those things that they have perceived as being involved in the maintenance or enhancement of the structure of self;

3. Experience which has been assimilated, that has involved a change in the organization of self, has tended to be resisted through denial or distortion of symbolization, and the structure and organization of self, has appeared to become more rigid under threat;

4. Experience, which has been perceived as inconsistent with the self, has only been assimilated if the current organization of self has been relaxed and expanded to include it; and

5. The educational system, when [utilized] most effectively, has promoted significant learning in which threat to the self, as learner, has been reduced to a minimum (p. 2).

A learner-centered environment has been described as dynamic and flexible, has developed as the participants have negotiated their own learning, and has been focused on inquiry. The facilitator has provided resources, has asked questions, and has created a safe, democratic environment where learning has been constructed and valued. Participants have been expected to collaborate, to be actively engaged, and to ask questions. In essence, the learners have helped create and structure the curriculum.

Educators have followed a seven step process in adult learning practices. Educators have: (1) established a cooperative learning environment; (2) provided structures for communal planning; (3) diagnosed learner needs and interests; (4) formed learning objectives based on the diagnosed learners' needs and interests; (5) generated a plan for achieving the objectives using sequential, scaffolded activities; (6) executed the plan by matching methods, materials, and resources to the learners' needs and interests; and (7) assessed the quality of the learning and the learning experience while monitoring learners' needs for further study (Knowles, 1980).

Professional development for the adult learner has been guided by Knowles' assumptions that have advocated a shift from teacher-centered instruction to learner-centered learning where participants' journeys for growth and discovery have provided personal value, real world and content relevance, and intrinsic motivation. A basic goal for adult learning has been to facilitate growth in critical thinking, problem solving, and learning how to learn within an atmosphere of ambiguity, controlled instability, and disequilibrium (Dirkx & Lavin, 1995).

Self-directed learning has been described as "a process in which individuals take the initiative without the help of others in diagnosing their learning needs, formulating goals, identifying human and material resources, and evaluating learning outcomes" (Knowles, 1975, p. 18). Self-directed learners have been independent learners and have learned things of greatest interest to them in ways that they have found most beneficial (Clardy, 1998). "Self-determined learning assumes that people have the potential to learn continuously and in real time by interacting with their own environment; they learn thorough their lifespan, can be lead to ideas rather than be force fed the wisdom of others, and thereby they enhance their creativity, and re-learn how to learn" (Hase, 2003, p. 3). When self-directed, adults have been driven to go beyond the acquisition of basic levels of knowledge and skills and have sought personal holistic growth. Deci (1995) has found that intrinsically generated interest has positively impacted the learner's actions and motivation. Burge (1994) has found that effective online facilitators have developed teaching and learning philosophies, practices, and competencies that have provided for social interaction and have, at the same time, promoted participant self-directedness.

Sherry (1996) has found that facilitators have encouraged self-directedness by providing participants with appropriate and timely technical and content-related assistance by sending individualized feedback and affective support. To encourage participants' self-directedness, facilitators have shared work from previous groups to serve as examples, have assigned leadership roles within the groups, have posted project updates, and have provided authentic opportunities for participants to develop online relationships that have encouraged reflective thinking (Dereshiwsky, 1998; Feenberg, 1987).

Self-directed learners have been described as self-managing, self-monitoring, and self-modifying. Self-management has been noted when a learner has had clear expectations, has had a strategic plan, has anticipated success, and has explored creative alternatives. Self-monitoring has been recognized when the learner has attended to the established plan. A self-modifying learner has been described as an individual who has made adjustments to the established plan as the individual has reflected on, evaluated, analyzed, and constructed meaning from the experience. Self-directed individuals have applied new learning to future experiences (Costa & Garmston, 2002).

The Internet has been an instrument that has enhanced self-managed learning and has encouraged learners to independently support their own learning. The Internet, and specifically

online professional development, has provided teachers with "a rich, safe, and self-sustaining environment for implementing changes in instructional practice" (Shotsberger et al., 1997, p. 2). Hughes (2001), Shotsberger et al., and Rodes et al., (2000) have reported an increase in self-directedness by teachers involved in online professional development. Online professional development has successfully increased the efficacy of its participants, thus transitioning them into "autonomous learning" (Tsui et al, 1996). "It reflects a unique developmental journey; adult learners 'develop' the skills, knowledge, and attitudes as they engage in increasingly advanced forms of self-direction. The maturation of self-directed learning should be viewed along a developmental continuum" (Kasworm and Bing, 1992, p. 3).

A growing understanding of adult learning has produced a consensus about the critical attributes that have constituted effective face-to-face professional development practices and online professional development practices. Both practices have involved viewing adult learners as self-directed learners who have been capable of initiating and directing their own instructional activities with minimal assistance. When learning has been self-directed, the learner has been motivated to succeed, has determined the context for his/her learning, and has implemented learning strategies necessary to achieve the desired outcomes (Ebeling, 1994). Through the transformative process of becoming a self-directed learner, learners have changed the way they think and reflect about their own learning. "No longer are they recipients of a teacher-directed process; they are responsible and accountable for their own development" (Pilling-Cormick, 1997, p. 76).

Hase (2003) has stated that effective adult education has been characterized as managed self-directedness and guided interaction. Acker and McCain (1993) have stated that "interaction is central to the social expectations of education in the broadest sense and is in itself a primary goal of the larger educational process and that feedback between learner and teacher is necessary for education to develop and improve" (p. 11).

Participants have become increasingly self-directed while diminishing excessive dependency on the facilitator and have assumed responsibility for their own educational experiences (Milheim, 1995; Moore & Clark, 1989). Learners who have been highly self-directed have been capable of expressing a host of critical thinking (problem solving) skills. Self-directed learners have exhibited narrative abilities in intellectually rich, online discourse. Self-directed participants have prompted facilitators to develop more innovative assignments that

have, in turn, stimulated higher-level reflection in individual work and lively dialogue in group activities and discussions.

Conversely, individuals who have lacked problem-solving prowess and have limited computer skills have presented a complex set of challenges for facilitators. Less-skilled participants have been more likely to want the facilitator to provide the "right answer." Less-skilled, less-efficacious participants have viewed knowledge not as critical thinking but as a collection of information (Seaton, 1993). Katz (2002) has found that participants' preferences for online professional development courses have been related to an inherent perception of independence and personal control in regard to participants' own learning. Participants who have preferred online professional development have typically not been excessively dependent on high levels of intensive face-to-face teacher-student interaction.

The online network has increased communication among and between participants involved in online professional development (Markee, 1994; Wepner & Seminoff, 1997). "They learned to rely on and support each other and gained confidence in their own collaborative projects. They have seen that technology can enhance learning rather than add to their bulging workload" (Taylor & Stuhlmann, 1998, p. 360). Online participants have shared expertise and experiences, have communicated their frustration with online professional development, and have reflected on their classroom practice (Rogers, 2000).

Jaffee (1997) and Tinker (n.d.) have stressed the need to employ strategies that have bridged the communication gap between physically isolated online participants. Participants' feelings of isolation have been reduced and the interactivity among teachers has been elevated in the online environment when they have used email, listserves, and bulletin boards (Gray, 1998; Kearsley & Schneiderman, 1999; Levin & Thurston, 1996; Richardson, 2006; Strickland, 2003; Tannehill, Berkowitz, & LaMaster, 1995).

Saba (1998) has found "the success of distance education, to a greater degree, will depend on the ability of educational institutions to personalize the teaching and learning process" (p. 1). Knowles (1980) has stated that "learning is a very human activity. The more people feel they are being treated as human beings—that their human needs are being taken into account— the more they are likely to learn and learn to learn" (p. 129).

The transition from instructors as information transmitters to facilitators as guides who support self-directed learners has more successfully met adult learner needs (Katz & Associates,

1999; Rogers, 2000, Salomon, 1992). This paradigm shift has required a goal-oriented facilitator who has purposefully prepared participants to adapt in rapidly changing world (Cantor, 1997).

Conclusion

This section has established that online professional development participants have been more motivated to learn when they have understood why something has been important for them to learn, have been allowed to be self-directed, and have thoughtfully connected new learning to previous experiences. Learners who have been self-directed have become their own inspirations for motivation and filters for what has been needed for self-improvement based on personal reflection and insights into their own competencies. Teachers have increased in interactive skills and self-directedness as a result of participation in online professional development activities.

The next section has focused on practices and philosophies of constructivist learning and how constructivist learning has elevated self-directedness in an adult learner.

Constructivist Learning

"Learning best occurs when individuals construct their own meaning" (Schrenko, 1994, p. 4) Constructivists have been described as persons who have adhered to and have advocated for constructivist thought. Constructivists have contended that learners can only make meaning for themselves as knowledge cannot be transmitted from instructor to learner. Constructivists have further maintained that knowledge cannot be taught but can only be learned (Candy, 1991; Delaney, 1999). Candy (1991) has described constructivist learning as the process of assembling meaning through active inquiry within a specific context or situation. Brooks and Brooks (1993; 2000) have added that constructivist learning has been intentional behavior guided by the learner's personal constructs based on prior knowledge within a particular frame of reference. The responsibility for assembling new meaning and assimilating new understandings has resided with the learner (Delaney, 1999; Garrison, 1992).

Clinchy (1995) has stated that learning has occurred when a learner has noticed a discrepancy between existing cognitive structures (the learner's prior knowledge) and a new experience. Such events have created a sense of cognitive dissonance that has required adaptive changes in the learner's current schema.

Candy (1991) has stated that "self-constructing implies continuing process rather than finished state" and has added that learning has been a process of making meaning. Norman (1993) has contended that the goal of the learning process has been to make meaning because meaning is a reflection of knowledge.

Jonassen (1991) has stated that facilitators of learning have skillfully utilized the principles of constructivism as they have created learning environments where learners have searched for meaning in ambiguity and disequilibrium while engaged in responsible inquiry. Jonassen has recommended that leaders embed learning opportunities in authentic environments where learning has been relevant to the participants and where participants have focused on realistic solutions to real-world problems. Within these authentic environments, the facilitator has served as a coach to support construction of meaning while allowing the learners to create connections between learning concepts. The facilitator has provided tools that have assisted learners as they interpret real-world problems from multiple perspectives.

In constructivist environments, learners have generated their own instructional goals and objectives through negotiation with the facilitator and other learners. At the completion of learning, self-analysis has served as an evaluation tool. Lieberman (1995) has contended that learning should be internally controlled and mediated by the learner based on the learner's insightful self-analysis of their personal needs.

Lieberman and Miller (1992) have defined teacher professional development as "continuous inquiry into practice" (p. 107). In this process of growth, the teacher has served as a reflective practitioner, as someone who has a tacit knowledge base and has continued to shape their personal knowledge base through ongoing inquiry and analysis by continually rethinking and reevaluating his or her own values and practices (Schon, 1987).

The development of continuous learners has been highly dependent on the extent to which education systems have encouraged a culture of inquiry (Garmston, 2005; Lieberman & Miller, 1992). Developing continuous learners has involved regular occasions for exposure to new ideas through professional readings and discussions. For these new ideas to become habitual practices, time and resources have been allocated for teachers to experiment, receive feedback, and reflect on the feedback.

A model for inquiry-based learning that has been based on constructivist principles has been developed by Apple Classrooms of Tomorrow (ACOT). In this model, participants,

working on teams with other learners, have shown significant changes in their teaching strategies and approaches by adhering to constructivist practices (Yocam, 1996). Team members have been encouraged to construct their own professional development by first determining their students' needs and then seeking ongoing professional development that is both meaningful and personally appropriate to address their students' needs within their own school environment (Lambert, 1995).

Based on ten years of research, the ACOT teacher development center has identified five characteristics of successful professional development: a constructivist learning environment, contextually-based, situational professional development, time designated for reflection, team planning for implementation, and ongoing dialog (Apple Computer, 1995; Lewis, Treves, & Shaindlin, 1997).

Similarly, Lieberman and Miller (1992) have identified five essential elements of professional development that have been instrumental in creating a culture of inquiry: expectations of collegiality, openness and trust, provisions of time and space for disciplined inquiry, content-based learning within authentic contexts, and opportunities for leadership roles.

The Holmes Group (1995) has identified two components for inquiry-based cultures. Learners have, both individually and with colleagues, acquired and exercised the habits of reflecting, questioning, experimenting, and evaluating. Learners have participated in systematic research and development aimed at generating and applying new knowledge. In these cultures, the strongest impact has been at the school level, where norms and ways of collaborating and providing support have changed significantly. These findings have reinforced previous research that has suggested the need to provide time for collegial planning and support, the need to encourage reflective practice, and the need to provide professional development that has directly applied to the learner's own setting.

Brooks and Brooks (1993) have concluded that

…constructivist teachers encourage and accept student autonomy and initiative, use raw data and primary sources, along with manipulative, interactive, and physical materials, allow student responses to drive lessons, shift instructional strategies, and alter content; inquire about students' understandings of concepts before sharing their own understanding of those concepts, encourage students to engage in dialogue, both with the teacher and with one another; foster student inquiry by asking thoughtful, open-ended

questions and encouraging students to formulate and ask their own questions, seek elaboration of students' initial responses; engage students in experiences that might engender contradictions to their initial hypotheses and then encourage discussion; provide time for students to construct relationships and create metaphors; and nurture student's natural curiosity. Teachers must also learn to understand students' points of view as instructional entry points—which means that teachers must be good listeners as well as talkers (cited in Sparks & Hirsh, 1997, p.10).

Brooks and Brooks (1993) have found that when instructors have continued to view themselves as learners, have asked questions with which they still struggle, have been disposed to alter content and practice in pursuit of understanding, have regarded students and their efforts as works in progress, their students have been more likely to exude those same characteristics themselves (cited in Sparks & Hirsh, 1997, p. 10).

The constructivist approach has gained validity as a model that is increasingly more compatible to current thinking of educators (Barron & Goldman, 1994; Dittmer, 1999; Lambert, 1995; Sparks, 1994).

Conclusion

The goal of constructivist learning has been to help learners become better problem-posers and better problem-solvers. Professional development facilitators have utilized constructivist theories and practices and have allowed learners to assemble their own understandings of the learning process within their own individual contexts. Research has shown that constructivist learning theory has been a viable, integral part of professional development.

The next section has summarized the need for a handbook for the online professional development facilitator.

The Need for an Online Professional Development Facilitators Handbook

Rogers (1969) has stated that the goal of education has been to facilitate learning and the role of the educator has been as a facilitator of learning. Professional development facilitators have been responsible for assisting participants in developing analytical methods of thinking, for providing opportunities for participants to think critically, and for assisting participants in developing new knowledge based on personal construction of learning (Cervero, 1988). Rogers

(1989) has stated that "learning is a part of a circuit that is one of life's fundamental pleasures: the [facilitator's] role is to keep the current flowing" (p. 38).

Organizational structures have needed to be flexible and dynamic, responding to the changing needs of teachers and the profession. Unfortunately, short-term professional development in a workshop format with limited follow-up has remained the dominant practice. Traditional stand-and-deliver professional development models have proved ineffective because these models have lacked purpose, intensity, follow-up, and coherence to goals that have improved student performance (Corcoran, 1995; Joyce & Showers, 2002). Additionally, a "one-size-fits-all" approach has not sufficiently met individual learners' needs. Research has shown that professional development has been more effective when facilitators have considered participants' current status and have reacted to participants' individual needs. Effective professional development facilitators have moved from a traditional, didactic, stand-and-deliver teaching methodology to an interactive, learner-centered, inquiry-based model, an extremely complex task too frequently attempted without knowledge, skills, or training on how to proceed in an exemplary manner.

The online environment has further complicated this transition. Technology has been a promising format to conduct professional development, but many online professional development facilitators have had to adjust previous assumptions and beliefs about learning in addition to adapting to the online environment. Online professional development facilitators have also needed to become comfortable moderating online learning environments that have required a high degree of participant interactivity. These changes have required a deep understanding of characteristics of optimal online facilitation that have engaged participants with the subject matter and with each other. Online professional development facilitators without training have struggled to provide intellectually stimulating online dialogues and productive individual and team learning experiences while working to establish an effective online presence and experimenting with online intervention strategies (Garmston, 2004).

Research literature has affirmed the critical role online instructors have played in creating dynamic and academically effective learning environments in a virtual medium. Palloff and Pratt (2001) have stated "the key to success in our online classes rests not with the content that is being presented but with the method by which the course is being delivered" (p. 152).

The main factors that have determined participants' success or failure in an online professional development course have been social more than technical factors (Kaye, 1992). Wegerif (1998) has stated "individual success or failure on the course depended upon feeling like insiders" (p. 34). Interaction has allowed participants to move from a peripheral position to a full and central member within the community of learners (Lave & Wenger, 1991).

In a collaborative learning model, Brown and Campione (1994) and Collison, Elbaum, Haavind, & Tinker (2000) have emphasized the importance of the instructor playing the role of a "guide on the side" or a "mentor in the center." This role has allowed the facilitator to actively guide the participants while remaining a full interactive, collaborative member within the established community of learners (Bourne et al., 1997; Hiltz, 1997). Bonk et al. (1998) has found that a facilitator has been more effective in stimulating participant-to-participant interaction when the facilitator has played an active role in the online dialogue.

"…the most valuable activity in a classroom of any kind is the opportunity for [learners] to work and interact together and to build and become a part of a community of scholars and practitioners" (Jonassen, Davison, Collins, Campbell, & Haag, 1995, p. 7). An essential element for participant success in an online course has been discussion facilitation (Collison et al., 2000; Kaye, 1992). Garrison (1993b) has argued that "the overriding impact on the quality of an educational experience is the provision of sustained discourse" (p. 11). Collison et al. has found that a facilitator, incorporating an informal conversation style, has most effectively guided an online dialogue using six voices: generative guide, conceptual facilitator, reflective guide, personal muse, mediator, and role player. These roles have not occurred intuitively for many novice online professional development facilitators and as a result, novice online professional development facilitators have had difficulty facilitating dialogue that has been cognitively stimulating.

The basic nature of technology has a profound affect on the interactions that have occurred in the collaborative process in computer-mediated environments (Dillenbourg, Baker, Blaye, & O'Malley, 1995). Ellis (1999) has stressed that although individuals have generated their own personal meanings when exchanging and interpreting messages, the structure of the medium where the communication has existed has been equally influential. Establishing an environment for learning within a virtual context has greatly complicated the role of the professional development facilitator (Fetherston, 2001).

Mass-produced self-paced, self-instructional online professional development packages have ignored the discourse principles of a constructivist, collaborative learning environment (Garrison, 1993a; 1995). Creating participant capacity as self-directed learners has been an additional struggle (Brown, Bransford, Ferrar, & Campione, 1983).

In addition, the provisions for higher level learning have been potentially different in online environments than in face-to-face settings. Garrison (1995) has discussed the difficulty in facilitating higher order thinking skills in computer-mediated conferences. The online professional development facilitator has been expected to skillfully assist participants in making personal and professional connections, to weave ideas and encourage contributions, to recognize themes and patterns of thought, to clarify and redirect thinking, and to summarize the discussion. This argument has required a rethinking of the communication tools that have been available to an online professional development facilitator (Fetherston, 2001).

Conclusion

The desired outcome for online professional development has been enhanced performance that ultimately has benefited the end recipients: the teacher and the student. A major challenge for today's online facilitators has involved creating a consistent level of interaction that has fostered genuine learning and has cultivated a community atmosphere, a balance that has required strategies that have provided guidance and instruction while allowing individuals and teams to take an active role in their own learning. An online professional development facilitator's handbook will clarify the knowledge, attitudes, practices, and skills that characterize an exemplary online professional development facilitator and will demonstrate the instructional strategies that are effective in planning, implementing, and facilitating professional development in an online environment.

CHAPTER 3 - Research and Methodology

Introduction

This research study has adhered to the educational research and development (R&D) methodology of Borg and Gall (1989) and recognized by Dick and Carey (1985; 1990; 2004). The R&D model has been used extensively for industry as a cyclical process where products have been developed through a rigorous structure of testing, evaluation, and refinement in order to procure a product that has been practical and functional.

In education, the R&D process has been used to connect educational research to educational practice and has translated research findings into applicable educational products for the purpose of improving instruction within the school setting. The R&D process has been used to effectively test predictions and develop instructional interventions that have been used to improve classroom practice (Gall et al, 1996). As suggested by Gall et al. (1996), the original ten step R&D process that has been adhered to by industry has been limited to the first seven steps for educational purposes. Educational researchers have followed the rigorous seven step process of testing, evaluation, and refinement and have yielded a valid product (See Figure 1).
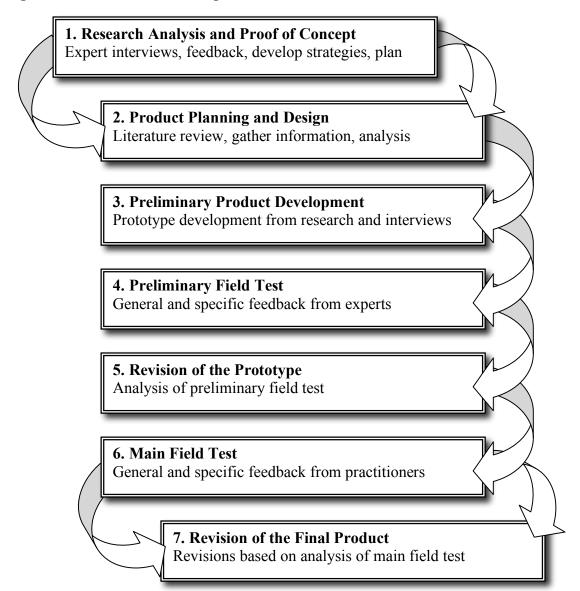
The R&D process "…consists of a cycle in which a version of the product is developed, field tested, and revised on the basis of field test data" (Borg & Gall, 1989, p.781) and has yielded an "educational product that is fully ready for operational use in the schools" (p. 785). Borg and Gall have recognized that adherence to the full ten step process requires substantial personnel and financial resources that are generally not available to graduate students. In light of these limitations, Borg and Gall have suggested including a preliminary and main field test, while eliminating the final three steps of operational field-testing, final product revision, and dissemination and implementation. Strict adherence to the prescribed seven initial steps has insured a valid and useful product. In this study, the process of creating an online professional development facilitator's handbook has been limited to the first seven steps.

Steps one through seven of the R & D process have included: (1) research analysis and proof of concept, (2) product planning and design, (3) product development, (4) preliminary field testing, (5) revision of the prototype, (6) main field testing, and (7) revision of the final product (Borg & Gall, 1989).

This study has not included the last three steps of the R & D model as recommended by Borg and Gall (1989) as a recognized and acceptable practice due to limitations of funding and personnel by most graduate students. These steps included (8) operational field testing, (9) revision of the final product, and (10) dissemination and implementation (pp. 784-785).

Figure 1 has graphically represented the process for this study. The researcher has responded to feedback and refined the product based on input from expert and novice reviewers through a process that has been both linear and circular as noted by the arrows.

Figure 1. Research and Development Model

1. Research Analysis and Proof of Concept
Expert interviews, feedback, develop strategies, plan

2. Product Planning and Design
Literature review, gather information, analysis

3. Preliminary Product Development
Prototype development from research and interviews

4. Preliminary Field Test
General and specific feedback from experts

5. Revision of the Prototype
Analysis of preliminary field test

6. Main Field Test
General and specific feedback from practitioners

7. Revision of the Final Product
Revisions based on analysis of main field test

To determine what information would be included in the handbook, two research questions were identified:

1. What knowledge, attitudes, practices, and skills characterize an exemplary online professional development facilitator?

2. What instructional strategies are effective in planning, implementing, and facilitating online professional development?

The research objectives used in the development of *Communities of learning and cultures of thinking: The facilitator's role in the online professional development environment* were: (a) examine the literature to determine appropriate online facilitation practices, (b) define the role of an online professional development facilitator, (c) determine the knowledge, attitudes, practices, and skills that characterize an exemplary online professional development facilitator, (d) determine how exemplary online professional development facilitators scaffold instruction so participants are successful, and (e) develop examples that online professional development facilitators could use to help clarify facilitation of professional development in the online environment.

The chronological timeline for completion of the research is illustrated in Table 1.

Table 1. Research and Development Chronological Timeline

R&D Step	When	Action	Results
Research Analysis and Review of the Literature	Spring 2003 – Fall 2007	Reviewed the literature and analyzed the research	Collected references, examples, and resources for the product
Proof of Concept	Summer 2004	Determined the feasibility of the product through face-to-face and telephone interviews and email correspondence	Conducted six interviews and documented positive feedback to create the product
Preliminary Product Development	January - April 2007	Developed a prototype of the	Prepared for preliminary field test

		handbook	
Preliminary Field Test	May 2007	Handbook was reviewed by experts	Eight experts reviewed the handbook
Revision of the Prototype	June 2007	Improved the handbook using the experts' feedback	Prepared for main field test
Main Field Test	July 2007	Handbook was reviewed by expert and novice practitioners	Three expert and four novice practitioners reviewed the handbook
Revision of the Final Product	August - November 2007	Revised the handbook using practitioners' feedback, prepared the handbook for dissemination and inclusion as a dissertation chapter	Defended research

Step 1: Proof of Concept

The proof of concept has included research, analysis of expert interviews, and a review of the literature. The proof of concept has validated a need for a handbook for online professional development facilitators outlining the role of the online professional development facilitator and the inherent knowledge, attitudes, practices, and skills of an exemplary online professional development facilitator.

Information has been collected from six expert online professional development facilitators ((Borg & Gall, 1989) that has validated a need for an online professional development facilitator's handbook. Experts have been defined as leaders in their field, characterized by their knowledge and expertise of the subject, and recognized at the

international, national, regional, or state level as experienced online professional development facilitators.

Table 2 identifies the six proof of concept experts, positions they hold, and organizations where they serve.

Table 2. Proof of Concept Experts

Name	Position	Organization
Terrie Gray, Ed.D.	Dean	Connected University Malibu, California
Walter McKenzie	Coordinator of Instructional Technology Adjunct Professor, Graduate School of Education	Arlington, Public Schools Arlington, Texas Pepperdine University Malibu, California
Charlie Pitrolo	Online Facilitator	Connected University Fairmont, West Virginia
M. B. (Barry) Wansbrough	President Headmaster Emeritus	Licensed to Learn, Inc. Hillfield-Strathallan College Hamilton, Ontario, Canada
Charles Webber, Ph.D.	Associate Dean, Graduate Division of Educational Research	University of Calgary Calgary, Canada
Cyndy Woods-Wilson	Faculty Manager	Classroom Connect

Members of the expert panel were identified through their affiliation with various international, national, regional, or state professional development organizations (e.g. International Society for Technology in Education [ISTE], National Staff Development Council [NSDC], Association for Supervision and Curriculum Development [ASCD], etc.). Practicing online professional development facilitators nominated panel members to serve on the proof of concept panel who were knowledgeable, respected practitioners, presenters, and/or trainers for international, national, regional, and state conventions.

Criteria for inclusion in this pool was based on three or more of the following:

1. Must have been recognized as an expert in the field of online professional development (e.g. experienced online course developer, trainer, or facilitator),
2. Must have been employed part time as an online professional development facilitator,
3. Must have published materials dealing with online professional development,
4. Must have two or more years experience working with online professional development.

Each expert was asked to respond to a designated list of questions (see Appendix A) and the data were compiled and analyzed. The proof of concept data analysis has resulted in the following information: (a) there was an important need for a handbook clarifying the role of an online professional development facilitator, (b) the proposed handbook would be favorably received by experienced and novice online professional development practitioners, and (c) the proposed handbook would help standardize the knowledge, attitudes, practices, and skills required of online professional development facilitators. Proof of concept experts also suggested a focus on adult learning theory, learning communities, and facilitation of dialogue. The experts suggested adhering to nationally recognized standards that would serve to elevate online professional development facilitators to a high level of proficiency in an expedient manner. Proof of concept experts advised that the focus should be on the purpose and goals of learning through professional development and not on the online venue. The proof of concept experts further suggested grounding the theory of online professional development in concrete examples or scenarios that learners would find relevant to their own needs. Information gathered from the expert panel members has been used to validate the need and usefulness of an online professional development handbook.

Step 2: Product Planning and Design

The need for an online professional development facilitator's handbook was established based on the literature review that has indicated a void in the present level of knowledge in regard to the role of the online professional development facilitator, specifically pertaining to the knowledge, attitudes, practices, and skills exhibited by exemplary online professional development facilitators. While the literature review has identified a sizeable amount of information relevant to creating and administering online professional development courses, very little information was found that has equipped online professional development facilitators with

practical, effective online instructional practices and skills that have enabled online participants to be self-directed, active, critical thinkers.

Step 3: Preliminary Product Development

The preliminary product was developed from the review of the literature and online professional development expert interviews. The planning and design of the product included listing the objectives of the product, the target audience likely to use the product, and a description of the product's basic components and uses. The outline for the handbook was created and finalized (see Appendix B). The handbook's outline included topics critical to successful online facilitation: the adult learner, constructivist philosophy, learning communities, and the facilitator as a leader of learning.

The objectives of the handbook were to:

1. Define the role of an online professional development facilitator;
2. Determine the knowledge, attitudes, practices, and skills that characterize an exemplary online professional development facilitator;
3. Determine how exemplary online professional development facilitators scaffold instruction so participants are successful; and
4. Meld theory to practice with concrete examples that online professional development facilitators could use to clarify facilitation of professional development in the online environment.

The target audience for the online professional development facilitator's handbook was determined to be curriculum directors, professional development coordinators and facilitators, building- and district-level administrators, technology leaders, and teacher leaders. These individuals are likely to benefit from a handbook designed for online professional development facilitators as these individuals have often been recruited to facilitate online professional development without prior experience or proper training.

Step 4: Preliminary Field Test

The preliminary field test was used to obtain qualitative data for assessment of the handbook prototype in order to make necessary revisions to the handbook. The preliminary field test served as an evaluation of the content of the handbook and was based on feedback from a

panel of experts in the field. Information was collected from eight different experts (Borg & Gall, 1989; Gall et al, 1996). The experts were identified as leaders in their field and were characterized by their knowledge and expertise of the subject. They were recognized as national, regional, or state leaders and were recognized as experienced online professional development facilitators. The experts on the R&D preliminary field test panel were selected based on specific criteria in order to increase the likelihood of generalizing the findings of this study to other educational settings. Care has been given to effectiveness and unintended effects as well (Borg & Gall, 1989; Gall et al).

The eight members of the expert preliminary field test panel were given the choice to receive an electronic or a paper version of the prototype of the online professional development facilitator's handbook, the preliminary field test instructions (see Appendix C), the preliminary field test questionnaire evaluation form (see Appendix D), and the consent form (see Appendix E).

The eight members of the expert panel (see Table 3) were identified through their affiliation with various national, regional, or state professional development organizations (International Society for Technology in Education [ISTE], National Staff Development Council [NSDC], Association for Supervision and Curriculum Development [ASCD], etc.). In addition, panel members were identified by practicing online professional development facilitators who nominated knowledgeable, respected practitioners and presenters and/or trainers from national, regional, and state conventions.

Criteria for inclusion in the preliminary field test panel was based on three or more of the following:

1. Must be recognized as an expert in the field of online professional development (e.g. experienced online course developer, trainer, or facilitator),
2. Must be employed part time as an online professional development facilitator,
3. Must have published materials dealing with online professional development,
4. Must have two or more years experience working with online professional development.

Table 3 identifies the eight preliminary field test experts, positions they hold, and organizations where they serve. All experts fully consented to participating in the preliminary field test (see Appendix E). Experts were identified by name to establish professional

qualifications. However, the feedback received from the experts from the preliminary field test questionnaire was not identified by the individual in order to preserve confidentiality.

Table 3. Preliminary Field Test Experts

Name	Position	Organization
Edwin Church, Ed.D.	Associate Professor	Emporia State University Emporia, Kansas
Kelly Moore Dunn, Ed.D.	Director-Teacher Education Conversion Programs	New Hampshire Technical Institute Concord, New Hampshire
Michelle Flaming	Mathematics Specialist	Educational Services and Staff Development Association of Central Kansas Hutchinson, Kansas
Patricia A. Halpin, Ph.D.	Adjunct Assistant Professor

Resource Faculty in Science

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Susan K. Peterson, Ed.D.	Coordinator of Field Experiences	University of New Hampshire-Manchester Manchester, New Hampshire
Patricia J. Terry, Ed.D.	Professor of Education	Virginia Wesleyan College Norfolk, Virginia

The expert panel completed a preliminary field test questionnaire (see Appendix D). The expert panel was asked to evaluate the quality of the handbook's content in terms of correct analysis and interpretation of relevant research and literature, attractiveness and function of the handbook's format, helpfulness in creating a low risk online environment, helpfulness of examples (vignettes), relevance to both novice and expert online professional development facilitators, and clarity and ease of use. The expert panel was asked to address three open-ended questions concerning the handbook's greatest strengths, greatest weaknesses, and information that should be included in the handbook. Space was provided for experts to add any additional comments or suggestions.

The experts' answers have been recorded verbatim in Table 4. Action taken by the researcher has been documented in the *Researcher's Action* column of Table 4. Three categorized identifiers indicate the action taken by the researcher in response to the experts' answers. *Agreed* indicated the researcher agreed with a change suggested by an expert and changes were made to the handbook. *Disagreed* indicated the researcher disagreed with a change suggested by an expert. The researcher included the rationale for not making the suggested change to the handbook. *Acknowledged* indicated the researcher acknowledged a suggestion or comment.

Changes made to the handbook based on the expert feedback were specifically described in Table 4.

Table 4. Preliminary Field Test Responses

Experts' Comments	Researcher's Action
1. The content of the product is based on correct analysis and interpretation of relevant research and literature.	
• Strongly agree.	Acknowledged.
• Well-organized and detailed lit review. I learned a lot, and of course, much of it confirmed what I already knew. Now my thoughts previously unfettered with research are now substantiated.	Acknowledged.

• I particularly like the logical progression of thought and ideas. For instance, early in the paper, I was hoping to see the word "inquiry" used. Then at the logical point in the progression of the work, the word "inquiry" appeared. I find the use of the vignettes useful in fleshing out the information we learned about. It is a good juxtaposition of showing and telling.	Acknowledged.
• Strongly agree.	Acknowledged.
• The research is very comprehensive and covers pedagogy well. It was interesting to see the amount of research on adult learning styles as well as online learning being conducted in the early 90's. The vignettes seemed "familiar" to me although I don't know why. Your resources are excellent; I was especially pleased to see works by Marzano, Senge, DuFour, DuFour, and Eaker included. It was great to see the book I have used as my main support included in the resources: Collinson, G., Elbaum, B., Haavind, S., & Tinker, R. (2000). Facilitating online learning: Effective strategies for moderators. Having current research on Web 2.0 tools as researched by Richardson provides support for how new social networking tools may contribute to online professional development.	Acknowledged. Vignettes were created based on the researcher's previous experiences and were not case studies.
• Research from many fields (areas) of education is included in the document. Connecting from all these areas into online learning has been established.	Acknowledged.

• The research used was relevant. Citations were appropriate.	Acknowledged.

2. The format of the product is attractive and functional.

• As a scholarly dissertation, this is a well-conceived product. I like the scholarly discussion followed by the vignettes of Justine and Tavia. The format of providing theory and research followed by the "Justine—Tavia" vignettes is well done and very useful for the reader to understand the information provided. I particularly like the sections at the end of each chapter. "The Summary," "To Ponder," "To Do," and the bibliography. These are very useful and functional tools.	Acknowledged.
• The format is user-friendly.	Acknowledged.
• The subtitle of the document is actually the essence of the work. In order to understand the facilitator's role, it is critical to understand the learner and the characteristics learners bring to the online environment. The format is excellent. It is fast reading, and the structure lends itself to the content of the text. As an "adult reader," I found that the friendly, yet professional writing style kept my interest and included a bit of "fun" which had been mentioned as a component of adult learning. The subtitles maintained this sense of casual interest. Pulling the well-chosen quotes into boxes was an effective means of bringing emphasis to major ideas without being obtrusive.	Acknowledged.

The "To Ponder" sections provide rich opportunities for practicing facilitators to hone their own skills. Breaking up the vignettes into small sections in an effort to illustrate the main points in the discussion was an effective way to focus on key concepts. This could easily be used in a teaching context.

- Strongly agree.

  Acknowledged.

- The format is attractive. However, the organization of the information is not conducive for use as a guided or lesson-based facilitator's guide. Information is sometimes presented within the "story" format and at times within the narrative. The questions to ponder section are at times an extension of the text and at times go beyond the previous text. Likewise, Adult Learning is the foundation of the NSDC information but is not formally presented until Chapter 3. There is a great deal of information— however, it is presented in a manner that does not lead to incremental understanding on the part of the reader.

  Disagreed. The handbook was not intended to be a step-by-step manual for use as a guided or lesson-based facilitator's guide. The questions were, at times, intended to ground the reader's understanding in application, and at other times, were intended to stretch the reader to higher levels of critical thinking. Chapter 3 was an appropriate place to present adult learning theory after the researcher had laid essential foundational knowledge and had progressed to adult learning theory.

- Excellent format.

  Acknowledged.

- When I first began reading, the quotes inside the boxes tended to distract me from finishing the sentences. The quotes seemed to pull me away in mid-sentence. Is that the desired outcome? Sometimes the case studies didn't flow into the product text real easily.

  Disagreed. The structure and format followed many current educational publications where quotes are located in close proximity to textual content and are used to reinforce the content. The case studies (vignettes) were

	reviewed to determine relevance to surrounding text.
• I enjoyed the discussion between Tavia and Justine. I found this broke up the text and helped to demonstrate what could likely occur in this environment. It also went further and followed up on ways to facilitate. It demonstrated what was successful instead of just telling you what to do.	Acknowledged.

3. The product can help online professional development facilitators design a low risk online professional development environment.

• Oh, yes, this is a fabulous online facilitator's resource. From the pedagogically researched explanations of how to ease the anxiety of the online learner to providing charts of the listed appropriate actions makes this a wonderful resource for all facilitators at any level of expertise. Explanations are supplemented with empathetic illustrations of the situation either via the vignette or from a comprehensive explanation.	Acknowledged.
• Strongly agree.	Acknowledged.
• The product is very helpful and very necessary for this type of work.	Acknowledged.
• Yes, it can and this is something that is needed.	Acknowledged.
• If this is to be used by facilitators, I suggest that you consider placing the research portion of the text in a single location. The "story" or "case study" portion should tie more closely to the	Disagreed. The vignettes were interwoven within the research so the reader can acknowledge and learn from the connections between theory

"research-based" tips and tricks of facilitation. Some portions did and others did not.	and application and consider appropriate personal application.
• The information included in this document presents essential background material that can help a facilitator design a successful online experience for learners. It is not a recipe for developing specific skills required for facilitating an online course. The emphasis on developing a safe, supportive environment with a focus on developing trust is critical to a successful experience. Recognizing that learners construct their learning and are responsible to the group is critical. Too much involvement on the part of facilitator is clearly shown to hinder the successful engagement of learners.	Acknowledged.
• The product does a nice job spelling out all the necessary components. More concrete examples would be beneficial. Example: Pg. 45 How does one specifically build trust? One idea—get to know you, but are there others? Pg. 76 could use more concrete examples of how to gradually release the responsibility to participants.	Agreed. Additional information on trust was added. Disagreed. The handbook was not intended to be a step-by-step manual for implementation, but was designed to allow facilitators to gain a conceptual understanding that can be personalized and adapted to the individual's own setting.
4. The study group vignettes contain information that is helpful for online professional development facilitators.	
• Strongly agree.	Acknowledged.
• This is my favorite part of the book. An early comment I made in my notes was that I'd like to	Agreed. Appropriate changes were made.

see some dialogue that would provide the reader with more "show" than the "tell" we were getting. Then we are introduced to Justine and Tavia, excellent. I would like to have been told about these two in the early part of the book, perhaps in the preface. I would suggest we should be introduced to these two in the preface via their own interaction and get us right in to the mode.	
• I found the vignettes very helpful for a practical application of the material.	Acknowledged.
• They were well designed and I just love saying vignette.	Acknowledged.
• Pg. 16—I like the answers that Tavia gives to Justine when she is asked tough questions. The answers are what many are probably thinking but don't feel comfortable saying them out loud. This really prevents growth and success. Dealing with these issues head on is really useful and beneficial to the teacher. It also makes them feel more comfortable because they realize these thoughts are common and they re not the only one thinking this way. Pg. 99—thinking for a moment, Tavia recalls that she did notice that the more she contributed to the online dialogue, the more inhibited the teachers seemed to be. This is a good point. I think in our enthusiasm we want to share everything we know with the students so they tend to get passive. It is also difficult to know when to step in and contribute.	Acknowledged.

• The vignette was a wonderful piece to add. It was the reader "friendly" part of the document. At a few locations, the supporting text (after the vignette) didn't read "easily" for me. It was harder to see the connection. Ex: 1st case Pg. 51- didn't support the "constructivist" pt as strongly as it could have. Pg. 69. Pg. 93.	Agreed. Changes were made as appropriate to strengthen the connections between the vignettes and the text.
• Yes, this portion gives a sense of practicality to the theory. I suggest that the questions to ponder and the to do sections be more closely tied to the Tavia and Justine situations. How could have Tavia……???? Did Justine……???? Are there other methods that Justine could have……????	Disagreed. The questions were intended to broaden the reader's thinking and encourage the reader to connect the conceptual understandings to personal application as the reader constructs their own understandings. The interactions between Tavia and Justine were designed to demonstrate the support that an experienced online professional development facilitator can provide while allowing the novice online professional development facilitator to learn on their journey to becoming an exemplary, self-directed, self-sustaining online professional development facilitator. These vignettes and follow-up questions remain true to the premises of the cited research.

• By seeing an example of how various elements can build success into online learning, the facilitator can recognize and relate to behaviors they may encounter and observe how Tavia, with Justine's coaching, handle each scenario. The brief sections of vignette, integrated within the theory and research provide an understanding of the practice, or application of the theory. Of special note is the addition of questions within the vignettes that segue into the next section of the text.	Acknowledged.
5. The content of the product is of interest to both novices to online professional development and experienced practitioners.	
• This text is not written over the head of a novice, nor is it insulting to the experienced practitioner. The information herein is useful and important to all practitioners of online instruction.	Acknowledged.
• Strongly agree.	Acknowledged.
• On pg. 55—you wrote that Tavia telephoned all the teachers. I think this aspect of communication gets ignored when doing anything online. It is sometimes necessary to speak with a person to communicate effectively. Also, for people new to online they will be automatically comfortable speaking on the phone because it is so familiar.	Acknowledged.
• Absolutely! This document provides scaffolding that is beneficial to all facilitators. In fact, it would be helpful prior to any online facilitation experience, but even more useful to someone	Acknowledged.

who has completed a few courses because he or she can relate the content through first hand experience and learn strategies to improve their own facilitation skills. It was impossible to read this document without visualizing scenarios from my own facilitation experience.	
• I have taught graduate classes for seven semesters and discovered a great deal of material to support what I have been doing. It also provided new ideas that I am anxious to implement to improve my online instruction.	Acknowledged.
• For a "novice," this is not an easy read. There are many "teacher terms" that are assumed all would know or interpret in the same way. Examples: formative assessment—many teachers would interpret this to mean "paper / pencil tests" which I don't believe you to mean. Other terms teachers may not know include: net acronyms, emoticons, etc.	Disagreed. Expert feedback indicated the handbook was appropriate for the intended audience. "Novice" was defined as a professional development leader with a background in education who is new to online professional development facilitation. Agreed. Terms were explained as appropriate. In a follow-up interview with the expert, the expert states they were using the terms "formative assessment" and "informal assessment" synonymously.
• Strongly agree.	Acknowledged.
• Information, while valuable, should not be new to an experienced facilitator. I had no great—oh, wow, I did not know that—or wow, I did not think of it in that way. For a novice, this would be	Acknowledged.

valuable.	
6. The constructs (professional learning communities, self-directed learning, constructivist-based, coaching, etc.) of the study group vignettes were appropriate.	
• Yes, strongly agree.	Acknowledged.
• As I have already said elsewhere, I believe these vignettes are crucial and perhaps the most important part of the book.	Acknowledged.
• The constructs included in this document provide concrete examples and content to which the reader can relate. These enable the facilitator to immediately put into practice strategies that are built upon quality research. I particularly liked the sections on dealing with difficult participants, and the one on forming groups. You provided an excellent, yet succinct explanation of Cognitive Coaching.	Acknowledged.
• Strongly agree.	Acknowledged.
• It was nice to see so many different constructs used. It was not a one size fits all approach. The constructs used were appropriate to the situations.	Acknowledged.
• The vignettes seemed logical and not contrived to meet the situation. They "flowed" naturally from the material.	Acknowledged.
• I would have like to see more examples of constructivist-based. Pg. 51 need concrete examples of how constructivism can be used in an online. Could constructivism concepts be modeled in the vignette? Problem-posers and	Disagreed. The problems that were posed in the examples were grounded in authentic situations and were not contrived as exercises whereby the community practiced problem-solving

problem-solvers.	skills. The problem solvers (the members of the online learning community) collectively constructed real solutions to real settings.
7. What is the greatest strength of *Communities of learning and cultures of thinking: The facilitator's role in the online professional development environment?*	
• The format of this product is easy to read. The highlighted material is especially helpful in emphasizing certain cogent points. The use of vignettes helps the reader identify with real-life situations.	Acknowledged.
• Not to stress the vignettes too much, they are most powerful. In addition are the end of chapter: summary, to ponder, to do, and bibliography. Also, the checklists are very helpful.	Acknowledged.
• The material is practical and will help online learners and instructors immediately. It reinforces the "human side" of online instruction and points out the importance of developing relationships. Without trust and understanding maximum learning will not progress. I like the straightforward practical style.	Acknowledged.
• The area is growing in the education community. It is difficult to find useful, practical information for practitioners who are making the leap into this new area. This book is timely and covers essential information for those of us working in the on-line community.	Acknowledged.

• The document focused on the human element and served as a reminder that technology is just a tool. How we choose to support the use of the tool by people is the critical piece.	Acknowledged.
• It provides the seeds for the on-line facilitators to ponder about how to make the experience rich and meaningful by going over the necessary components.	Acknowledged.
• The fact that it was easy to read and the information was directly applicable to facilitating using online learning.	Acknowledged.
• The great emphasis on humanizing the online experience was presented very well. Included in the comments was the information about adult learning and the need for adults to enjoy, or have fun, while learning. An emphasis is placed on the learner's responsibility to engage in reflective thought. The work here addresses the ability to see that the facilitator is responsible for developing a safe and supportive environment that encourages learners to take responsibility for learning. The issue of the effect of excessive facilitator posting was clearly conveyed! And I can vouch for the accuracy of this concept. The use of figurative language and imagery within the text is fantastic. I particularly enjoyed these phrases: barrier…evaporate, internal cognitive tango, empowerment bleeds into teachers, peripheral participation. I also found the phrase, "Teachers of Readers vs. Teacher of Reading" to	Acknowledged.

add a depth to the concept that anyone can understand.	
8. What is the greatest weakness of *Communities of learning and cultures of thinking: The facilitator's role in the online professional development environment?*	
• N/A	Acknowledged.
• I'd have to say the beginning chapter is a major weakness. It is too "telling" and very dry. All of a sudden we meet Justine and Tavia, and the book comes alive. Now the reader has to persevere to get to this point. I can see the book being abandoned early by some readers. As I have said before, introduce this pair earlier and use them to animate the preface and chapter one.	Agreed. Changes were made to introduce the characters earlier in the handbook as appropriate to the sequence of the content. The text was revised to be more appealing to the reader.
• N/A	Acknowledged.
• The organization of the document and the lack of the interconnectedness of the various pieces of information and delivery modes—vignettes, narrative, chats, questions, to do's.	Disagreed. Expert feedback indicated the handbook was logical, sequential, and connected. However, the handbook was reviewed to ascertain that an inherent connectedness was apparent.
• Not concrete enough for the average reader. More examples would increase the value: authentic online tasks—what might they look like? Very focused on reading, may alienate other facilitators of other subjects.	Disagreed. The handbook was not intended to be a lock-step manual for implementation or a series of "how to" activities. The handbook was focused on genuine problems. Specificity to one subject area provided authentic concrete examples. Attempts to broaden the examples to generalize to all subject areas would

	diminish the potency of the examples.
• This is really not a weakness per se…but some of the resources are quite dated for a topic that is relatively young.	Agreed. Resources were updated.
• I found it had no weaknesses.	Acknowledged.

9. What information should be added to *Communities of learning and cultures of thinking: The facilitator's role in the online professional development environment?*

• One could always add more research. Two names come to mind: Dale Mann and Kathy King.	Disagreed. Expert feedback indicated the handbook contained sufficient and appropriate research. Agreed. The suggested names were researched and utilized as appropriate.
• None.	Acknowledged.
• N/A	Acknowledged.
• On pg. 117—it mentions disclosure of personal information encourages others to reciprocate, triggering greater understanding and collegiality, and generates a feeling of trust and support. You need to mention what to do when a student starts to get too personal. This happens more often with adults than their younger peers. How do you nip it in the bud without offending?	Agreed. The researcher added information that clarified the facilitator's role in such situations.
• It is not always possible to cover everything that one would like to see addressed in a work such as this, but there are some issues that facilitators need greater guidance in understanding to serve the learners effectively. The first addresses the optimal length of an online course…if there is	Agreed. Changes were made to add information about length of course and number of participants. As portrayed in the handbook, online professional development learning communities are not typically tied to

such a thing…or several suggestions of length based on the type of experience. I was unable to gather accurately the length of Tavia's course, although it appears that it lasted for a full semester, or approximately 18 weeks. How can facilitators encourage the online community effectively in a 3 or even 6 week course, which tend to be the typical course length for commercially available professional development? The second is the issue of class size. Tavia had only 16 learners. In my experience, this is optimal…but how do you handle a class with 50+ learners…or one with fewer than 8? I have experienced both situation, and both left learners less than ecstatic with the experience, although they all said they enjoyed the classes. In the large group, I actually formed smaller sub groups, but allowed members to read the discussions of the other groups. That way they could benefit from the rich ideas of others, but weren't overwhelmed by the sheer number of posts. Finally, a point that is made in the document, and cited from the work of Katz, 2002, is the fact that an individual who prefers the online learning environment tends to be someone who displays an inherently high level of independence and personal control in regard to their own learning. I really agree with this concept, but I have witnessed teachers with these characteristics who are working in school divisions where the administrators do not share

time and number constraints, but exist as long as they are needed and include as many members as appropriate to make the changes necessary to improve learning.

this thirst for learning, and who have inhibited their participation and performance. It is very distressing.	
• What are some other subject areas we might consider including, either within the text, within the to ponder, or within the to do? Would this be something worth considering? Pg. 100 Difference between "teacher of science" or "teacher of scientists"	Disagreed. It was not the researcher's intent to focus on pedagogical subject matter as the handbook was not intended to be content specific. Attempts to broaden the examples to generalize to all subject areas would diminish the potency of the examples. The researcher has assumed that teachers would be able to personalize the examples as appropriate to individual circumstances.
• I think many teachers would appreciate online teaching strategies that instructors can learn and apply to their individual classes. I have attempted to use Marzano's strategies in my classes. I have been able to use cooperative learning, summaries, etc. in the virtual setting. I think others may be interested in these types of applications. I don't know if this book is the vehicle for such applications. Hey, Carol, maybe this book is the basis for another book that would use the core philosophies from your research and provide guidance in setting up effective instructional practices in the virtual setting.	Agreed. An appropriate follow-up document would benefit learners and will be addressed in Chapter 5 of the dissertation. Though outside the scope of this study, the follow-up document has been strongly considered by the researcher.
• Any additional practical applications of the research provided.	Acknowledged.

10. Other comments or suggestions?	
• Well done. This product comprehensively provides an overview of the online learning process for new facilitators and also provides the seasoned facilitator an overview of current research.	Acknowledged.
• Carol, is it just me, or is there something strange about having a book on effective online facilitating in a paper and pencil format?	Acknowledged.
• I think this work is very important. I found the information on adult learning and the importance of relationships very interesting and helpful. Great work!	Acknowledged.
• Pg. 7—Barriers of distance evaporate as powerful conferencing capabilities bring learners together across the globe in ways that nearly parallel face-to-face communication. Excellent way to phrase this.	Acknowledged.
• Chapter 2—Focus on Trust and Constructivism, although the constructivism point does not appear to be as strong. See the to dos.	Agreed. Changes were made to strengthen the information on trust and constructivism.
• Celebrate small victories. Good point.	Acknowledged.
• Pg. 102—Creating online social spaces that mimic the areas learners traditionally congregate, such as cafes, hallways, libraries, and lounges, help online learners develop meaningful social, supportive relationships with one another. I used an "All Night Café" this summer in my class. It was a discussion forum that only the students	Acknowledged.

would use. I told them I would not be monitoring it. I did peek once and found it was a place for them to complain a bit about how long it took them to get their textbook.	
• In **They're Not Acting Like Adults!!** No kidding! There is an underlying assumption that because they are older, they will act like professionals. But it is not always the case. Great job addressing this issue. I like how you describe each type of participant and how to deal with them. There is usually a domineering student in the group. It should be addressed right away as it bothers the instructor and the other participants.	Acknowledged.
• Minor editing involving capitalization, punctuation, and grammatical structure was suggested by two of the experts.	Agreed. Editing changes were made to the handbook.

The preliminary field test experts' responses were overwhelmingly positive concerning the information included in the online professional development facilitator's handbook and also the usefulness of the handbook. Revisions were made based on the experts' feedback.

The preliminary field test questionnaire also included six questions that experts rated on a five-point Likert scale. The code for responses included:

1. Strongly Disagree.
2. Disagree.
3. No Opinion.
4. Agree.
5. Strongly Agree.

The information in Table 5 shows the mean response for each criteria pertaining to the online professional development facilitators handbook.

Table 5. Mean Rating of the Handbook's Preliminary Field Test Questionnaire

Criteria	Mean Score
1. The content of the product is based on correct analysis and interpretation of relevant research and literature.	5.00
2. The format of the product is attractive and functional.	4.71
3. The product can help online professional development facilitators design a low risk online professional development environment.	4.71
4. The study group vignettes contain information that is helpful for online professional development facilitators.	4.86
5. The content of the product is of interest to both novices to online professional development and experienced practitioners.	4.71
6. The constructs (professional learning communities, self-directed learning, constructivist-based, coaching, etc.) of the study group vignettes were appropriate.	4.71

The preliminary field test experts' feedback was very positive and ranged from 4.7 to 5.0. A mean rating above 3.0 indicated a favorable rating for each area of the handbook.

Step 5: Revision of the Prototype

The first revision of the online professional development facilitator's handbook was made utilizing the formative data gathered from the preliminary field test panel of experts listed in Step 4. The data collected from the experts was interpreted and analyzed. Overall, the experts were very positive about the relevance and usefulness of the handbook. The experts appreciated the research documentation that supported the handbook. The experts were also very positive about the concrete examples provided in the vignettes. The feedback from the preliminary field test experts helped identify areas in the handbook that needed revision or that required additions in content to make the handbook a more accurate, more effective tool. The preliminary field test experts identified strengths and weaknesses and offered suggestions that would strengthen the handbook. Revisions were made to the prototype and the study progressed to the main field test.

The preliminary field test experts were asked to nominate expert online professional development facilitator practitioners and novice online professional development facilitator practitioners for main field test. Nominees were contacted to determine their willingness to participate in the main field test.

Step 6: Main Field Test

After revisions to the prototype were made, a main field test was conducted to determine whether the proposed handbook sufficiently met the stated objectives of providing a resource that defined the role of an online professional development facilitator and provided information that outlined the knowledge, attitudes, practices, and skills that characterize an exemplary online professional development facilitator. Information was collected that was used to improve and revise the handbook.

The study was designed to have two panels with four members on each panel to gather this information. Panel One was to consist of four expert online professional development facilitator practitioners. Panel Two was to consist of four novice online professional development facilitator practitioners. All eight nominees agreed to serve as members on the main field test panel and were given the choice to receive an electronic or a paper version of the handbook, the main field test instructions (see Appendix F), the main field test questionnaire evaluation form (see Appendix G), and the consent form (see Appendix H). The materials were sent as preferred to all eight panel members.

Feedback was not received from one member of Panel One. Repeated efforts by the researcher to contact the expert practitioner went unanswered. The deadline for return of the materials was extended incrementally and eventually totaled forty-two days. After delaying analysis and interpretation of the other panel members' feedback and postponing completion of the handbook, the main field test moved forward with seven panel members providing feedback.

Panel One consisted of three expert online professional development practitioners. These experts met at least four of the following criteria:

1. Must be recognized as an expert in the field of online professional development (e.g. experienced online course developer, trainer, or facilitator),
2. Must be employed part time as an online professional development facilitator,
3. Must have published materials dealing with online professional development,

4. Must have two or more years experience as a facilitator working with online professional development.

5. Must be a potential user of the product.

Table 6 identifies the three main field test experts, positions they hold, and organizations where they serve. All panel members fully consented to participating in the main field test (see Appendix H). Experts were identified by name to establish professional qualifications. The feedback received from the experts from the main field test questionnaire was not identified by the individual in order to preserve confidentiality.

Table 6. Main Field Test Experts

Name	Position	Organization
Cynthia Garrety	Graduate Student Curriculum and Instruction Technology Coordinator	Iowa State University, Ames, Iowa Grand Community Schools, Boxholm, Iowa
Rae Niles, Ed.D.	Director of Curriculum and Technology	Sedgwick Public Schools, Sedgwick, Kansas
Barb Thorson	Instructional Technology Coordinator	Iredell-Statesville Schools, Statesville, North Carolina

Panel Two consisted of four novice practitioners who were inexperienced online professional development facilitators. The four novice online professional development facilitators reviewed the handbook to provide insight in regard to the ease of use and helpfulness when used by an inexperienced online professional development facilitator. Novice users provided a unique perspective on the accuracy, usefulness, and thoroughness of the information in the handbook.

The novice users were relatively new to online professional development and may serve their employers in other capacities. They may serve as curriculum directors, professional development coordinators and facilitators, building- and district-level administrators, technology leaders, and teacher leaders. These leaders have been expected to provide online professional development as part of their responsibilities and typically, have received little training in online

professional development facilitation. The novice online professional development facilitators met the following criteria:

1. Must have less than two years experience as an online professional development facilitator,
2. Must be employed professionally as a central office administrator, principal, technology coordinator, teacher leader, or curriculum director, and
3. Must exhibit high potential use of the product.

Table 7 identifies the four main field test novice practitioners, positions they hold, and organizations where they serve. All panel members fully consented to participating in the main field test (see Appendix H). Novice practitioners were identified by name to establish professional qualifications. However, the feedback received from the novices from the main field test questionnaire was not identified by the individual in order to preserve confidentiality.

Table 7. Main Field Test Novice Practitioners

Name	Position	Organization
Jerry Butler	Technology Specialist	Educational Services and Staff Development Association of Central Kansas, Hutchinson, Kansas
Mary Ellen Muesing	Composition and Technical Communication Lecturer, Assistant Director of Rhetoric and Writing	University of North Carolina, Charlotte, North Carolina
Denise Seguine, Ed.D.	Chief Academic Officer	Wichita Public Schools, Wichita, Kansas
Laura Wasiellewski, Ph.D.	Director of Teacher Education	Saint Anselm College, Manchester, New Hampshire

Both panels reviewed and evaluated the handbook. The contrasting backgrounds and experiential knowledge of the two panels provided different perspectives of the practicality and utility of the handbook.

These two panels conducted a summative evaluation (see Appendix G). Whereas, the formative evaluation conducted in Step 5 provided positive, constructive, nonjudgmental feedback, the summative evaluation in Step 6 was used to determine if the product was a valid and effective tool for the online professional development facilitator (Dick & Carey, 1985).

The two panels completed a main field test questionnaire (see Appendix G). The panel members were asked to evaluate the quality of the handbook's content in terms of correct analysis and interpretation of relevant research and literature, attractiveness and function of the handbook's format, helpfulness in creating a low risk online environment, helpfulness of examples (vignettes), relevance to both novice and expert online professional development facilitators, and clarity and ease of use. The panels were asked to address three open-ended questions concerning the handbook's greatest strengths, greatest weaknesses, and information that should be included in the handbook. Space was provided for panel members to add any additional comments or suggestions.

Answers from Panel One, the expert online professional development facilitator practitioners, have been recorded verbatim in Table 8. Action taken by the researcher has been documented in the *Researcher's Action* column of Table 8. Three categorized identifiers indicate the action taken by the researcher in response to the panels' answers. *Agreed* indicated the researcher agreed with a change suggested by a panel member and changes were made to the handbook. *Disagreed* indicated the researcher disagreed with a change suggested by a panel member and documents the rationale for not making the suggested change to the handbook. *Acknowledged* indicated the researcher acknowledged a suggestion or comment.

Changes made to the handbook based on feedback from Panel One were specifically described in Table 8.

Table 8. Main Field Test Expert Practitioner (Panel One) Responses

Expert Practitioners' Comments	Researcher's Action
1. The content of the product is based on correct analysis and interpretation of relevant research and literature.	
• The researcher was concise in her description of the product and used current literature to support her endeavor.	Acknowledged.

• Very nicely done. The work is well grounded in the research and literature in the field.	Acknowledged.
A suggestion for work to look at: Bruce Joyce and Beverly Showers, Student achievement through staff development (2002).	Agreed. Joyce and Showers, 2002, work was discussed and cited.
As you discussed online professional development I couldn't help but want to see the point made here, at least briefly about the important role that student motivation plays in the process. You get to it on page 21 but I really feel it would be beneficial to this section to have it mentioned here as well.	Agreed. Student motivation was added. Motivation was also explored in depth later in the handbook.
There were a few areas that I wondered if citations might have strengthened your argument:	Agreed. Citations were added.
Page 15 paragraph one, end of paragraph where you are talking about teacher reflection, I'd like to know that this statement had some grounding in the literature.	Agreed. Citations were added.
Another spot was on page 16, paragraph 1, you make the statement that "since technology is considered to be a powerful medium for learning…" then go on to talk about online professional development. I'm not sure you actually made the argument for the statement about technology so you may want to find a way to add a sentence that can be cited to support this idea.	Agreed. Citations were added. Agreed. Information was added to support the premise.
I would lose the word "Instead" at the beginning of the last paragraph on page 22 (Sorry, now I got into editor mode.).	Agreed. "Instead" was removed.
My only other comment in this area is in regards	Agreed. Changes were made to clarify

to the very beginning of the product, I found myself going back and forth between student and teacher. You'll want to make it very clear what you are talking about because you have teachers as learners/students.

student/learner/teacher. Researcher acknowledges that all teachers remain learners and may perform as students in a course.

I would also like to see Cognitive Coaching introduced somehow earlier than when it simply appears at the end of Chapter 1. I found myself confused at first about why it was being defined and discussed.

Agreed. Information about Cognitive Coaching^{SM} was placed earlier and explained in the product to lessen confusion.

Since you mention knowledge about the change process in your characteristics of effective professional development you may want to tie the things you are saying in Chapter 2 with the change process in order to give your points more credibility along with the literature you cite. This was especially evident in your discussion about trust and relationship building.

Agreed. Changes were made to include discussion about the change process.

Acknowledged.

I would also make sure each point you make in your discussion of trust ties back to online learning to keep your line of argument clear.

Agreed. The connection between trust and online learning was strengthened.

Your case study examples were well-chosen and great ways to demonstrate the points within each chapter.

Acknowledged. The vignettes were based on the author's experiences and were not true case studies.

As you discuss constructivism, I believe you need to at least make reference to Piaget and others in order to ground your work from more recent researchers.

Agreed. Citations were updated and Piaget and others were added to the product.

I was also unclear during this section if you really made the point that constructivism facilitates the development of culture. You may want to

Disagreed. While constructivism supports a culture of learning, constructivism doesn't necessarily

restructure that argument a bit more clearly. Perhaps restate some of the items in your summary to preface your line of argument.	develop culture. Constructivism is only one element of a number of constructs (collaboration, learning community, interactivity, self-directedness, coaching, etc.), when used together, develop a culture that encourages thinking and learning.
Page 61, first complete sentence, I believe you mean learning events, not event.	Disagreed. In this case, "event" was singular and was used by the researcher to signal a defining moment when a learner is engaged in assimilating new knowledge with prior knowledge to create cognitive equilibrium.
Each chapter began as a separate entity, it would help the reader if there was some sort of connecting thread that flowed through the product so that they connections between chapters did not get lost.	Agreed. Changes were made to strengthen transitions between chapters and maintain a central theme.
Pg 101, you are discussing the fact that writing and responding in a discussion forum gives participants a chance to reflect on what they are reading and writing, this would be a great place to put in a citation to support this important statement. You 'sort of' do this, but I'd like it clearer I guess.	Agreed. Source was cited.
• Strongly agree.	Acknowledged.
2. The format of the product is attractive and functional.	
• Well organized and easy to navigate and read. If	Acknowledged.

the reader had questions, it was easy to go back and find the information needed. I enjoyed the discussion questions at the end of the chapters and feel these would help motivated learners extend the learning experience provided by the text.	
• Strongly agree.	Acknowledged.
• The layout of the product has strong eye appeal to the reader, particularly the offset and enlarged font at the beginning of each chapter, the boxed text sprinkled throughout the product, and the boxed dialogue between the two main characters. The use of images also has enhanced the layout.	Acknowledged.

3. The product can help online professional development facilitators design a low risk online professional development environment.	
• Strongly agree.	Acknowledged.
• The combination of research and literature-based information coupled with the vignettes make the product a tool that can serve as a guide to online professional development facilitators.	Acknowledged.
• The relaxed summarized conversational dialogue between the two main characters paints imagery for the reader that facilitates the believability of the experience. It is easy for the reader to imagine himself/herself in a similar setting. There is transfer for the reader from believing it could be you—to also seeing yourself designing a low risk online professional development environment.	Acknowledged.

4. The study group vignettes contain information that is helpful for online professional development facilitators.	
• Understanding comes from dialogue, and as such, being able to imagine what would be said or done in a study group is helpful for facilitating understanding for the reader.	Acknowledged.
• Strongly agree.	Acknowledged.
• I felt the vignettes were a strong piece of the product and wondered if they were a part of a case study done as research for the product. If so, this would have been beneficial to know before reading them. (I admit I could have missed this piece.)	Acknowledged. Vignettes were based on the researcher's experiences, not documented case studies. This was stated in the introduction of the product.
5. The content of the product is of interest to both novices to online professional development and experienced practitioners.	
• Well written, the language was clear and concise and invited readers of all levels into the conversation.	Acknowledged.
• The content would be of interest to the seasoned online professional development facilitator and also to the novice. The content is practical and applicable regardless of experience level.	Acknowledged.
• Strongly agree.	Acknowledged.
6. The constructs (professional learning communities, self-directed learning, constructivist-based, coaching, etc.) of the study group vignettes were appropriate.	
• Strongly agree.	Acknowledged.
• Each of the aforementioned constructs adds to the richness of the content and also to the overall	Acknowledged.

usefulness of the product.	
• Absolutely, my only suggestion might have been a paragraph at the beginning introducing each vignette and one at the end summarizing and flowing back into the writing. Nicely done.	Agreed. Changes were made to provide smoother transitions from text to the vignettes.

7. What is the greatest strength of *Communities of learning and cultures of thinking: The facilitator's role in the online professional development environment?*

• The use of clear, concise language that invites readers of all levels into the conversation that surrounds online professional development. The inclusion of vignettes also helped the reader feel a part of the 'story' of professional development and enabled them to place themselves within the situation as they learned information that would help them structure their own online experiences or facilitate others.	Acknowledged.
• Interactivity.	Acknowledged.
• The greatest strength of *Communities of learning and cultures of thinking: The facilitator's role in the online professional development environment* is the ease of understanding the reader of the content that is being presented. Additionally, it fills a void in current literature for the practitioner.	Acknowledged.

8. What is the greatest weakness of *Communities of learning and cultures of thinking: The facilitator's role in the online professional development environment?*

• The greatest weakness, from a practitioner's point of view, is the fact the product is limited to text.	Agreed. The researcher has strongly considered this application, but at

To be even more usable and more accessible for today's busy practitioner the author should consider making the "written book" an "audio book," too. One that can be downloaded via Audible or the iTunes Store.	present, this is beyond the scope of the study.
• None observed.	Acknowledged.
• I honestly felt the greatest weakness of the product was the beginning chapter or introduction. Working on clarification of your line of argument here and then weaving the rest of the piece along that line would make things flow easier and guide the reader throughout the piece.	Agreed. Changes were made to strengthen the introduction and Chapter 1 in terms of clarity, textual transitions, sequence, and strength of argument.

9. What information should be added to *Communities of learning and cultures of thinking: The facilitator's role in the online professional development environment?*

• Consideration should be given to providing the reader an opportunity for additional online support through the use of current podcasts or other types of online resources.	Disagreed. Resources were embedded within the content (research, definitions, examples, explanations, etc.) and listed in chapter references. Agreed. The researcher has strongly considered using podcasts and other online resources.
Perhaps a final chapter with 8-10 additional resources would be helpful. Two to three sentences describing each would be helpful. If the author does not wish to have an additional chapter—then consideration should be given to adding a bio page that points back to a website where current links could be posted.	Disagreed. In aligning with the constructivist and learning community philosophies of this handbook, the strength of collaboration comes from being responsive to individual and group needs and goals, a process that can be described, but not prescribed.

• None.	Acknowledged.
• I cannot think of anything necessarily that needs to be added to this product but rather organizational issues that will give the product depth as a whole instead of a series of separate chapters and arguments.	Disagreed. The information in the handbook would be unwieldy without some categorizing of information. The format and organization into chapters allows the reader to locate information easily.
10. Other comments or suggestions?	
• Fully developed, clear and precise.	Acknowledged.
• I'm honored to have had the chance to read your work. Please keep me updated on its progress and let me know if you need anything else.	Acknowledged.
• Minor editing involving capitalization, punctuation, and grammatical structure was noted by one of the panel members.	Agreed. Editing changes were made to the handbook.

The main field test experts' responses were very positive concerning the information included in the online professional development facilitators handbook and also the usefulness of the handbook. Revisions were made based on the experts' feedback.

The main field test questionnaire also included six questions that Panel One members rated on a five-point Likert scale. The code for responses included:

1. Strongly Disagree.
2. Disagree.
3. No Opinion.
4. Agree.
5. Strongly Agree.

The information in Table 9 shows the mean response for each criteria pertaining to the online professional development facilitators handbook.

Table 9. Mean Rating by Panel One of the Handbook's Main Field Test Questionnaire

Criteria	Mean Score
1. The content of the product is based on correct analysis and interpretation of relevant research and literature.	4.67
2. The format of the product is attractive and functional.	5.00
3. The product can help online professional development facilitators design a low risk online professional development environment.	5.00
4. The study group vignettes contain information that is helpful for online professional development facilitators.	5.00
5. The content of the product is of interest to both novices to online professional development and experienced practitioners.	5.00
6. The constructs (professional learning communities, self-directed learning, constructivist-based, coaching, etc.) of the study group vignettes were appropriate.	5.00

The main field test experts' feedback was exceedingly positive and ranged from 4.67 to 5.0. A mean rating above 3.0 indicated a favorable rating for each area of the handbook. The mean scores indicated that the main field test expert practitioners found the handbook useful, appropriate, and based on current research. The feedback also indicated that the objectives for the online professional development facilitator's handbook book successfully met the desired objectives.

Answers from Panel Two, the novice online professional development facilitator practitioners, have been recorded verbatim in Table 10. Action taken by the researcher has been documented in the *Researcher's Action* column of Table 10. Three categorized identifiers indicate the action taken by the researcher in response to the panels' answers. *Agreed* indicated the researcher agreed with a change suggested by a panel member and changes were made to the handbook. *Disagreed* indicated the researcher disagreed with a change suggested by a panel member and documents the rationale for not making the suggested change to the handbook. *Acknowledged* indicated the researcher acknowledged a suggestion or comment.

Changes made to the handbook based on feedback from Panel Two were specifically described in Table 10.

Table 10. Main Field Test Novice Practitioner (Panel Two) Responses

Novices' Comments	Researcher's Action
1. The content of the product is based on correct analysis and interpretation of relevant research and literature.	
• Strongly agree.	Acknowledged.
• Overall, I found the content definitely based on correct analysis and interpretation of relevant research and literature.	Acknowledged.
Chapter one provides excellent foundation concepts for understanding the context- page 12 when a facilitator is equipped…online professional development experience.	Acknowledged.
Page 12, the two sections of: In order for students to perform well and in order for teachers to perform well… I like the emphasis on the community of learners and how when teachers become learners these attitudes and behaviors will be duplicated in their students.	Acknowledged.
Page 16, first paragraph: In an online environment, sharing is commonplace…treasury of teaching ideas reminds me of the terrific "conversations" on listserves. Concept of listserv is also described in chapter 4 as building a network and community.	Acknowledged.
Page 92, research provides a good rationale for online community.	Acknowledged.
Page 20, importance of connections and social	Acknowledged.

exchanges	
Page 24, good visual image on first line of "internal cognitive tango"	Acknowledged.
Page 45, listserv analogy of people sharing stories to create a sense of belonging	Acknowledged.
Page 46, good integration of sources to show the importance of trust on the increase of reading and math	Acknowledged.
Page 47-48, importance of trust and online collaboration teams and the amount of time it takes to form a bond and the roles for each member	Acknowledged.
Page 51-52, meaning for personal relevance	Acknowledged.
Page 57, last quote by Galileo Galilei perfectly sums up the point of this chapter	Acknowledged.
Page 67-68, Table 3.2, terrific key principles of heutagogy, especially the first one on how we cannot teach another person directly; we can only facilitate learning	Acknowledged.
Page 92 and all of Chapter 4, learning together as a community reminds me of the importance of the growing trend of, albeit learning communities, where students share many classes and experience different cultural and social events in order to enhance the learners academic experience.	Acknowledged.
A teacher needs to stress that the classroom and the students are in a writing community.	Acknowledged.
Page 135 is an excellent point on how there needs to be an adjustment period for people online instruction from face-to-face.	Acknowledged.

Chapter 6, effective online dialogue/conversation tips/comments	Acknowledged.
Page 138-141, good reminders on conversation suggestions for enhancing communication	Acknowledged.
Page 11, quote about professional development producing greater increases than reducing class sizes, higher salaries, and more experienced teachers-I would like to know more about this because that seems like a bold statement to make.	Disagreed. Statement was not a fabrication of the researcher, but was cited and explained based on extensive research.
Page 14, quote at the bottom of the page about unique to online…sense of ownership and feeling of personal responsibility…altered by geographic separation. Yes, geographic separation alters the situation but I disagree with the point that sense of ownership of knowledge acquisition and feeling of personal responsibility is unique to online professional development because these factors should also be present and encouraged in face to face development as well.	Disagreed. The researcher based the statements within the text on cited research. The researcher does not argue that personal responsibility is absent in face-to-face, but has advocated that in an online environment, the responsibility has shifted when distance becomes a factor.
Page 17, author quote in textbox about the ultimate responsibility for a positive online experience lies in the hands of the facilitator. Yes, the facilitator is extremely important, but the learner has a responsibility as well. I think the key word is "ultimate" but it is a very strong statement.	Disagreed. The facilitator cannot force participants to be responsible. That is outside the facilitator's realm of control. As adult learners, participants exercise self-directedness in terms of personal responsibility.
Page 42, Strong statement/quote that the key to success is not on content but the method the course is delivered. Could that also apply to face-to-face instruction?	Disagreed. The researcher has advocated that exemplary practices in face-to-face professional development provide the model for exemplary online professional development.

Page 96, quote at bottom by Wagner that online interactivity can be equivalent to or exceed interactivity in the face-to-face classroom? Why? How?	Agreed. Changes were made to clarify the rationale behind the cited research study.
See other comments/suggestions section of paper at the end of the review for additional information	Acknowledged.
• As I critically read each section, I consistently looked for key, relevant authors/experts on the topic. Each time, I found that these references were included.	Acknowledged.
• As a novice, it is difficult to ascertain if the product is based on a "correct" analysis. The product appears to be grounded in current research. The analysis appears detailed and thorough.	Acknowledged.
• It appears to me that the author selected research and literature that supported her thesis. I recognized a number of the citations, but some were new and interesting to me.	Acknowledged.
2. The format of the product is attractive and functional.	
• The format is appealing, although I suspect there is still some finalizing to be accomplished with this. Some heads are left isolated at the bottom of the page, while the body of the section is on the following page.	Agreed. Changes were made to accommodate formatting discrepancies based on editing. An index was added once the final revisions were made to the handbook. Page numbers were added to the Table of Contents once final revisions were made to the handbook.

• I thought the format was very professional and I might say "commercial" in that it seemed to be formatted in a manner that reminded me of professionally-produced literature.	Acknowledged.
• Strongly agree.	Acknowledged.
• The format of the product is very attractive and functional. It possesses a good flow of content, research, real-life illustration, and practical application. The format is also visually appealing. It helps to have the text box with the Tavia/Justine information to apply what the research has just stated. The bullet points and quote boxes are also a nice touch.	Acknowledged.
• The product format is attractive. The product appears to be functional in that it appears to meet the primary goals. The product appears functional in that it presents a coherent practical model for the online professional development facilitator. In terms of design, the TO DO/TO PONDER sections as well as the vignettes are interesting and appear to be helpful to a facilitator.	Acknowledged.
3. The product can help online professional development facilitators design a low risk online professional development environment.	
• As a technologist who has never taken a formal and complete online course, and has not been responsible for one, I feel as if I could take what I've gleaned from this work and feel competent in attempting to do so. I'm inspired that good teaching and good methods apply across face-to-	Acknowledged.

face instruction to an online instruction venue. She describes pitfalls and challenges, yet inspires me that I might have success with creating meaningful and valuable experiences in online instruction if I might be called on to do so.	
• Strongly agree.	Acknowledged.
• **Good points that demonstrate design for low risk online environment and points that would help the online professional foster a safe environment** (Researcher's note: practitioner used bold formatting.).	Acknowledged.
Page 19, internet-based professional development…individual construction of meaning is encouraged	Acknowledged.
Page 20-21, last paragraph, the abstract nature …actively contribute to online learning experiences	Acknowledged.
Page 21, process of creating a safe non-threatening environment	Acknowledged.
Page 23, facilitator serves as a mentor while participants construct meaning	Acknowledged.
Page 23, good description of difference between the inexperienced and dynamic online facilitators	Acknowledged.
Page 40, last paragraph "your aim should be….learner would not want to miss"	Acknowledged.
Page 41, good explanation of things inexperienced facilitators do not always realize	Acknowledged.
Page 44-45, strong need for trust and facets for building relationships	Acknowledged.
Page 50, Tavia states that teachers need to believe	Acknowledged.

in the process

Page 51-52, encourage learners to search for meaning that is personally relevant and solutions to real life problems	Acknowledged.
Page 53, networking activities and leadership opportunities	Acknowledged.
Page 53, table 2.1, constructivist principles	Acknowledged.
Page 56, first paragraph, that facilitators purposefully create conditions for teachers to problem solve and concept and strategies are explained is an excellent point	Acknowledged.
A good bit is spent developing the concept of trust and its importance for building on the foundation towards learning	Acknowledged.
Page 71-72, creating respect allows for a safe environment for learners to take risks	Acknowledged.
Page 72, table 3.3, good principles to be aware of and practice to create a safe environment	Acknowledged.
Page 99, success of distance education is key to personalizing the teaching and learning process	Acknowledged.
Page 99, facilitators need to establish low-risk online environments that allow for diversity of thought and critical inquiry and then it follows with a few suggestions as to how to do that	Acknowledged.
(could even have more suggestions especially other than just the vignette)	Agreed. Additional suggestions were added.
• This document encourages thinking toward a self-directed learning approach that is mediated by an expert. This plays out throughout the fractal-like quality of the vignettes, which mirror	Acknowledged.

the cooperative teaching-learning process.	
• This is unclear to me as a novice.	Disagreed. Follow-up with the panel member clarified that the novice panel member lacked experience and thus, found it difficult to respond.

4. The study group vignettes contain information that is helpful for online professional development facilitators.	
• Strongly agree.	Acknowledged.
• The vignettes appear to be helpful.	Acknowledged.
• Yes, I think they are definitely helpful for online professional development facilitators. I like the use of Cognitive Coaching and the vignettes are well explained.	Acknowledged.
Page 43, To be effective, Tavia has to be confident. It may take more than just reading scores to be the catalyst.	Disagreed. Data is a neutral, accepted catalyst that can serve to generate movement forward and ignite a series of appropriate reactions.
Practical application for research previously discussed in the chapter. This is clear in all the vignettes but it really stood out for me on page 73-74 They also build on each other which makes for a complete explanation. The vignettes make the research come alive.	Acknowledged.
It was also good for Justine to paraphrase Tavia's remarks. This story allows for a good analysis of Tavia's thoughts and feelings and thus allows readers to relate and put themselves in Tavia's - place and see how they would react.	Acknowledged.
Page 89-91, good real-life realistic example,	Acknowledged.

Overall, very good flow from points, research to examples, and back again throughout the chapter.	
• I found the storytelling aspect of the group vignettes to be very helpful—I was compelled to read on to see how the challenges revealed in the story were resolved by the characters. Without the personalization lent by the vignettes, I'm afraid the narrative would be quite dry and clinical. I do appreciate the research and citations, but if the reader isn't inspired, the information may fall off on rocky ground. I would, if anything, expand the narrative.	Acknowledged. Vignettes were expanded to enrich the connections to research.
• I think the vignettes are effective. I liked the manner in which the "story " provides the reader a way to reflect on the implementation of the previous learning. The vignettes have a "life-like" feel to them, displaying human nature, as well as the nonlinearness of change and learning.	Acknowledged.
I wonder if including more "dialogue" instead of prose might make them more engaging.	Disagreed. Prose was used to provide examples for application of learning that were succinct and straightforward without entangling the reader in lengthy interactions.
5. The content of the product is of interest to both novices to online professional development and experienced practitioners.	
• I can speak to the interest of a novice. The product appears of interest.	Acknowledged.
• **Very good foundation for a novice and good reminders for experienced online facilitators**	Acknowledged.

(Researcher's note: practitioner used bold formatting.)**.**	
Page 18, Content, process, and context standards	Acknowledged.
Page 19, internet-based professional development…individual construction of meaning is encouraged	Acknowledged.
Page 20-21, last paragraph, the abstract nature …actively contribute to online learning experiences	Acknowledged.
Page 21, process of creating a safe non-threatening environment	Acknowledged.
Page 44-45, strong need for trust and facets for building relationships	Acknowledged.
Page 113 and chapter five, the importance of reflection (for both the student and facilitator) is an excellent point and one in which I regularly engage. Also at [my institution] we are required to submit a portfolio and teaching philosophy and reflection every two years. This is a good practice for a novice or experienced teacher.	Acknowledged.
Page 121 identifies modeling as a key strategy for learning. I use that also and I explain how I would approach a project from as many different angles as possible for the students to see how I think –not that they have to imitate me- but just so they can see how someone else processes ideas.	Acknowledged.
Page 125, again the importance of positive and encouraging feedback	Acknowledged.
A main concern is that the information may be too basic for an experienced online facilitator, but	Disagreed. Feedback from experts and expert practitioners stated they found

	the information helpful.
I could definitely see this information as helpful and inspiring to a novice online professional developer.	Acknowledged.
• The product was useful to me as a "novice" of online professional development. It provoked new thoughts for me. I especially liked the walk-away questions in the "To Ponder" section. Your product format aligns with your message.	Acknowledged.
• My lack of experience in online professional development experience would preclude me from forming suppositions that I would understand what an experienced practitioner would benefit from. As a novice, as mentioned before, I believe it would be encouraging and helpful to me.	Acknowledged.

6. The constructs (professional learning communities, self-directed learning, constructivist-based, coaching, etc.) of the study group vignettes were appropriate.

• Strongly agree.	Acknowledged.
• I was encouraged—effective instruction is the same regardless of delivery method! I believe the author was realistic about the challenges of an online environment and the difficulty of enabling trust—very important—and methods which might be helpful in creating those types of social interactions in a media which tends to be very impersonal and anonymous. As a technologist, I'm guilty of not being perhaps the best at social networking, but I'm inspired by the possibility of creating real, meaningful communities online. I	Acknowledged.

can see the value and worth in doing so.	
• The constructs of the study group vignettes were appropriate.	Acknowledged.
• Yes, definitely. They contained key ingredients from the researching and text to apply the information in the chapter.	Acknowledged.

7. What is the greatest strength of *Communities of learning and cultures of thinking: The facilitator's role in the online professional development environment?*

• Organization of the product is very good; use of vignettes to promote reflection and a sense of implementation issues; well-supported research base; the areas of focus on on-target for professional development.	Acknowledged.
• I believe it is the connection between what is recognized as best practice, state of the art instruction, and the possibility of creating that environment online. That proper instruction was modeled in the vignettes was helpful for me to personalize it to me. I felt that I too could reproduce the success of the subjects in the vignettes.	Acknowledged.
• The greatest strength appears to be the design of the product including the supporting research, vignettes, To Ponder/To Do sections.	Acknowledged.
• There are many strengths to this paper. I like the quotes at the beginning of each chapter and the quotes imbedded in the chapters. The quotes are pertinent to the chapter content and are thought	Acknowledged.

provoking. The tone of the paper is very readable and interesting. The research is integrated well to substantiate the premises. I like how the author concentrates on and cares about the learner and facilitator's feeling of success and learning. The vignettes are interesting and realistic. The In Summary, To Ponder and To Do (application points) are all excellent! All of the tables are relevant and provide excellent additional explanation. One of the greatest strengths is that the content and structure is authentic and allows me as the reader and education professional to have the confidence, ability, and resources to implement this pedagogy. The rationale and strategies are clear and pedagogically sound.

8. What is the greatest weakness of *Communities of learning and cultures of thinking: The facilitator's role in the online professional development environment?*	
• None.	Acknowledged.
• Weaknesses are discussed throughout the review. I did not see any major weaknesses.	Acknowledged.
• I don't know if this is so much a weakness in the work or a weakness in my background, but I felt that I needed more knowledge of the Cognitive Coaching system in order to have the same successes as the mentor in the stories. Perhaps this is not so.	Disagreed. The Cognitive Coaching^{SM} model was a research-based construct that was used to illustrate a support mechanism that allowed the novice online professional development facilitator to construct her own meaning from her experiences and assist her on her journey to becoming a skilled, self-directed expert

	facilitator. The researcher did not expect the reader to be highly skilled at conducting a coaching conversation based on reading the handbook.
• It is not finished yet (formatting).	Agreed. An index was added once the final revisions were made to the handbook. Page numbers were added to the Table of Contents once final revisions were made to the handbook.

9. What information should be added to *Communities of learning and cultures of thinking: The facilitator's role in the online professional development environment?*

• I think it was quite thorough.	Acknowledged.
• See comments and suggestions section below and throughout the review.	Acknowledged.
• None.	Acknowledged.

10. Other comments or suggestions?

• None with the exception that I'm eager to share this work with colleagues who might benefit from it.	Acknowledged.
• Overall, I really enjoyed reading the paper and thought that the insights related well to the research. This paper also provided excellent implementation examples and strategies.	Acknowledged.
One suggestion would be on page 83 in the To Do section, number 3, where it asks the reader to recall a time of disruptive behavior. One could also be asked to recall a frustrating or "disruptive" online experience or what they	Agreed. Changes were made based on the practitioner's suggestion.

imagine a disruptive online experience to be. One concern I had throughout the paper though was the frequent point that online professional development was significantly better than face-to-face development. Page 74 and chapter 4 does a good job of using research to prove and to help me better understand that online development is better but I still have concerns. It almost seems that self-directed learning can only be accomplished online and not face-to-face. The point on page 75 about evaluating progress is very good, but even that can be accomplished online and face-to-face. I do not remember the author ever acknowledging a time when some aspect of the learning process can be accomplished better face-to-face than through online. Page 79 states that online participants are more motivated because they are self-directed. I can see that point but I am not totally convinced that that cannot be accomplished to the same level through face-to-face as well. As the research on page 80 by Bennett states that participants who prefer online display a high level of independence and personal control for their own learning, well if that is true could they not transfer that independence and motivation to any learning situation and not just online? The same idea can be true for page 81 in that facilitators should be in the role of guide for both online and face-to-face instruction.

Starting on page 100 but especially page 101

Disagreed. The researcher's intent was not to argue against face-to-face professional development. Instead, the effectiveness found in face-to-face professional development has been used as a model to improve online professional development. The researcher's intent in this study (Statement of the Problem) was to advocate for strengthening online professional development through exemplary facilitation practices based on research done in face-to-face environments. See practitioner's comments in bold print below as practitioner continued to read product.

Acknowledged.

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section on interaction patterns was a key turning point to help me even greater understand the importance of online learning and the motivation and independence of the learner. I could then see more that the learner may have to take a greater role (Researcher's note: practitioner used bold formatting.).	
I need to think more about the point of proximity and sense of presence on page 116 and its role in learning.	Acknowledged.
Purposeful group projects are essential for both online and face-to-face learning on page 118. I can see how online learning can produce very significant results.	Acknowledged.
After reading this paper, I am very interested and inspired to tackle an online project. This has given me much to consider and implement (some ideas that I may not have considered). I look forward to working on an online project. Overall, a terrific job. I enjoyed reading the paper.	Acknowledged.
• How will this product be evaluated? Has it been piloted? What are the changes based on feed back from facilitators?	Acknowledged. The R&D process has provided the structure necessary to develop a usable, valid product.
• Minor editing involving capitalization, punctuation, and grammatical structure was noted by one of the panel members.	Agreed. Editing changes were made to the handbook.

The main field test novices' responses were positive concerning the information included in the online professional development facilitators handbook and also the usefulness of the handbook. Revisions were made based on the novices' feedback.

The main field test questionnaire also included six questions that Panel Two members rated on a five-point Likert scale. The code for responses included:

1. Strongly Disagree.
2. Disagree.
3. No Opinion.
4. Agree.
5. Strongly Agree.

The information in Table 11 shows the mean response by the novice practitioners for each criteria pertaining to the online professional development facilitators handbook.

Table 11. Mean Rating by Panel Two of the Handbook's Main Field Test Questionnaire

Criteria	Mean Score
1. The content of the product is based on correct analysis and interpretation of relevant research and literature.	4.75
2. The format of the product is attractive and functional.	4.50
3. The product can help online professional development facilitators design a low risk online professional development environment.	4.50
4. The study group vignettes contain information that is helpful for online professional development facilitators.	4.75
5. The content of the product is of interest to both novices to online professional development and experienced practitioners.	4.25
6. The constructs (professional learning communities, self-directed learning, constructivist-based, coaching, etc.) of the study group vignettes were appropriate.	5.00

The main field test novices' feedback was positive and ranged from 4.25 to 5.00. A mean rating above 3.0 indicated a favorable rating for each area of the handbook. The mean scores indicated that the main field test novice practitioners found the handbook useful, appropriate, and based on current research. The feedback also indicated that the objectives for the online professional development facilitator's handbook book successfully met the desired objectives.

However, the novices' (Panel Two) mean score ratings were lower than the experts' (Panel One) mean score ratings. In examining the mean score data, two novice practitioners marked "No Opinion" when they were unsure how to respond. In follow-up interviews with the novice practitioners, they repeatedly acknowledged that, as inexperienced practitioners, they weren't certain about best practices for online professional development facilitators and that they "didn't know what they didn't know." The tentative language used by the novice practitioners in Table 10 supports the hesitancy exhibited in the novices' mean score ratings.

Step 7: Revision of the Final Product

Final revisions to the online professional development facilitator's handbook were made based on analysis and interpretation of data collected from the main field test. The revisions were based on the data gathered from the two main field test panels (experts and novices) listed in Step 6. The data collected from the panel members was interpreted and analyzed. As in the preliminary field test, the panel members were very positive about the relevance and usefulness of the handbook. The panel members appreciated the research documentation that supported the handbook and were also very positive about the concrete examples provided in the vignettes. The feedback from the main field test expert panel was decidedly more positive than the feedback from the novice panel. While the novice panel appreciated the information and structure of the handbook, the novice panel members confessed (in follow-up interviews) to a higher level of uncertainty and were more tentative in their responses due to lack of knowledge in the field, which decreased their confidence in answering the main field test questions. As evidence, one preliminary field test expert had stated that she believed that handbook "would be helpful prior to any online facilitation experience, but even more useful to someone who has completed a few courses because he or she can relate the content through first hand experience and learn strategies to improve their own facilitation skills. It was impossible to read this document without visualizing scenarios from my own facilitation experience."

The main field test feedback helped identify areas in the handbook that required additional revision for clarity and content or needed additions to content to make the handbook a more accurate, more effective tool. The main field test panel members identified strengths and weaknesses and offered suggestions that would further strengthen the handbook. Final revisions

were made to the handbook, *Communities of learning and cultures of thinking: The facilitator's role in the online professional development environment.*

Summary

The research and development (R&D) methodology described and adhered to in this chapter provided a systematic, cyclical process of production, feedback, and revision. This R&D study resulted in a product that will be useful, practical, and timely to disseminate information gained from the study to experienced and novice online professional development facilitators. The systematic process of the R&D methodology allowed for quality input from experts and practitioners new to online professional development facilitation and resulted in the product, *Communities of learning and cultures of thinking: The facilitator's role in the online professional development environment.*

CHAPTER 4 - The Validated Product

Communities of Learning and Cultures of Thinking:
The Facilitator's Role in the Online Professional Development Environment

The validated product for this study was a handbook and has been provided in the following section of the completed dissertation.

Since this product has been purchased by Christopher-Gordon Publishing and is under a restricted contract with Christopher-Gordon Publishing, the product has not been included in this submission.

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Communities of Learning and Cultures of Thinking

The Facilitator's Role in the Online Professional Development Environment

Carol Lynne Brooks Simoneau

Communities of Learning and Cultures of Thinking
The Facilitator's Role in the
Online Professional Development Environment

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Executive Summary

Students benefit when teachers participate in honest dialogue about student work, candidly assess student and teacher needs, make changes based on data and research, and value individual and group contributions. This book outlines the process that educational organizations undergo to develop online learning communities that are organized around collaborative inquiry and collective problem solving. Through this process, participants (teachers) become self-determining learners focused on engagement in appropriate endeavors to increase classroom content knowledge and management skills by identifying their own needs and creating a plan to raise academic achievement and improve their own practices.

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CHAPTER 5 - Conclusions

Introduction

Chapter five summarizes the research and development activities that have been used to create *Communities of Learning and Cultures of Thinking: The Facilitator's Role in the Online Professional Development Environment*. This chapter includes the conclusions and implications of the study and the recommendations for future study.

Summary of Activities

The purpose of this study was to research, develop, test, and validate an online professional development facilitator's handbook. This study was conducted in response to a recognized need for establishing an environment for learning within a virtual context, for developing collaborative, constructivist learning communities within that environment, and for creating capacity for self-directedness that enhanced performance beyond that environment. This handbook clarified the role of an online professional development facilitator and identified the knowledge, attitudes, practices, and skills that have characterized exemplary online professional development facilitators.

The research and development (R&D) methodology developed by Borg and Gall (1989) was adapted and used for this study. The methodology used to develop the handbook adhered to the rigor of Borg and Gall's seven-step research and development cycle (See Figure 1). The proof of concept for *Communities of Learning and Cultures of Thinking: The Facilitator's Role in the Online Professional Development Environment* was conducted in the summer of 2004. A proof of concept questionnaire was created and interviews were conducted with six international and national leaders who are recognized as experts in online professional development facilitation. A need was identified and the researcher proceeded to gather information and research the literature. A prototype of the handbook was developed from January 2007 through April 2007. The preliminary field test was conducted in May 2007 with eight national leaders who were considered experts in online professional development facilitation. Revisions to the prototype, based on feedback from the preliminary field test experts, were completed in June

2007. The main field test was conducted in July 2007 with two panels. Panel One consisted of three expert online professional development facilitator practitioners. Panel Two consisted of four novice online professional development facilitator practitioners. Revisions to the final product based on feedback from the two main field test panels were made in August 2007. The final product was completed in September 2007.

Research Questions and Results

The purpose of the study was to develop a resource for experienced and novice online professional development facilitators who desire to become exemplary facilitators of learning in the online environment. Two research questions were established and answered.

1. <u>What knowledge, attitudes, practices, and skills characterize an exemplary online professional development facilitator?</u>

The knowledge, attitudes, practices, and skills that characterize an exemplary online professional development facilitator were developed from the literature review and feedback from the preliminary field test experts and two main field test panels of expert and novice online professional development practitioners. Specific knowledge, attitudes, practices, and skills were identified and incorporated into *Communities of Learning and Cultures of Thinking: The Facilitator's Role in the Online Professional Development Environment.*

Exemplary online professional development facilitators embody key characteristics. Exemplary online professional development facilitators understand that learning is the transformational process of constructing personal understanding through interactions with others while collectively engaging in challenges that are novel and transferable to other situations and settings. Exemplary online professional development facilitators understand that they must be intentional in their actions, expectations, and decisions as they construct a risk-free, trusting online environment where learners (teachers) are expected to self-assess their present needs and are expected to be self-directed to co-create a curriculum designed to serve the diverse needs of their students. Exemplary online professional development facilitators understand the critical role they play in creating collaborative, interactive communities that work to build individual self worth and establish collective group efficacy. Exemplary online professional development facilitators view themselves as continual learners, pose questions with which they personally struggle, provide and receive support, and regard learners and learners' efforts as works in

progress. Exemplary online professional development facilitators recognize and value the adult learner and gradually release the responsibility for learning to the adult learner. They also understand that a virtual environment lacks verbal and nonverbal cues typically utilized in face-to-face communication. As a result, they carefully construct online interaction that is intellectually challenging, yet pleasurable. Exemplary online professional development facilitators engage participants in dialogue by posing questions intended to stimulate higher-level thinking and assist learners as they apply, analyze, and synthesize content relative to their personal needs.

2. <u>What instructional strategies are effective in planning, implementing, and facilitating online professional development?</u>

Exemplary online professional development facilitators incorporate a wide array of effective instructional strategies in planning, implementing, and facilitating online professional development. Exemplary online professional development facilitators skillfully utilize the interactive tools the online medium offers as a mode of delivery to help participants connect in dynamic, multidimensional ways that enhance the learning process. They seek to humanize the online environment in order to create a learner-centered environment focused on enhanced performance. Successful facilitators model their own learning habits and personal pursuit of knowledge as they interact with participants and share responsibility for participants' learning growth. Exemplary online professional development facilitators transition from knowledge expert to learning partner. This process requires facilitators capable of equipping participants for self-directed knowledge acquisition. To accomplish this task, online professional development facilitators challenge learners with concepts or ideas that encourage growth in the learner's own educational beliefs and value systems. The skilled facilitator focuses on elevating participants' consciousness of their own personal perspectives and support participants as they develop an awareness of alternative perspectives and experiences that exist beyond the participants' present space. Exemplary online professional development facilitators diligently monitor and modify the online environment based on the needs of the online participants. They support collaborative, disciplined inquiry and structure authentic learning events as collective problem solving opportunities. Successful online professional development facilitators establish an environment that is conducive to growing professional learning communities through their understanding of the needs of adult learners.

Conclusions

Through this study, the researcher found that an online professional development facilitator plays a critical role in the success of an online participant. This study confirms that the quality of the facilitator is a powerful variable in participant learning. This particular finding extends the research conducted by Block (2000), Palloff and Pratt (2001), Darling-Hammond (2000), and Haycock et al. (2001) on the impact that the quality of the classroom teacher has on the achievement of the students.

The knowledge, attitudes, practices, and skills fluently utilized by an exemplary online professional development facilitator can provide the impetus and the sense of wellbeing that an online learner needs in an unfamiliar learning environment. Unfortunately, these attributes are not always intuitive for many facilitators, a finding from this study that supports work conducted by Garmston (2004).

For online professional development facilitators to be orchestrators of learning, comprehensive resources need to be readily accessible. The researcher found that information about specific characteristics that distinguish exemplary online professional development facilitators was fragmented. This study resulted in the development of *Communities of Learning and Cultures of Thinking: The Facilitator's Role in the Online Professional Development Environment*, an online facilitator's handbook that addresses this void by providing a resource that supports an online professional development facilitator in the complex transition from a face-to-face environment to a virtual environment and from a teacher-directed perspective to a learner-directed perspective.

The researcher concluded that effective instructional practices and processes are universal across different environments and different populations. The researcher found that as technology alters the learning environment and provides new structures to access knowledge and construct understanding about professional practices, many of the same learning processes used in face-to-face professional development, including collaboration, inquiry, dialogue, and reflection, remain highly effective. This particular finding expands on research by Anderson (2004) and Dede (1996). The ultimate desire in utilizing these learning processes is to build teacher capacity that will result in increased student achievement. In the online environment, superior facilitation skills are necessary to ensure that the behaviors needed to effectively engage with content and with other learners in a virtual context are present. In any environment, online or face-to-face,

the difference between learning experiences that enrich and learning experiences that disappoint lies in effective facilitation, a finding that confirms research conducted by Milheim (1995) and Smith (2005). This handbook provides a practical model with concrete examples that serve to enable the online professional development facilitator when transferring these principles to their own setting.

This study confirms previous research by Hase (2003) that states that participants who are new to online professional development need immediate feedback and interaction to feel connected to the facilitator and other participants. Otherwise, feelings of isolation, anxiety, and confusion will reduce feelings of personal safety, which will in turn, will stifle learning. Skilled facilitation diminishes social isolation that can be manifested within the potentially impersonal online environment.

When investing in professional development, educational leaders recognize the power of learning constructs such as systems thinking, professional learning communities, constructivist learning, and recognizing and honoring the adult learner. Ongoing professional development driven by context-specific needs of an educational organization raises academic achievement and improves teacher practices. When educational systems openly dialogue about student work and react appropriately to student and teacher needs, these organizations become cultures that value thinking.

A synthesis of the major conclusions that resulted from this study follows:

Systems thinking, driven by an organization's collective vision and grounded in research, produces purposeful, sustained reform. Professional development that is aligned with an organization's vision influences teachers' internal thought process and results in enhanced teacher and student performance. Planning within a system establishes an organized, efficient procedure for initiating change and maintaining improvement. These findings support research conducted by Schlechty, (2001), Senge (1990), and Sparks (2002).

Professional learning communities promote productive, supportive relationships that allow participants to reflect on current beliefs and practices in order to make skilled decisions that foster learning and growth. Learning within a community cultivates a commitment to other learners that energizes and sustains the improvement process. When all community members believe themselves to be learners and invest personally in the learning process, purposeful professional development occurs. These conclusions are congruent with research conducted by

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DuFour et al. (2006) and Gunawardena (2004). Anderson (2004), Belenky and Stanton (2000), Dede (2004), and Durrington et al. (2006) found that learners in reciprocal, interactive cultures redistribute and balance the structures of power and control between learner and facilitator, paralleling the researcher's conclusions. Studies by Bryk and Schneider (2004) and Tschannon-Moran (2004) provide evidence that when communities, both face-to-face and online, exhibit high levels of relational trust, learners' level of commitment to a collective vision has favorably impacted student achievement. Goddard et al. (2000, 2004) show that communities that share a sense of group efficacy can positively impact student learning. These studies by Bryk and Schneider, Tschannon-Moran, and Goddard et al. concur with this researcher's findings from the preliminary and main field test panel members.

The adult learner is motivated to learn when they understand why something is important for them to learn and when they are allowed to be self-directed. Learners who are self-directed are more motivated to seek self-improvement based on honest and accurate self-assessment, which leads to insights into their own competencies and capabilities. Findings from this study are congruent with Knowles' (1980) andragogy theory and Hase' (2003) heutagogy theory and Costa and Garmston's (2002) work on the self-directed learner. Katz and Associates' (1999) study validates the purposeful transition of the facilitator as information transmitter to the facilitator as a guide for learning, which confirms this researcher's findings.

Constructivist learning theories and practices allow learners to assemble their own understandings of the learning process within their own individual contexts. Brooks and Brooks' (1993; 2000) studies found that constructivist learning constructs allow learners to become better problem-posers and better problem-solvers in authentic situations where the facilitator has served as a coach to support the construction of meaning while allowing learners to create connections between learning concepts. Preliminary and main field test panel findings confirm Brooks and Brooks' research. When utilizing constructivist theory, professional development moves away from a teacher-directed, traditional stand-and-deliver format to an environment of collaboration, support, and professional collegiality. The researcher's findings confirm and extend Sparks & Hirsh's (1997) writings on the effectiveness of a learner-centered environment.

This study is timely in that many educational organizations are currently considering the worth of investing time and resources in professional learning communities, collaborative environments, interactivity, constructivist learning, self-directedness, and coaching and are

seeking ways to connect these powerful structures and embed them into current practices. Incorporating these constructs in face-to-face professional development is complicated. The task proves monumental when moved to the online environment.

This study provides a conceptual framework that is embedded within realistic vignettes that lend practicality within concrete structures that online professional development facilitators can adapt and mirror. These vignettes provide examples that online professional development facilitators can use to clarify facilitation of professional development in the online environment. Use of *Communities of Learning and Cultures of Thinking: The Facilitator's Role in the Online Professional Development Environment* increases the novice online professional development practitioners' confidence and efficacy in their own abilities to create and sustain learning environments via the Internet by utilizing authentic contexts with real world problems, within a real world setting, and providing real world solutions.

Implications

The following implications were derived from the research, development, and validation of *Communities of Learning and Cultures of Thinking: The Facilitator's Role in the Online Professional Development Environment.*

The handbook was designed to assist in the process of humanizing the online experience by maintaining the focus on learners and assessing their current and future needs and adjusting the environment to match the curve of their learning. This handbook was created to assist the online professional development facilitator when considering the internal thought processes, the criteria, and the rationale that drive instructional decisions and actions that result in enhanced performance for all—facilitator, participants, and students.

1. This study is significant for experienced online professional development facilitators who work within the academic community of higher education, within public and private K-12 school systems, and within regional learning centers focused on supporting school reform. These findings are of relevance to educational leaders who seek to improve their online facilitation skills in areas of professional learning communities, constructivist learning, self-directedness, and coaching. This study provides a needed resource to assist experienced online professional development

practitioners as they assess their existing practices, explore new practices, and align their work with current research.

2. This study is significant for novice online professional development facilitators who are new to the virtual environment. The online professional development facilitator's handbook outlines specific online techniques, structures, and strategies found to be effective in creating high-functioning, intellectually stimulating online learning communities that encourage individual reflection and growth. This study is relevant for inexperienced online professional development facilitators who need assistance clarifying and developing their role as an online professional development facilitator. This study is particularly pertinent for novice online professional development facilitators as they begin to form and reform their own personal values, beliefs, and goals that they hold about learning.

3. This study is significant for organizations that support preservice teachers and their supervisors and beginning teachers and their experienced mentors. As these novice teachers are inducted into the norms and cultures of the world of education, this study provides a promising avenue to address common concerns, levels of knowledge, and trajectories of learning.

4. This study is significant for educational organizations as they consider the worth and strength of professional learning communities, collaborative environments, interactivity, constructivist learning, self-directedness, and coaching within an online environment. As educational organizations become communities of purpose and begin to move forward as communities with purpose, the online format is an enticing venue with which to connect these powerful structures and embed them into current practices. This study is especially valuable for educational organizations as this study provides a model for implementing such endeavors with the efficiency and effectiveness that encourage an innate interdependence that creates a strength that lives within the community of learners.

5. This study is valuable as an assessment tool to discern the quality of online offerings for educators who are seeking to use online professional development to provide or supplement teacher training.

Recommendations for Future Studies

The following are recommendations for future studies in this area:

1. Future studies should be conducted for the purpose of creating a "how to" guide that would assist online professional development facilitators as they move from inception, into implementation, and through completion utilizing the constructs outlined in the handbook, e.g., professional learning communities, constructivist learning, self-directedness, coaching. The intent of this study was to review, analyze, and synthesize current research regarding online professional development practices and procedures to clarify and define the knowledge, skills, practices, and attitudes that are exhibited by exemplary online professional development facilitators. This study was not intended to provide a detailed step-by-step guide to developing an online professional development course. However, some novice professional development facilitators would move forward with greater confidence and ease if equipped with a more detailed resource at hand. Reviewers of the handbook cited great interest in such a resource.

2. Future studies should be conducted on the potency of the qualitative and quantitative effects online professional development designed for teachers has on student learning. A tool to assess student growth as a result of teachers' experiences in online professional development would provide further validity to the effectiveness of online professional development. As teachers reflect on new knowledge and skills and begin to implement changes as a result of their participation in online learning experiences, a logical assumption is that teachers would gain a cause-effect sense of essential practices and then would begin to make choices within the classroom that would transform their practice and result in increased student learning. The interactive tools offered through technology would serve as an enhancement to the process of reflection as teachers cognitively respond to formative and summative student assessments through online collaboration and dialogue.

3. Future studies should be conducted on the impact that a structured support system, e.g., coaching or mentoring, that has been provided through an online format has on transferring and sustaining new learnings in classroom practice. When teachers benefit professionally through relationships that are trust-filled, collaborative, and

interactive, the supposition is that those same constructs are transferred to classroom practice.

Summary

Students benefit when teachers have honest dialogue about student work, candidly assess student and teacher needs, make changes based on data and research, and value individual and group contributions. When organizations, virtual or face-to-face become cultures of thinking and communities of learning, all learners benefit. In the online environment, the online professional development facilitator is the lynchpin in the vehicle to enhanced growth.

The purpose of this study was to research, develop, and validate an online professional development facilitator's handbook that would clarify and demonstrate the knowledge, attitudes, practices, and skills utilized by exemplary online professional development facilitators. This study has successfully ascertained practical instructional strategies that are effective in planning, implementing, and facilitating online professional development.

The research and development process used to produce *Communities of Learning and Cultures of Thinking: The Facilitator's Role in the Online Professional Development Environment* validated the handbook in its present form. The study produced and provided a resource for online professional development expert and novice practitioners to use when developing online professional development communities that are supportive, interactive, and that foster genuine learning. This fragile balance involves providing guidance and clear expectations while allowing teachers to take an active role in their own learning. The strength of the community is found in the collective knowledge constructed in an atmosphere of managed ambiguity and cognitive dissonance where trust is present and risk-taking encouraged.

References

Acker, S., & McCain, T. (1993). *The contribution of interactivity and two-way video to successful distance learning applications: A literature review and strategic positioning.* Columbus, Ohio: The Ohio State University.

Aiken, L. (1996). *Rating scales and checklists: Evaluating behavior, personality, and attitudes.* New York: John Wiley & Sons, Inc.

Allen, D. (1997). *Increasing participation in on-line courses and assessing on-line students.* Norfolk, VA: Old Dominion University.

Amit, V. (2002). *Realizing community: Concepts, social relationships and sentiments.* Routledge, London: European Association of Social Anthropologists.

Anderson, B. (1991*). Imagined communities: Reflections on the origin and spread of nationalism* (Rev. ed.). London and New York: Verso.

Anderson, B. (2004). Dimensions of learning and support in an online community. *Open Learning, 19*(2), 183-190.

Anderson, T. D., & Garrison, R. D. (1995). Transactional issues in distance education: The impact of design in audioteleconferencing. *The American Journal of Distance Education, 9*(2), 27-45.

Apple Computer. (1995). *Changing the conversation about teaching, learning, & technology: A report on 10 years of ACOT research.* Cupertino, CA: Author.

Association for Supervision and Curriculum Development [ASCD]. (2002*). A lexicon of learning: What educators mean when they say...* Retrieved November 9, 2002, from http://www.ascd.org/educationnews/lexicon/lexiconoflearning.html

Barab, S., Thomas, M., & Merrill, H. (2001). Online learning: From information dissemination to fostering collaboration. *Journal of Interactive Learning Research, 12*(1), 105-143.

Barker, B. O., & Dickson, M. W. (1996). Distance learning technologies in K-12 schools: Past, present and future practice. *TechTrends, 41*(6), 19-22.

Barkley, E., Major, C., Cross, P., & Angelo, T. (2004). *Collaborative learning techniques: A handbook for college faculty*. San Francisco: Jossey-Bass.

Barron, L., & Goldman, E. (1994). Integrating technology with teacher preparation. In B. Means (Ed.). *Technology and education reform* (pp. 81-110). San Francisco: Jossey-Bass.

Bates, A. W. (1995). *Technology, open learning and distance education.* London: Routledge.

Beard, L. A., & Harper, C. (2002). Student perceptions of online versus campus instruction. *Education*, 122, 658-663.

Beatty, B. J. (2002). *Social interaction in online learning: A situationalities framework for choosing instructional methods.* (Doctoral dissertation, Indiana University, 2002). Dissertation Abstracts International DAI-A 63/05, p. 1795.

Belenky, M. F., & Stanton, A. V. (2000). Inequality, development, and connected knowing. In J. Mezirow & Associates (Eds.), *Learning as transformation: Critical perspectives on a theory in progress* (pp.71-102). San Francisco: Jossey-Bass.

Ben-Jacob, M. G. (1997). Distance learning: An international perspective. *Journal of Educational Technology Systems, 26*(3), 209-213.

Bender, T. (2003). *Discussion based online teaching to enhance student learning: Theory, practice and assessment.* Sterling, VA: Stylus.

Bennett, S., Priest, A., & Macpherson, C. (1999). Learning about online learning: An approach to staff development for university teachers. *Australian Journal of Educational Technology, 15*(3), 207-221.

Berge, Z. L. (1995). Facilitating computer conferencing: Recommendations from the field. *Educational Technology, 35*, 22-30.

Berge, Z. L. (1998). Characteristics of online teaching in post-secondary formal education. *Educational Technology, 37*(3), 35-47.

Berge, Z., & Muilenburg, L. (2001). Obstacles faced at various stages of capability regarding distance education in institutions of higher learning. *Tech Trends 46*(4), 40-45. Retrieved September 9, 2004, from http://www.emoderators.com/barriers/hghred_stgs.shtml

Besser, H. (1996). Issues and challenges for the distance independent environment. *Journal of the American Society for Information Science, 47,* 817-820.

Black, P. (2003, April). *A successful intervention: Why did it work?* Paper presented at American Educational Research Association (AERA), Chicago, IL.

Blanchette, J. (2001). Questions in the online learning environment. *Journal of Distance Education, 16*(2). Retrieved September 14, 2005, from http://cade.athabascau.ca/vol16.2/blanchette.html

Block, C. (2000). *A case for exemplary classroom instruction: Especially for students who come*

to school without the precursors for literacy success (49th ed.). National Reading
Conference Yearbook. Clemson, NC: Clemson University.

Bonk, J. C., Malikowski, S., Angeli, C., & East J. (1998). Web-based case conferencing for
prospective teacher education: Electronic discourse from the field. *Journal of
Educational Computing Research, 19*(3), 269-306.

Bonk, C., Wisher, R. A., & Lee, J. Y. (2004). Moderating learner-centered e-learning: Problems
and solutions, benefits and implications. In T. S. Roberts (Ed.), *Online collaborative
learning: Theory and practice* (pp. 54–85). Hershey, PA: Information Science
Publishing.

Borg, W., Gall, J., & Gall, M. (1993). *Applying educational research: A practical guide for
teachers.* (3rd ed.). White Plains, NY: Longman.

Borg, W., & Gall, M. (1989). *Educational research: An introduction* (5th ed.). White Plains,
NY: Longman.

Bossé, M.J., & Rider, R.L. (2005). Investigating distance professional development: Lessons
learned from research. Proceedings of the North American Chapter of the International
Group for the Psychology of Mathematics Education, Roanoke, VA, October 20-23,
2005. Retrieved January 15, 2006, from
http://www.itdl.org/Journal/Dec_06/article01.htm

Boud, D. (1995). Assessment and learning: Contradictory or complimentary? In P. Knight (Ed.),
Assessment for learning in higher education (pp. 35-48). London: Kogan Page Limited.

Bourne, J. R., McMaster, E., Rieger, J. & Campbell (1999). Paradigms for on-line learning: A
case study in the design and implementation of an asynchronous learning networks
(ALN) course. Retrieved January 15, 2006, from
http://www.aln.org/alnweb/journal/issue2/assee.htm

Boverie, P., Nagel, L., McGee, M., & Garcia, S. (1998). Predictors of satisfaction for distance
learners: A study of variable conditions. *SIGCUE Outlook, 26*(2), 2-7.

Bowman, C., & McCormick, S. (2000). Comparison of peer coaching versus traditional
supervision effects. *Journal of Educational Research, 93*(4), 256-261.

Bowman, I., Boyle, A., Greenstone, K. A., Herndon, L. D., & Valente, A. (2000). Connecting
teachers across continents through online reflections and sharing. *TESOL Journal, 9*(3),
15-18.

Bragg, W. P. (1999). *Constructivist learning and web-based computer conferencing: Qualitative analysis of online interaction among graduate students.* Unpublished doctoral dissertation, George Mason University.

Bransford, J. D., Brown, A. L., & Cocking, R. R. (Eds.). (2000). *How people learn: Brain, mind, experience, and school.* Commission on Behavioral and Social Sciences and Education National Research Council. Washington, DC: National Academy Press.

Brewer, B. W., DeJonge, J. O., & Stout, V. J. (2001). *Moving to online: Making the transition from traditional instruction and communication strategies.* Thousand Oaks, CA: Corwin.

Brigham, D. (2003). *Benchmark information survey.* Unpublished presentation, Excelsior University.

British Educational Communications and Technology Agency. (2006). *What the research says about ICT and continuing professional development (CPD) for teachers.* Coventry, UK: Becta ICT Research.

Brookfield, S. (1986). *Understanding and facilitating adult learning.* San Francisco: Jossey Bass.

Brooks, J., & Brooks, M. (1993). *The case for the constructivist classroom.* Alexandria, VA: Association for Supervision and Curriculum Development.

Brooks, J., & Brooks, M. (2000). *In search of understanding: The case for constructivist classrooms*. Upper Saddle River, NJ: Prentice-Hall.

Brown, A., & Green, T. (2003). Showing up to class in pajamas (or less!): The fantasies and realities of on-line professional development. *The Clearing House, 6*(3), 148-152.

Brown, A. L., Bransford, J. D., Ferrara, R. A., & Campione, J. (1983). Learning, remembering, and understanding. In J. Flavell, & E. M. Markman (Eds.), *Cognitive development* (pp. 78-166). New York: John Wiley and Sons.

Brown, A. L., & Campione, J. C. (1994). Guided discovery in a community of learners. In K. McGilly (Ed.), *Classroom lessons: Integrating cognitive theory and classroom practice* (pp. 229–270). Cambridge, MA: MIT Press Bradford Books.

Brown, J. R. (1999). *Skills teachers need to successfully integrate technology into their classrooms.* Unpublished doctoral dissertation, University of New Mexico.

Brown, R. (2001). The process of community-building in distance learning classes. [Electronic version]. *Journal of Asynchronous Learning Networks, 5*(2) Retrieved September 1,

2006, from http://www.aln.org/publications/jaln/v5n2/v5n2_brown.asp

Bryk, A.S., & Schneider, B.L. (2002). *Trust in schools: A core resource for improvement.* New York: Russell Sage Foundation.

Burge, E. J. (1994). Learning in a computer conferenced context: The learners' perspective. *Journal of Distance Education, 9*(1), 19-43.

Burnett, B., & Roberts, A. (2005). Online collaborative assessment: Unpacking process and product. In P. Comeaux (Ed.), *Assessing online learning* (pp. 55-71). Bolton, MA: Anker Publishing.

Calkins, L. (2001). *The Art of Teaching Reading.* New York: Addison-Wesley Publications.

Candy, P. C. (1991). *Self-direction for lifelong learning: A comprehensive guide to theory and practice.* San Francisco: Jossey-Bass.

Cantor, J. A. (1997). *Experiential learning in higher education: Linking classroom and community.* Washington, DC: George Washington University: Graduate School of Education and Human Development.

Carr-Chellman, A., Dyer, D., & Breman, J. (2000). Burrowing through the network wires: Does distance detract from collaborative authentic learning? *Journal of Distance Education, 15*(1). Retrieved May 26, 2006, from http://cade.athabascau.ca/vol15.1/carr.html

Cervero, R. (1988*). Effective continuing education for professionals.* San Francisco: Jossey-Bass.

Christophel, D. (1990). The relationships among teacher immediacy behaviors, student motivation, and learning. *Communication Education, 39*, 323-340.

Chubbuck, S. M., Clift, R. T., Allard, J., & Quinlan, J. (2001). Playing it safe as a novice teacher: Implications for programs for new teachers. *Journal of Teacher Education, 52*, 365-376.

Clardy, A. (1998). Understanding self-directed learning. *Corporate University Review, 6*(4), 17-31.

Clinchy, B. M. (1995). Goals 2000: The student as object. *Phi Delta Kappan, 76*(8), 597-604.

Collis, B. (1998). New didactics for university instruction: Why and how? *Computers & Education, 31*(4), 373-393.

Collison, G., Elbaum, B., Haavind, S., & Tinker, R. (2000). *Facilitating online learning: Effective strategies for moderators.* Madison, WI: Atwood.

Comeaux, P. (2005). *Assessing online learning.* Bolton, MA: Anker Publishing.

Comstock, D., & Fox, S. (1995). *Computer conferencing in a learning community.* Retrieved January 1, 2003, from http://www.seattleantioch.edu/VirtualAntioch/compcon1.5.htm

Conrad, R., & Donaldson, J. (2004). *Engaging the online learner: Activities and resources for creative instruction.* San Francisco: Jossey-Bass.

Corcoran, T. B. (1995). Helping teachers teach well: Transforming professional development. CPRE policy briefs. *Consortium for Policy Research in Education*, Brunswick, NJ.

Costa, A., & Garmston, R. (2002). *Cognitive Coaching: A foundation for renaissance schools* (2nd ed.). Norwood, MA: Christopher-Gordon.

Cranton, P. (2006). Understanding and promoting transformative learning: A guide for educators of adults (2nd ed.). San Francisco: Jossey-Bass.

Cronje, J. (1999). *Using the Internet to facilitate co-operative distance learning.* Retrieved October 10, 2005, from http://hagar.up.ac.za/catts/rbo96.html

Crooks, T. (2001, September). *The validity of formative assessments.* Paper presented to the British Educational Research Association Annual Conference, University of Leeds, Leeds, UK.

Cutler, R. (1995). Distributed presence and community in cyberspace. *Journal of Asynchronous Learning Networks, 3*(2), 12-32.

Danchak, M. M. (2000). Giving web-based courses an active human face. *Institute for Teaching and Learning,* Storrs, CT.

Darling-Hammond, L. (1989). Accountability for professional practice. *Teachers College Record, 91*, 59-80.

Darling-Hammond, L. (2000). Teacher quality and student achievement: A review of state policy evidence. [Abstract]. *Educational Policy Analysis Archives, 8*(1) 1-42.

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

Davenport, T. H., & Prusak, L. (1998). *Working knowledge: How organizations manage what they know.* Boston: Harvard Business School Press.

Deci, E. (1995). *Why we do what we do.* New York: Penguin Books.

Dede, C. (1996). The evolution of distance education: Emerging technologies and distributed learning. *The American Journal of Distance Education, 10*(2), 4-36.

Dede, C. (2000). Emerging influences of information technology on school curriculum. *Journal of Curriculum Studies 32*, 3–7.

Dede, C. (2004, September). Enabling distributed learning communities via emerging technologies: Part one. *T.H.E. Journal, 32*(2), 12-22.

Dehler, C. (2004). *The pedagogy and design of online teacher professional development.* Society for Information Technology & Teacher Education International Conference Proceedings [SITE], Atlanta, GA.

Delaney, J. G. (1999, Winter). *What are learner-centered schools?* Retrieved October 10, 2005, from http://www.mun.ca/educ/faculty/mwatch/vol1/delaney2.html

Dereshiwsky, M. I. (1998). Rules of the road: Paving the way to effective cyber course instruction. *Professional development handout*, Minneapolis, MN: The Graduate School of America.

Desetta, A., & Wolin, S. (Eds.). (2000). *The struggle to be strong: True stories by teens about overcoming tough times*. Minneapolis, MN: Free Spirit Publishing.

Deubel, P. (2003). Learning from reflections: Issues in building quality online courses. *Online Journal of Distance Learning Administration, 6*(3). Retrieved May 30, 2006, from http://www.westga.edu/~distance/ojdla/fall63/deubel63.htm

Dewar, T., & Whittington, D. (2000). *Teaching online: A new skill set.* Paper presented at Working Knowledge – Productive Learning at Work Conference. Retrieved May 30, 2006 from http://www.calliopelearning.com/resources/papers/teach.pdf

Dewer, T. (1996). *Adult learning online.* Retrieved on June 9, 2002, from http://www.telusplanet.net/phblic/tddewar/oned2.html

Diaz, D. P. (2002, May/June). Online drop rates revisited. *The Technology Source.* Retrieved January 4, 2004, from http://technologysource.org/article/online_drop_rates_revisited/

Dick, W., & Carey, L. (1985). *The systematic design of instruction.* Glenview, IL: Scott Foresman.

Dick, W., & Carey, L. (1990). *The systematic design of instruction.* (4th ed.). New York: Harper Collins.

Dick, W., Carey, L., & Carey, J. (2004). *The systematic design of instruction* (6th ed.). Boston: Allyn & Bacon.

Dickson, G. W., & Segars, A. (1999). Redefining the high-technology classroom. *Journal of Education for Business, 74*(3), 152-156.

Dillenbourg, P., Baker M., Blaye A., & O'Malley, C. (1995). The evolution of research on collaborative learning. In E. Spada & P. Reiman (Eds.), *Learning in humans and machine: Towards an interdisciplinary learning science* (pp. 189-211). London: Pergamon.

Dillon, C. L., & Cintron, R. (1997). Distance education and the community college: From convention to vision. In C. L. Dillon & R. Cintron (Eds.), *New directions for community colleges: No. 99. Building a working policy for distance education* (pp. 63-72). San Francisco: Jossey-Bass.

Dirks, J., & Lavin, R. (1995). Assumptions about the adult learner. *Nebraska Institute for the Study of Adult Literacy.* Retrieved October 20, 2002, from http://www.archon.educ.kent.edu/~nebraska/curric/ttiml/aaal.html

Dirkx, J., & Prenger, S. (1995). *Planning and implementing integrated theme-based instruction: A curriculum guide and resource book.* Nebraska Institute for the Study of Adult Literacy: University of Nebraska-Lincoln.

Dittmer, A. (1999). The daunting task of faculty development. In V. M. Rentel & A. Dittmer (Eds.), *Themes and issues in faculty development.* Maryland: University Press of America.

Driscoll, M. (1998). *Web-based training: Using technology to design adult learning experiences.* San Francisco: Wiley.

Duchastel, P. (1997). A motivational framework for web-based instruction. In B. H. Khan (Ed.), *Web-based instruction* (pp. 179-184). Englewood Cliffs, NJ: Educational Technology Publications.

DuFour, R., DuFour, R., & Eaker, R. (2006). *Professional learning communities at work: Plan book.* Solution Tree: Bloomington, IL.

Durrington, V. A., Berryhill, A., & Swafford, J. (2006). Strategies for enhancing student interactivity in an online environment. *College Teaching, 54*(1), 190-193.

Duttweiler, P. (2000). *Do we practice what we preach?* Clemson, SC: National Dropout Prevention Center.

Eastmond, D. V. (1995). *Alone but together: Adult distance study through computer conferencing.* Cresskill, NJ: Hampton Press.

Ebeling, E. R. (1994). Self-undirected learning. In H. B. Long & Associates (Eds.), *New ideas about self-directed learning* (pp. 81-92). Norman, OK: Oklahoma Research Center for Continuing Professional and Higher Education.

Eisenhower National Clearinghouse (ENC). (2002). *By your own design.* Retrieved October 20, 2002, from http://www.enc.org/professional/guide/

Ellis, A., & Phelps, R. (2000). Staff development for online delivery: A collaborative team-based action learning model. *Australian Journal of Educational Technology, 16*(1), 26-44.

Ellis, D. G. (1999). *Crafting society: Ethnicity, class, and communication theory.* Erlbaum: Hillsdale, NJ.

Ellison, J., & Hayes, C. (2006). *Effective school leadership: Developing principals through Cognitive Coaching.* Norwood, MA: Christopher-Gordon.

Elmore, R. F. (2002). *Bridging the gap between standards and achievement: The imperative for professional development in education.* Washington, DC: Albert Shanker Institute. Retrieved August 16, 2005, from http://www.ashankerinst.org/Downloads/Bridging_Gap.pdf

Emery, F., & Trist, E. (1965). The causal texture of organizations. *Human Relations, 18*, 21-32.

Entwistle, N. (1995). The use of research on student learning in quality assessment. In G. Gibbs (Ed.), *Improving student learning through assessment and evaluation.* Oxford: Oxford Centre for Staff Development.

Etzioni, A., & Etzioni, O. (1999). Face-to-face and computer-mediated communities: A comparative analysis. *The Information Society, 15*(4), 241-248.

Fairclough, N. (2003). *Analyzing discourse: Textual analysis for social research.* London: Routledge.

Farrell, G. M. (Ed.). (2001). *The changing faces of virtual education.* Retrieved November 3, 2001, from http://www.col.org/virtualed/virtual2pdfs/v2_prelims.pdf

Feenberg, A. (1989). Computer conferencing and the humanities. *Instructional Science, 16*, 169-186.

Feldman, S. (2001). The link, and how we think: Using the hypertext as a teaching and learning tool. *International Journal of Instructional Media, 28*(2), 153-158.

Fetherston, T. (2001). Pedagogical challenges for the World Wide Web. *AACE Journal, 9*(1), 25-32. Retrieved December 29, 2006, from http://www.editlib.org/index.cfm?fuseaction=Reader.ChooseCitationFormat&paper_id=10270&save_format=true

Findley, B., & Findley, B. (1997). Strategies for effective distance education. *Contemporary Educational Psychology, 68*(2), 118-120.

Flavell, J., Miller, P., & Miller, S. (2002). *Cognitive development* (4th ed.). Upper Saddle River, NJ: Prentice-Hall.

Freedman, A., & Morrison, I. (2006). *TechEncyclopedia.* Retrieved March 18, 2006, from http://www.techweb.com/encyclopedia/

Friend, M., & Cook, L. (2000). Interactions: Collaboration skills for school professionals. New York: Longman.

Fritz, A. (1996). Reflective practice: Enhancing the outcomes of technology learning experiences. *The Journal of Design and Technology Education, 121*(3), 212-217.

Fulford, C. P., & Zhang, S. (1993). Perceptions of interaction: The critical predictor in distance education. *The American Journal of Distance Education, 7(*3), 8-21.

Fulford, C. P., & Zhang, S. (1995). Interactivity in distance education television: A constructed reality. In C. C. Gibson (Ed.), *Distance education symposium 3: Learners and learning.* University Park, PA: American Center for the Study of Distance Education.

Fullan, M. (1999). *Change forces: The sequel.* Philadelphia: Falmer Press.

Gall, M., Borg. W., & Gall, J. (1996). *Educational research: An introduction.* White Plains, NY: Longman.

Gardner, S. (1998). *Beyond collaboration to results: Hard choices in the future of services to children and families.* Phoenix, AR: Arizona Prevention Resource Center.

Garmston, R. J. (2004, Winter). Group wise: The key is knowing when--or whether--to intervene. *Journal of Staff Development, 25*(1). Retrieved January 5, 2007, from http://www.nsdc.org/library/publications/jsd/garmston251.cfm

Garmston, R. J. (2005). *The presenter's fieldbook: A practical guide* (2nd ed). Norwood, MA: Christopher-Gordon.

Garmston, R. J. (2005, Spring). Group wise: Create a culture of inquiry and develop productive groups. *Journal of Staff Development, 26*(2). Retrieved March 18, 2006, from http://www.nsdc.org/library/publications/jsd/garmston262.cfm

Garmston, R., & Wellman, B. (1999). *Adaptive schools: Developing and facilitating collaborative groups.* Norwood, MA: Christopher-Gordon.

Garrison, D. R. (1992). Critical thinking and self-directed learning in adult education: An analysis of responsibility and control issues. *Adult Education Quarterly, 42*(3), 136-148.

Garrison, D. R. (1993a). A cognitive constructivist view of distance education: An analysis of teaching-learning assumptions. *Distance Education, 14*(2), 199-211.

Garrison, D. R. (1993b). Quality and access in distance education: Theoretical issues. In D. Keegan (Ed.), *Theoretical principles of distance education.* London: Routledge.

Garrison, D. R. (1995). Constructivism and the role of self-instructional course materials: A reply. *Distance Education, 16*(1), 136-140.

Garvin, D. A. (1994). Building a learning organization. *Business Credit, 96*(January), 19-28.

Gilbert, S. W. (1996). Making the most of a slow revolution. *Change, 28*(2), 10-23.

Glennan, T. K., & Melmed, A. (1996). *Fostering the use of educational technology: Elements of a national strategy* (MR-682-OSTP/ED). Santa Monica, CA: RAND. Retrieved May 8, 2005, from http://www.rand.org/publications/MR/MR682/

Goddard, R. D., Hoy, W. K., & Woolfork, A. (2000). Collective teacher efficacy: Its meaning, measure, and impact on student achievement. *American Educational Research Journal, 37*(2), 479-507.

Goddard, R. D., Hoy, W. K., & Woolfolk-Hoy, A. (2004). Collective efficacy: Theoretical developments, empirical evidence, and future directions. *Educational Researcher, 33*(3), 3-13.

Gorham, J. (1988). The relationship between verbal teacher immediacy behaviors and student learning. *Communication Education, 37*, 40-53.

Gorsky, P., & Caspi, A. (2005). A critical analysis of transactional distance theory. *Quarterly Review of Distance Education, 6*(1), 1-11.

Grant, B., & Hennings, D. (1971). The teacher moves: An analysis of nonverbal activity. New York: Teachers College Press.

Grantz, M., Mackey, A., Otterman, Y., & Wise, M. (1999). *Taking control of our lives: The far-reaching effects of locus of control.* Retrieved August 20, 2006, from http://www.units.muohio.edu/psybersite/control/education.shtml

Graves, M. F. (2000). A vocabulary program to complement and bolster a middle-grade comprehension program. In B. M. Taylor, M. F. Graves, & P. Van Den Broek (Eds.), *Reading for meaning* (pp.116-135). Newark, DE: International Reading Association and New York Teachers College Press, Columbia University.

Graves, N. (Ed.). (1993*). Learner managed learning: Practice, theory and policy.* Leeds: WEF and HEC.

Gravett, S., & Petersen, N. (2002). Structuring dialogue with students via learning tasks. *Innovative Higher Education, 26*(4), 281-291.

Gray, T. L. (1998). *Online environments for teacher professional development: A pilot study.* Unpublished doctoral dissertation, Pepperdine University.

Gunawardena, C. N. (1995). Social presence theory and implications for interaction and collaborative learning in computer conferences. *International Journal of Educational Telecommunications, 1*(2/3), 147-166.

Gunawardena, C. N., Jennings, B., Ortegano-Layne, L., Frechett, C., Carabajal, K., Lindemann, K., et al. (2004). Building an online wisdom community: A transformational design model. *Journal of Computing in Higher Education, 15*(2), 40-62.

Gunawardena, C. N., & Zittle, F. (1997). Social presence as a predictor of satisfaction within a computer-mediated conferencing environment. *The American Journal of Distance Education, 11*(3), 8-16.

Gustafson, J., Hodgson, V., & Tickner, S. (2004). Identity construction and dialogue genres: How notions of dialogue may influence social presence in networked learning environments. Paper presented at the *Networked Learning Conference,* Lancaster, UK. Retrieved January 5, 2007, from http://www.networkedlearningconference.org.uk/past/nlc2004/proceedings/symposia/symposium13/gustafson_et_al.htm

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

Hackman, M. Z., & Walker, K. B. (1990). Instructional communication in the televised classroom: The effects of system design and teacher immediacy on student learning and satisfaction. *Communication Education, 39*(3), 196-206.

Hall, E. T. (1998). The power of hidden differences. In M. J. Bennett (Ed.), *Basic concepts of intercultural communication: Selected readings* (pp. 53–67). Yarmouth, ME: Intercultural Press, Inc.

Hall, G. E., & Hord, S. M. (1987). *Change in schools: Facilitating the process.* Albany, NY: State University of New York Press.

Hallet, K., & Cummings, J. (1997). The virtual classroom as authentic experience: Collaborative, problem-based learning in a WWW environment. *Competition-Connection-Collaboration: Proceedings of the Annual Conference on Distance Teaching and Learning,* Madison, WI: University of Wisconsin-Madison. 103-107.

Halpin, D., Scheer, S., & Lockee, B. (2003). Supporting distance learners: The IT studio model. *International Journal of Instructional Media, 30*, 343-345.

Hannafin, M. J., Hill, J. R., & Land, S. M. (1997). Student-centered learning and interactive multimedia: Status, issues, and implications. *Contemporary Education*, *68*(2), 94-99.

Hansen, E. J. (1998). Creating teachable moments…and making them last. *Innovative Higher Education, 23*(1), 7-26.

Harasim, L., Hiltz, S. R., Teles, L., & Turoff, M. (1995). *Learning networks.* Cambridge, MA: The MIT Press.

Hargreaves, A. (1994). *Changing teachers, changing times: Teacher's work and culture in the postmodern age.* New York: Teachers College Press.

Hargreaves, A., & Fullan, M. (1998). *What's worth fighting for out there?* New York: Teachers College Press.

Harris, S., Kington, A., & Lee, B. (2001). ICT and innovative pedagogy: Examples from case studies in two schools collected as part of the Second Information Technology in Education Study [SITES] in England. Paper presented at the British Educational Research Association Annual Conference, Leeds University. Retrieved October 27, 2005, from http://www.leeds.ac.uk/educol/documents/00001906.htm

Hase, S. (2003). *Heutagogy and developing capable people and capable workplaces: Strategies for dealing with complexity.* Retrieved March 23, 2005, from http://www.wln.ualberta.ca/papers/pdf/17.pdf

Hase, S., & Kenyon, C. (2000, December). From andragogy to heutagogy. *ultiBASE e-Journal, December.* Retrieved October 1, 2006, from http://ultibase.rmit.edu.au/Articles/dec00/hase1.pdf

Hassel, E. (1999). *Professional development: Learning from the best.* Oak Brook, IL: North Central Regional Educational Laboratory.

Hawkes, M. (2000). Structuring computer-mediated communication for collaborative teacher development. *Journal of Research and Development in Education, 33*(4), 268-277.

Hawkes, M., & Romiszowski, A. (2001). Examining the reflective outcomes of asynchronous computer-mediated communication on inservice teacher development. *Journal of Technology and Teacher Education, 9*(2), 285-308.

Haycock, K., Jerald, C., & Huang, S. (2001). Closing the gap: Done in a decade. *Thinking K-16, 51*(2), 3-22.

Haythornthwaite, C. (2002). Building social networks via computer networks: Creating and sustaining distributed learning communities. In K. Renninger & W. Shumar (Eds.), *In building virtual communities: Learning and change in cyberspace* (pp. 159-190). Cambridge, MA: Cambridge University Press.

Hazari, S., & Schnorr, D. (1999). Leveraging student feedback to improve teaching in web-based courses. *T.H.E. Journal, 26*(11), 31-38.

Heath, E. F. (1998). Two pints of cheer and a pint of worry: An on-line course in political and social philosophy. *Journal of Asynchronous Learning Networks, 2.* Retrieved January 6, 2004, from http://www.aln.org/alnweb/journal/vol2_issue1/wegerif.htm

Hiebert, J., Gallimore, R., & Stigler, J. (2002). A knowledge base for the teaching profession: What would it look like and how can we get one? *Educational Researcher, 31*(5), 3–15.

Hiemstra, R. (1994). In T. Husen & T. Postlethwait (Eds.), *The international encyclopedia of education.* Oxford, NY: Pergamon Press.

Hillman, D. C. A. (1999). A new method for analyzing patterns of interaction. *The American Journal of Distance Education, 13*(2), 37-47.

Hiltz, S. R. (1997). Impacts of college level courses via asynchronous learning networks: Some preliminary results. *Journal of Asynchronous Learning Networks, 15*(2). Retrieved May 26, 2006, from http://www.aln.org/alnweb.journal/issue2/hiltz.html

Hiltz, S. R. (1998). *Collaborative learning in asynchronous learning networks: Building learning communities.* Retrieved November 3, 2001, from http://eies.njit.edu/hiltzcollaborative_learning_in_asynch.htm

Hobaugh, C. F. (1997). Interactive strategies for collaborative learning. *Competition-Connection-Collaboration: Proceeding of the Annual Conference on Distance Teaching and Learning,* Madison, WI: University of Wisconsin-Madison. 121-125.

Hodge, E., Bossé, M. J., Faulconer, J., & Fewell, M. (2006, December). Mimicking proximity: The role of distance education in forming communities of learning. *International Journal of Instructional Technology and Distance Learning, 3*(12). Retrieved January 15, 2006, from http://www.itdl.org/Journal/Dec_06/index.htm

Hoefling, T. (2003). *Working virtually: Managing people for successful virtual teams and organizations.* Sterling, VA: Stylus Publishing, LLC.

Hord, S. M. (1997). *Professional learning communities: Communities of continuous inquiry and improvement.* Austin, TX: Southwest Educational Development Laboratory.

Howe, D. (2006). FOLDOC: *Free on-line dictionary of computing.* Retrieved December 29, 2006, from http://foldoc.org/index.cgi?query=pdf&action=Search

Hughes, C., & Hewson, L. (1998). Online interactions: Developing a neglected aspect of the virtual classroom. *Educational Technology, 38*(4), 48-55.

Hughes, I. (2001). Teaching action research on the web. *Educational Technology & Society, 4*(3). Retrieved September 1, 2006, from http://ifets.massey.ac.nz/periodical/vol_3_2001/hughes.html

In Time. (2002). *Students at the center of their own learning.* Retrieved November 9, 2002, from http://www.intime.uni/edu/model/center_of_learning_files/definition/html

Instructional Technology Council. (n.d.). *"ITC's Definition of…"* Retrieved January 15, 2006 from http://144.162.197.250/definition.htm

Irani, T. (2001). Targeting distance education to undergraduate students: Influences on tradition-aged students' intent to enroll in a distance education course. *USDLA Journal, 15*(11).

279

Retrieved May 21, 2006, from

http://www.usdla.org/html/journal/NOV01_Issue/article04.html

Jaffee, D. (1997). Asynchronous learning: Technology and pedagogical strategy in a distance learning course. *Teaching Sociology, 25*(4), 262-277.

Jarvenpaa, S. L., & Leidner, D. E. (1998). Communication and trust in global virtual teams. *Journal of Computer-Mediated Communication, 3*(4).

Johnson, S. M., & Kardos, S. M. (2002, March). Keeping new teachers in mind. *Educational Leadership, 59*(6), 12-16.

Johnson-Bailey, J., & Alfred, M. V. (2006). Transformational teaching and the practices of Black women adult educators. *New Directions for Adult and Continuing Education, 109*, 49-58.

Joiner, L. L. (2002). *The connected teacher: Anywhere, anytime learning meets professional development.* Retrieved June 25, 2002, from http://www.electronic-school.com/2002/01/0102fl.html

Jonassen, D. H. (1985). Interactive lesson designs: A taxonomy. *Educational Leadership, 25*(6), 7-17.

Jonassen, D. H. (1991). Evaluating constructivist learning. *Educational Technology, 31*, 28-33.

Jonassen, D., Davison, M., Collins, M., Campbell, J., & Haag, B. B. (1995). Constructivism and computer-mediated communication in distance education. *American Journal of Distance Education, 9(*2), 7-26.

Jones, B., Valdez, G., Nowakowski, J., & Rasmussen, C. (1995). *Plugging in: Choosing and using educational technology.* Washington, DC: Council for Educational Development and Research.

Joyce, B., & Showers, B. (2002). *Student achievement through staff development* (3rd ed.). New York: Longman.

Jung, I. (2001). Building a theoretical framework of web-based instruction in the context of distance education. *British Journal of Educational Technology, 32*(5), 525-534.

Kagan, L. (2007). *Dynamic trainer.* San Clemente, CA: Kagan Publishing.

Kaplan-Leiserson, E., Davydov, T., Emery, D., Lahanas, S., & Potemski, B. (2005). *E-learning circuits.* American Society for Training & Development. Retrieved October 22, 2005, from http://www.learningcircuits.org/

Kasworm, C. E., & Bing, Y. (1992). *The development of adult learner autonomy and self-directedness in distance education.* Retrieved December 31, 2006, from http://www.eric.ed.gov/ERICDocs/data/ericdocs2/content_storage_01/0000000b/80/25/7b/ae.pdf

Katz, R., & Associates. (1999). *Dancing with the devil: Information technology and the new competition in higher education.* San Francisco: Jossey-Bass.

Katz, Y. J. (2002). Attitudes affecting college students preferences for distance learning. *Journal of Computer Assisted Learning, 18*(11), 2-9.

Kaupins, G. (2002). Trainer opinions of selected computer-based training methods. *Journal of Education for Business, 77*(6), 319-323.

Kaye, A. R. (Ed.). (1991). *Collaborative learning through computer conferencing.* Berlin: Springer.

Kaye, A. R. (1992). Learning together apart. In A. R. Kaye (Ed.), *Collaborative learning through computer conferencing: The Najaden Papers: NATO Science Committee, NATO Special Program on Advanced Educational Technology* (pp. 1-24). Berlin: Springer-Verlag.

Kazemi, E., & Franke, M. L. (2003). *Using student work to support professional development in elementary mathematics (Document W-03-1).* Seattle, WA: University of Washington, Center for the Study of Teaching and Policy.

Kearsley, G. (1995). *The nature and value of interaction in distance education.* Retrieved October 22, 2005, from http://www.gwu.edu/-etl/interact.html

Kearsley, G. (2001). *Explorations in learning & instruction: The theory into practice database.* Retrieved July 20, 2002, from http://tip.psychology.org/index.html

Kearsley, G., & Schneiderman, B. (1999). *Engagement theory: A framework for technology-based teaching and learning.* Retrieved December 21, 2004, from http://home.sprynet.com/~gkearsley/engage.htm

Kent, T. (2003). Supporting staff using WebCT at the University of Birmingham. *Electronic Journal of e-Learning, 1*(1), 1-9. Retrieved August 25, 2006, from http://www.ejel.org/volume-1-issue-1/issue1-art1.htm

Kent, T., & McNergney, R. (1999). *Will technology really change education? From blackboard to web.* Thousand Oaks, CA: Corwin Press.

Kerka, S. (1996). Distance learning, the Internet, and the World Wide Web. Columbus, OH: ERIC Clearinghouse on Adult, Career, and Vocational Education. (ERIC Document Reproduction Service No. EDO CE 96 168)

Killion, J. (1999). *What works in the middle: Results-based staff development.* Oxford, OH: National Staff Development Council.

Killion, J. (2000). Online staff development: Promise or peril? *NASSP Bulletin, 84*(618), 38-46.

King, F. (2002). A virtual student: Not an ordinary Joe. *Internet and Higher Education, 55*, 157-166.

King, K. P. (2002b). Identifying success in online teacher education and professional development. *The Internet and Higher Education, 5*(3), 231-246.

Kizlik, R. (1996). Connective transactions - technology and thinking skills for the 21st century. *International Journal of Instructional Media 23*, 115–122.

Klecka, C. L., Clift, R. T., & Thomas, A. S. (2002). Proceed with caution: Introducing electronic conferencing in teacher education. *Critical Issues in Teacher Education, 9*, 28-36.

Kleiman, G. (2004). *Meeting the need for high quality teachers: E-learning solutions.* NCLB 2004 Summit presentation, Newton, MA: Education Development Center, Inc. (EDC). Retrieved May 13, 2005, from http://www.nclbtechsummits.org/summit2/s2-presentations.asp

Klemm, W., & Snell, J. (1996). Enriching computer-mediated group learning by coupling constructivism with collaborative learning. *E JIST, I*(2). Retrieved January 1, 2003, from http://www.usq.edu.au/electpub/e-jist/abstrac2.htm

Knapp, M., & Hall, J. (1992). *Nonverbal communication in human interaction* (3rd ed.). Fort Worth, TX: Harcourt Brace.

Knowles, M. S. (1975). *Self-Directed Learning: A guide for learners and teachers.* Englewood Cliffs: Prentice Hall/Cambridge.

Knowles, M. S. (Ed.). (1980). *The modern practice of adult education: From pedagogy to andragogy.* Chicago: Follett.

Koiso, H., Shimojima, A., & Katagiri, Y. (1998). Collaborative signaling of informational structures by dynamic speech rate. *Language and Speech, 41*(3-4), 323-350.

Kokmen, L. (1998, August 31). Getting educated on the 'net. *The Denver Post*, pp. 1E-5E.

Krathwohl, D. R. (1993). *Methods of educational and social science research: An integrated approach.* White Plains, NY: Longman.

Kreijns, K., & Kirschner, P. A. (2001). The social affordances of computer-supported collaborative learning environments. *31st ASEE/IEEE Frontiers in Education Conference*, Reno, NV.

Lambert, L. (1995). Toward a theory of constructivist leadership. In L. Lambert, et al. (Eds.), *The constructivist leader* (pp. 28-51). New York: Teachers College Press.

LaPoine, D. K., & Gunawardena, C. N. (2004). Developing, testing and refining of a model to understand the relationship between peer interaction and learning outcomes in computer-mediated conferencing. *Distance Education, 25*(1), 83-106.

Latchem, C. (2004). Staff Development for Open and Flexible Learning. *Learning & Teaching in Action, 3*(1), 20-34. Retrieved August 25, 2006, from http://www.ltu.mmu.ac.uk/ltia/issue7/latchem.pdf

Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation.* Cambridge, UK: Cambridge University Press.

Lawler, P. A., & King, K. P. (2000). Planning for effective faculty development: Using adult learning strategies. Malabar, FL: Krieger.

Learning First Alliance. (2000). *Every child reading: A professional development guide.* Alexandria, VA: Association for Supervision and Curriculum Development.

LearnNC. (2005). *Education reference.* Retrieved October 30, 2005, from http://www.learnnc.org/glossary/

Lee, V., Smith, J., & Croninger, R. (1995). Another look at high school restructuring. *Issues in Restructuring Schools, (Fall)*, 1-10.

Lehmann, K. J. (2004). *How to be a great online teacher*. Lanham, Maryland: Rowman & Littlefield.

Lesh, R., Lovitts, B., & Kelly, A. (2000). Purposes and assumptions of this book. In A. Kelly & R. Lesh (Eds.), *Handbook of research design in mathematics and science education* (pp. 17–33). Mahwah, NJ: Lawrence Erlbaum.

Levenburg, N., & Major, H. (2000). Kindling the fire: How to attract faculty to distance learning. *The Technology Source Archives, (September/October)*. Retrieved May 21, 2006, from http://ts.mivu.org/default.asp?show=article&id=803

Levin, J. A., & Thurston, C. (1996). Research summary: Educational electronic networks. *Educational Leadership, 54*(3), 46-50.

Lewis, D. C., Treves, J. A., & Shaindlin, A. B. (1997). Making sense of academic cyberspace: Case study of an electronic classroom. *College Teaching, 45*(3), 96-100.

Lexico Publishing Group, LLC. (2005). *Dictionary.com.* Retrieved October 30, 2005, from http://dictionary.reference.com/

Lichtenstein, G., McLaughlin, M., & Knudsen, J. (1991). *Teacher empowerment and professional knowledge.* (Report CPRE Research Report Series RR-020). Washington, DC: U.S. Dept. of Education, Office of Educational Research and Improvement, Educational Resources Information Center.

Lieberman, A. (1995). Practices that support teacher development: Transforming conceptions of professional learning. *Phi Delta Kappan, 76*(8), 591-596.

Lieberman, A., & McLaughlin, M. (1992). Networks for educational change: Powerful and problematic. *Phi Delta Kappan, 73*, 673-677.

Lieberman, A., & Miller, L. (1992). Teacher development in professional practice schools. In A. Lieberman (Ed.), *Professional development and restructuring* (pp. 2-18). New York: Teachers College Press.

Lipponen, L. (2002). Exploring foundations for computer-supported collaborative learning. In G. Stahl (Ed.), *Proceedings of the International Conference on Computer-Supported Collaborative Learning* (pp. 72-81).

Ljoså, E. (1998). The role of university teachers in a digital era. *European Journal of Open, Distance and E-Learning*, Retrieved October 10, 2006, from http://www.eurodl.org/materials/contrib/1998/eden98/Ljosa.html

Lohr, L. (2000). Designing the instructional interface. *Computers in Human Behavior, 16*(2), 161-182.

Loucks-Horsley, S., Hewson, P., Love, N., & Stiles, K. (1998). *Designing professional development for teachers of science and mathematics.* Thousand Oaks, CA: Corwin Press.

Lutz, S., & Huitt, W. (2004). Connecting cognitive development and constructivism: Implications from theory for instruction and assessment. *Constructivism in the Human Sciences, 9*(1), 67-90.

Mann, S. J. (2005). Alienation in the learning environment: A failure of community? *Studies in Higher Education, 30*(1), 43-55.

Markee, N. (1994). Using electronic mail to manage the implementation of educational innovations. *System, 22*(3), 379-389.

Marzano, R. (2003). *What works in schools: Translating research into action.* Alexandria, VA: Association of Staff Development Council.

Mason, R. (1991). Analyzing computer conferencing interactions. *Computers in Adult Education and Training, 2*(3), 161-173.

McCombs, B., & Whisler, J. (1997). *The learner-centered classroom and school.* San Francisco: Jossey-Bass.

McConnell, D. (2002). Negotiation, identity and knowledge in e-learning communities. *Proceedings of Networked Learning 2002,* University of Sheffield.

McCroskey, J. C., & Andersen, J. F. (1976). The relationship between communication apprehension and academic achievement among college students. *Human Communication Research, 39*, 73-81.

McIsaac, M. S. (1996). Distance education. In D. H. Jonassen (Ed.), *Handbook of research for educational communication and technology: A project of the association for educational communications and technology.* New York: Simon & Shuster Macmillan.

McKendree, J., Stenning, K., Mayes, T., Lee J., & Cox, R. (1997). Why observing a dialogue may benefit learning: The vicarious learner. In P. Brna & D. Dicheva (Eds.), *Proceedings on the 8th International PEG conference*, (156-163). Sofia: Virtech.

McKenzie, J. (1991). *Designing staff development for the information age.* Retrieved May 25, 2002, from http://staffdevelop.org/secrets.html

McLaughlin, M. W. (1994). Strategic sites for teachers' professional development. In P. Grimmett and J. Neufeld, (Eds.), *Teacher development and the struggle for authenticity: Professional growth and restructuring in the context of change* (pp. 31-51). New York: Teachers College Press.

McPherson, M., & Baptista-Nunes, M. (2004). The failure of a virtual social space (VSS) designed to create a learning community: Lessons learned. *British Journal of Educational Technology, 35*(3), 305-321.

McStravick, P. (2006). *A look at learning delivery: Understanding the blend.* Retrieved January 4, 2005, from

http://clomedia.com/content/templates/clo_article.asp?articleid=1425&zoneid=13

Melburg, V., Lettus, M., & Bonesteel, J. (1993). *Modification of the LASSI of adult learners in distance education programs: A preliminary report* (Paper No. ED 3774 139). ERIC Document Reproduction Service.

Meyer, K. (2003). The web's impact on student learning. *THE Journal 30*(10).

Milheim, W. D. (1995). Interactivity and computer-based instruction. *Journal of Educational Technology Systems, 24*(3), 225-233.

Milligan, C. (1999). *Virtual learning environments in the online delivery of staff development: Delivering staff and professional development using virtual learning.* Retrieved January 4, 2003, from http://www.jtap.ac.uk/reports/htm/jtap-044.html

Moody, J. (2000). Electronic conferencing and initial teacher education: Potential and reality. *Irish Educational Studies, 19*(Spring), 151-162.

Moore, M., & Clark, G. C. (1989). *Readings in principles of distance education*. University Park, PA: The American Center for the Study of Distance Education.

Moore, M., & Kearsley, G. (1996). *Distance education: A systems view.* Belmont, CA: Wadsworth Publishing Company.

Moore, M., & Shattuck, K. (2001). *World campus faculty resources: Glossary of distance education terms.* The Pennsylvania State University. Retrieved October 29, 2005, from https://courses.worldcampus.psu.edu/public/faculty/DEGlossary.shtml

Moore, M., & Thompson, M. (1997). *The effects of distance learning* (Rev. ed.). University Park, PA: American Center for the Study of Distance Education.

Muilenburg, L. Y., & Berge, Z. L. (2005). Student barriers to online learning: A factor analytic study. *Distance Education, 26*(1), 29-48.

Muirhead, B. (2004). Encouraging interaction in online classes. *International Journal of Instructional Technology & Distance Learning, June.* Retrieved January 1, 2007, from http://www.itdl.org/Journal/Jun_04/article07.htm

Mynatt, E., O'Day, V., Adler, A., & Ito, M. (1998). Network communities: Something old, something new, something borrowed… *Computer Supported Collaborative Work: The Journal of Collaborative Computing, 7*(1-2), 123-156.

National Association for the Education of Young Children [NAEYC]. (2005). *Program administrator definitions and competencies.* Retrieved January 1, 2007, from http://www.naeyc.org/accreditation/performance_criteria/core_competencies.html

National Commission on Teaching and America's Future. (1996). *What matters most: Teaching for America's future.* New York: Author.

National Reading Panel. (2000). *Report of the National Reading Panel: Teaching children to read.* Bethesda, Maryland: National Institute of Child Health and Human Development.

National Staff Development Council [NSDC], & National Institute for Community Innovations [NICI]. (2001). *E-learning for educators: Implementing the standards for staff development.* Oxford, OH: Authors.

Norman, D. (1993). *Things that make us smart.* New York: Addison Wesley.

North Central Regional Educational Laboratory [NCREL]. (2004). *Glossary of education terms and acronyms.* Retrieved October 29, 2005, from http://www.ncrel.org/sdrs/areas/misc/glossary.htm#facil

Northwest Regional Educational Laboratory [NWREL. (2005). *Digital bridges: Connections for K-12 teaching & learning over distance.* Retrieved October 29, 2005, from http://www.netc.org/digitalbridges/

Norton, P., & Wiburg, K. M. (2003). *Teaching with technology: Designing opportunities to learn* (2nd ed.). Belmont, CA: Wadsworth/Thomson Learning.

Nunn, D. (1998). *Delivering general education subjects electronically: Part one & part two.* Retrieved October 1, 2006, from http://node.on.ca/tfl/integrated/fieldnotes/nuun2.html

Ofsted. (2002). *ICT in schools: Effect of government initiatives.* London: Ofsted.

Olaniran, B. A. (2005). Computer-mediated communication as an instructional learning tool. In P. Comeaux (Ed.), *Assessing online learning* (pp. 144-58). Bolton, MA: Anker Publishing.

Oliver, B. (2007). *It's all about relationships.* Just ASK Publications & Professional Development. Retrieved March 1, 2007, from http://www.askeducation.com/newsletter/newsletterFEB-07.htm

Osika, R., & Sharpe, D. (2003). Minimum technical competencies for distance learning students. *Journal of Research on Technology in Education, 34*(3), 318-325.

Palloff, R. M., & Pratt, K. (1999). *Building learning communities in cyberspace: Effective strategies for the online classroom.* San Francisco: Jossey-Bass.

Palloff, R. M., & Pratt, K. (2001). *Lessons for the cyberspace classroom: The realities of online teaching.* San Francisco: Jossey-Bass.

Parker, B., & Bowell, B. (1998). Exploiting computer-mediated communication to support in-service professional development: The SENCO experience. *Journal of Information Technology for Teacher Education, 7*(2), 255-262.

Pearson, P. D., & Gallagher, M. (1983). The instruction of reading comprehension. *Contemporary Educational Psychology, 8,* 314-344.

Peck, S. (1987). *The different drum: Community making and peace.* New York: Simon & Shuster.

Pelz, W. (2004). My three principles of effective online pedagogy. *Journal of Asynchronous Learning Networks, 8*(3), 33–46. Retrieved October 27, 2006 from http://www.sloan-c.org/publications/jaln/v8n3_pelz.asp

Piaget, J. (2001). *The psychology of intelligence* (2nd ed.). London: Routledge. [Originally published in 1950].

Pilling-Cormick, J. (1997). Transformative and self-directed learning in practice. *New Directions for Adult and Continuing Education, 74*, 69-77.

Piotrowski, C., & Vadonovich, S. J. (2000). Are the reported barriers to internet-based instruction warranted? A synthesis of recent research. *Education, 121*(1), 48-53.

Rafaeli, S. (1988). Interactivity: From new media to communication. In R. P. Hawkins, J. M. Wiermann, & S. Pingree (Eds.), *Advancing communication science: Merging mass and interpersonal process* (pp. 110-134). Newbury Park, CA: Sage.

Raitt, B. (1991). Something to talk about. On *Luck of the draw.* [CD]. Los Angeles, CA: Capitol Records.

Reed, D. (2005, Summer). *Why is professional development so important?* Washington, DC: U. S. Department of Education. Retrieved August 26, 2006, from http://www.readingfirstsupport.us/docs/RF-summer-05.pdf

Regalbuto, J. (1999). *Teaching at an Internet distance: The pedagogy of online teaching and learning.* The report of a 1998-1999 University of Illinois faculty seminar. Retrieved January 1, 2007, from http://www.vpaa.uillinois.edu/tid/report/tid_report.htm

Relan, A., & Gillani, B. (Eds.). (1997). *Web-based instruction and the traditional classroom: Similarities and differences.* Englewood Cliffs, NJ: Educational Technology Publications.

Repman, J., & Logan, S. (1996). Interactions at a distance: Possible barriers and collaborative solutions. *TechTrends, 41*(6), 35-38.

Richardson, W. (2006). *Blogs, wikis, podcasts, and other powerful web tools for classrooms.* Thousand Oaks, CA: Corwin Press.

Riel, M., & Polin, L. (2004). Online learning communities: Common ground and critical differences in designing technical environments. In S. Barab, R. Kling, & J. Gray (Eds.), *Designing for virtual communities in the service of learning* (pp. 16–50). Cambridge, UK: Cambridge University Press.

Robinson, S. P., & Darling-Hammond, L. (1994). Change for collaboration and collaboration for change: Transforming teaching through school-university partnerships. In L. Darling-Hammond (Ed.), *Professional development schools: Schools for developing a profession* (pp. 203-219). New York: Teachers College Press.

Roblyer, M. D., & Ekhami, L. (2000, Spring). How interactive are YOUR distance courses? A rubric for assessing interaction in distance learning. *Online Journal of Distance Learning Administration, 3*(2). Retrieved April 1, 2006, from http://www.westga.edu/~distance/rblyer32.html

Rodes, P., Knapczyk, D., Chapman, C., & Haejin, C. (2000). Involving teachers in web-based professional development. *The Journal, May.* Retrieved December 29, 2005, from http://www.thejournal.com/magazine/vault/A2868F.cfm

Rogers, C. (1969). *Freedom to learn: A view of what education might become.* Columbus, OH: Charles Merrill.

Rogers, J. (1989). *Adults learning* (3rd ed.). Philadelphia, PA: Open University Press.

Rogers, J. (2000). Communities of practice: A framework for fostering coherence in virtual learning communities. *Educational Technology & Society, 3*(3). Retrieved September 1, 2006, from http://ifets.massey.ac.nz/periodical/vol_3_2000/e01.html

Rogers, S., Ludington, J., & Graf, B. (2003). *Teaching and training techniques: Lighting the way to performance excellence.* Evergreen, CO: PEAK Learning Systems, Inc.

Romiszowski, A. (1997). In B. Khan (Ed.), *Web-based distance learning and reaching: Revolutionary invention or reaction to necessity?* Englewood Cliffs, NJ: Educational Technology Publications.

Romiszowski, A. J., & Jost, K. L. (1989). Computer conferencing and the distance learner. *Fifth Annual Conference on Teaching at a Distance: Helping Learners Learn at a Distance,* Madison, WI: University of Wisconsin-Madison, 131-137.

Routman, R. (2003). *Reading essentials: The specifics you need to teach reading well.* Portsmouth, NH: Heinemann.

Rovai, A. (2002a). Building a sense of community at a distance. [Electronic version]. *International Review of Research in Open and Distance Learning, 3*(1). Retrieved September 1, 2006, from http://www.irrodl.org/index.php/irrodl/article/viewFile/79/153

Rovai, A. (2002b). A preliminary look at the structural differences of higher education classroom communities in traditional and ALN courses. [Electronic version]. *Journal of Asynchronous Learning Networks, 6*(1). Retrieved September 1, 2006, from http://www.aln.org/publications/jaln/v6n1/v6n1_rovai.asp

Rowntree, D. (1995). Teaching and learning online: A correspondence education for the 21st century? *British Journal of Educational Technology, 26*(3), 205-215.

Rudenstine, N. L. (1997). The Internet and education: A close fit. *Chronicle of Higher Education, 2*(1), A48.

Saba, F. (1998). Enabling the distance learner: A strategy for success. *Distance Education Report.* Retrieved October 1, 2006, from http://distance-educator.com/Editorial_1.2.html

Salmon, G. (2000). E-moderating: The key to teaching and learning online. London: Kogan Page.

Salomon, P. C. (1992). The changing role of the teacher: From information transmitter to orchestrator of learning. In F. K. Oser, A. Dick, & J. Petry (Eds.), *Effective and responsible teaching: The new synthesis* (pp. 35-49). San Francisco: Jossey-Bass.

Salpeter, J. (2003, August). Professional development: 21st Century models. *Techlearning.* Retrieved January 4, 2005, from http://www.techlearning.com/showArticle.php?articleID=13000492

Sandholtz, J. (2001). Learning to teach with technology: A comparison of teacher development programs. *Journal of Technology and Teacher Education, 9*(3), 349-374.

Sandholtz, J., Ringstaff, C., & Dwyer, D.C. (1990). Classroom management: Teaching in high tech environments: Classroom management revisited first-fourth year findings (ACOT Report #10). Cupertino, CA: Apple Computer, Inc., Advanced Technology Group, Apple Classrooms of Tomorrow.

Saunders, N. G., Malm, L. D., Malone, B. G., Nay, F. W., Oliver, B. E., & Thompson, J. C., Jr. (1997). Student perspectives: Responses to Internet opportunities in a distance learning environment. *Mid-Western Educational Research Association*, Chicago.

Schaffer, L., & Hannafin, D. (1993). The effects of progressive interactivity on learning from interactive video. *Educational Communication and Technology Journal, 34*(20), 89-96.

Schlechty, P. (2001). *Shaking up the schoolhouse.* San Francisco: Jossey-Bass.

Schon, D. (1987). *Educating the reflective practitioner.* San Francisco: Jossey-Bass Publishers.

Schrenko, L. (1994). *Structuring a learner-centered school.* Arlington Heights, IL: IRI Skylight.

Schwahn, C., & Spady, W. (1998). Why change doesn't happen and how to make sure it does. *Educational Leadership, 55*(7), 45-47.

Seaton, W. J. (1993, June). Computer-mediated communication and student self-directed learning. *Open Learning, June,* 49-54.

Selinger, M. (1997). Open learning, electric communications and beginning teachers. *European Journal of Teacher Education, 20*(1), 71-84.

Senge, P. (1990). *The fifth discipline: The art & practice of the learning organization.* New York: Doubleday.

Shaffer, D. (2005). Epistemic games. *Innovate Journal of Online Education, 1*(6). Retrieved October 16, 2007, from http://www.innovateonline.info/index.php?view=article&id=79

Shank, P. (1998). *Distance education instructor competencies.* Minneapolis, MN: The Graduate School of America.

Shank, P. (2001). *Asynchronous online learning instructor competencies.* Retrieved June 1, 2007 from http://www.learningpeaks.com/instrcomp.html

Shearer, R. L. (2003). *Interaction in distance education. Special Report 2*(1). Madison, WI: Atwood Publishing.

Shearer, R. L., & Rose, B. (1998). CMC environments designed to facilitate multiple levels of interaction. *Distance Learning '98: Proceedings of the 14th Annual Conference on*

Distance & Learning, Madison, WI: University of Wisconsin-Madison. August 5-7, 353-358.

Shea-Schultz, H., & Fogarty, J. (2002). *Online learning today: Strategies that work.* San Francisco: Berrett-Koehler.

Sherry, L. (1996). Issues in distance learning. *International Journal of Educational Telecommunications, 1*(4), 337-365.

Shotsberger, P. G. (1997). Emerging roles for instructors and learners in the web-based instruction classroom. In B. H. Khan (Ed.), *Web-based instruction* (pp. 101-106). Englewood Cliffs, NJ: Educational Technology Publications.

Shotsberger, P. G. (2000). The human touch: Synchronous communication in web-based learning. *Educational Technology, 40*(1), 53-56.

Shotsberger, P., Baker, L., Stammen, R., Vetter, R., & Nelson, M. (1997). *Web-based professional development: Current implementation and future prospects.* Retrieved December 29, 2003, from http://www.coe.uh.edu/insite/elec_pub/HTML1997/tg_sho2.htm

Shotter, J. (1993b). *Conversational realities: Constructing life through language.* London: Sage.

Sigala, M. (2005). Developing and implementing a model for assessing collaborative e-learning processes and products. In P. Comeaux (Ed.), *Assessing online learning* (pp. 88-98). Bolton, MA: Anker Publishing.

Simonson, M. (1995). Does anyone really want to learn...at a distance? *TechTrends, 40*(5), 104-107.

Sirotnik, K. A. (1991). Making school-university partnerships work. *Metropolitan Universities, 2*, 19-23.

Slevin, J. (2000). *The Internet and society*. Oxford, UK: Blackwell Publishers Limited.

Smith, J., & Trayner, B. (2005). *Weaving together online and face-to-face learning: A design from a communities of practice perspective.* Retrieved April 1, 2006, from http://www.cpsquare.org/News/archives/F2F_ONLINE_CYCLE.pdf

Smith, T. C. (2005). Fifty-one competencies for online instruction. *Journal of Educators Online, 2*(2), 1-18.

Sparks, D. (1994). *Time for learning: A view from the national level.* Retrieved November 19, 2005, from http://www.ncrel.org/sdrs/areas/issues/envrnmnt/go/94-4sprk.htm

Sparks, D. (2001). NSDC revises staff development standards. [Electronic version]. *Results, May.* Retrieved May 26, 2006, from http://www.nsdc.org/library/publications/results/res5-01spar.cfm

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

Sparks, D., & Hirsh, S. (1997). *A new vision for staff development.* Alexandria, NY: Association for Supervision and Curriculum Development.

Spears, R., & Lea, M. (1992). *Social influence in CMC: Contexts in CMC.* London: Harvester Wheatsheaf.

Spitzer, D. R. (1998). Rediscovering the social context of distance learning. *Educational Technology, 38*(2), 52-56.

Spratt, C., Palmer, S., & Coldwell, J. (2000). Using technologies in teaching: An initiative in academic staff development. *Educational Technology & Society, 3*(3). Retrieved October 1, 2006, from http://www.ifets.ieee.org/periodical/vol_3_2000/f03.html

Stephenson, J., & Weil, S. (1992). *Quality in learning: A capability approach in higher education.* London: Kogan Page.

Stiggins, R. (2005, December). From formative assessment to assessment FOR learning: A path to success in standards-based schools, *Phi Delta Kappan*, *87*(4), 324-328.

Strauss, H. (1998). The future of the web, intelligent devices, and education. *CAUSE98*, Seattle, WA. December 9, 1998.

Strickland, J. (2003). An investigation of the effects of using a listserv discussion group after traditional workshops to sustain staff development: Training K-12 teachers to use Internet resources. *The Journal of Interactive Online Learning, 13*(3). Retrieved November 19, 2005, from http://www.ncolr.org/jiol/archives/2003/winter/2/index.asp

Surry, D. W. (2000). Strategies for Motivating Higher Education Faculty to Use Technology. *Innovations in Education and Training International, 37*(2), 145-153.

Swan, K. (2001). Virtual interaction: Design factors affecting student satisfaction and perceived learning in asynchronous online courses. *Distance Education, 22*(2), 306-331.

Swan, K., & Shea, P. (2005). The development of virtual learning communities. In. S. R. Hiltz & R. Goldman (Eds.), *Learning together online: Research on asynchronous learning networks* (pp. 239-260). Mahwah, NJ: Erlbaum.

Tagg, A. C. (1994). Leadership from within: Student moderation of computer conferences. *The American Journal of Distance Education, 8*(3), 40-50.

Tagg, A. C., & Dickinson, J. A. (1995). Tutor messaging and its effectiveness in encouraging student participation on computer conferences. *Journal of Distance Education, 10*(2), 33-55.

Tannehill, D., Berkowitz, R., & LaMaster, K. (1995). Teacher networking through electronic mail. *Journal of Technology and Teacher Education, 3*(2/3), 119-136.

Taylor, H. G., & Stuhlmann, J. M. (1998). The Clovis project: Enhancing student learning and teacher training with telecommunications. *International Journal of Instructional Media, 75*(4), 357-366.

The American Institutes for Research. (2003). *The implementation and effects of instructional reform in San Diego City Schools.* Washington, DC: Author.

The Holmes Group. (1995). *Tomorrow's schools of education.* The Holmes Group, Inc.

Thomas, W. (2004, October). *Online professional development: Why SREB states should use it.* Retrieved January 2, 2006 from http://www.sreb.org/programs/EdTech/pubs/PDF/04T05-OnlineProfDev.pdf

Thompson, M. (1998). Distance learners in higher education: Institutional responses for quality outcomes. In C. Gibson (Ed.), *Distance learners in higher education* (pp. 9-24). Madison, WI: Atwood Publishing.

Tinker, B. (n.d.). *Netcourses for staff development.* Retrieved January 4, 2003 from http://www.mff.org/edtech/article.taf?_function=detail&Content_uid1=107

Tinker, R., & Haavind, S. (1996). Netcourses and netseminars: Current practice and new designs. *The Journal of Science Education and Technology, 5*(3). Retrieved November 3, 2001, from http://www.concord.org/pubs/pdf/netcours.pdf

Tschannen-Moran, M. (2004). *Trust matters. Leadership for successful schools.* San Francisco: Jossey-Bass.

Tsui, A. B. M., Wu, K., & Songupta, S. (1996). Enhancing teacher development through TeleNex: A computer network for English language teachers. *System. 24*(2), 461-476.

Tucker, S., & Hodge, E. (2005). Accreditation standards for distance education: A view of multiple assessment/instructional strategies. *WSEAS Transactions on Advances in Engineering Education, 4*(2), 368-374.

University of Western Australia, Perth, Centre for the Advancement of Teaching and Learning. (2002). *Towards a definition of online learning at UWA*. Retrieved January 4, 2003, from http://www.catl.uwa.edu.au/online/definition.html

Usdan, M., McCloud, B., & Podmostko, M. (2001). *Leadership for student learning: Redefining the teacher as leader*. Washington, DC: Institute for Educational Leadership.

Van de Water, G. B. (1989). *The governance of school-college collaborations: Lessons learned from the eq models program*. New York: The College Entrance Examination Board.

Vygotsky, L. S. (1978). Mind in Society: The Development of Higher Psychological Processes. Cambridge, MA: Harvard University Press.

Wagner, E. (1994). In support of a functional definition of interaction. The American Journal of Distance Education, 8(20), 6-29.

Wagner, E. D. (1997). Interactivity: From agents to outcomes. *New Directions for Teaching and Learning, 71*, 19-26.

Wallace, R. (2003). Online learning in higher education: A review of research on interactions among teachers and students. *Education, Communication & Information 3*(2), 241–280.

Wang, A., & Newlin, M. (2002). Predictors of performance in the virtual classroom: Identifying and helping at-risk cyber-students. *THE Journal*. Retrieved August 26, 2006, from http://thejournal.com/the/printarticle/?id=15973

Warner, D., & Christie, G. (1999). Distance learning: The dispositions of students and the perceptions of colleges and employers to self-directed learning and new learning technologies. *World Conference on Educational Multimedia, Hypermedia and Telecommunications (Ed-Media99)*, Seattle, WA.

Watabe, K., Hamalainen, M., & Whinston, A. B. (1995). An Internet-based collaborative distance learning system: CODILESS. *Computers in Education, 24*(3), 141-155.

Wegerif, R. (1998). The social dimension of asynchronous learning networks. *Journal of Asynchronous Learning Networks, 2*(1), 34-49.

Wenger, E., McDermott, R., & Snyder, W. M. (2002). *Cultivating communities of practice*. Boston: Harvard Business School Press.

Wepner, S. B., & Seminoff, N. E. (1997). Electronic connections through teacher education triads. *Journal of Computing in Teacher Education, 13*(4), 11-19.

WestEd. (2000). *Teachers who learn, kids who achieve: A look at schools with model professional development.* San Francisco: Author.

Wheatley, M. (2001, April-June). The real work of knowledge management. *IHRIM Journal, 5*(2), 29-33.

White, K. (1999). Online education: Managing a rich and robust environment. *Assessment and Accountability Forum, 9*(3), 11-14.

Willis, B., & Dickinson, J. (1997). Distance education and the World Wide Web. In B. H. Khan (Ed.), *Web-based instruction.* Englewood Cliffs, NJ: Educational Technology Publications.

Wiske, S. (n.d.). *A new culture of teaching for the 21st century.* Retrieved March 18, 2006, from http://www.edletter.org/dc/wiske.htm

Woleck, K. (2004). *Reflections from an online facilitator.* Unpublished manuscript. Providence, RI: The Education Alliance at Brown University.

Wolfe, P. (2001). *Brain matters: Translating research into classroom practice.* Alexandria, VA: ASCD.

Wyckoff, S. (2001) Changing the Culture of Undergraduate Science Teaching. *Journal of College Science Teaching*, *30*(5), 306-312.

Yocam, K. (1996). Teacher-centered staff development for integrating technology into classrooms. *T.H.E. Journal, 24*(4), 88-91.

Young, G., & Marks-Maran, D. (1998). Using constructivism to develop a quality framework for learner support: A case study. *Open Learning, 13*, 30-37.

Zemelman, S., Daniels, H., & Hyde, A. (1998). *Best practice: New standards for teaching and learning in America's schools* (2nd ed.). Portsmouth, NH: Heinemann.

Zhang, S., & Fulford, C. P. (1994). Are interaction time and psychological interactivity the same thing in the distance learning television classroom? *Educational Technology, 34*(4), 58-64.

Zirkin, B. G., & Sumler, D. E. (1995). Interactive or non-interactive? That is the question!! An annotated bibliography. *Journal of Distance Education, X*(1), 95-112.

Appendix A - Questions for Pool of Experts

1. Do you feel online professional development is a viable tool for providing teacher training? Yes/No? Why/Why not?

2. What knowledge, attitudes, practices, and skills characterize an exemplary online professional development facilitator?

3. What instructional strategies are effective in planning, implementing, and facilitating online professional development?

4. How do successful online professional development facilitators scaffold instruction so participants have been successful?

5. What information would best prepare a novice online professional development facilitator?

6. Is there a need for an online professional development facilitator's handbook? Yes/No? Why?/Why not?

7. Please review the outline for the proposed handbook. What topics, ideas, chapter titles, or concepts need to be included in the proposed handbook?

Appendix B - Handbook Outline

Table of Contents

Introduction—How to Use This Handbook

Defining Professional Development

Effective Professional Development

Online Professional Development

Maintaining High Standards

Challenges Encountered in Online Professional Development

Characteristics of Effective Professional Development

Effective Facilitation

The Skilled Facilitator

Building Trust

Learning Cultures

Principles of Constructivism

The Teacher as Learner

The Adult Learner

The Gradual Release of Responsibility Model

Valuing the Learner

Key Principles of Heutagogy

Adult Education Practices

Working With Difficult Adults

Learning Together in the Online Environment

Building Relationships

Interactivity

Embedding Rigor and Relevance

Stimulating Intelligent Thinking

Academic Rigor and Relevance

Motivating Learners

The Facilitator of Learning

The Human Side of Online Learning

Appendix C - Letter of Instruction for Preliminary Field Test

Date

First Name, Last Name

Organization

Address

City, State, Zip

Title, First Name, Last Name

Organization

Address

City, State, Zip

Dear First Name,

Thank you for agreeing to participate as a reviewer for the development of *Communities of learning and cultures of thinking: The facilitator's role in the online professional development environment*. You were selected because of your credentials as a leader in the field of online professional development. This process is part of the requirements needed to complete a Doctor of Education degree at Kansas State University. This review process is an essential part of the research and development methodology model I am using, and I greatly appreciate your feedback as I validate and refine my product. I am looking for conceptual as well as structural feedback for the handbook.

Should you have any questions or concerns with any part of the process, please contact me or my major professor, Dr. Gerald D. Bailey. Our contact information is enclosed for your convenience.

As you begin the review process, I would suggest you follow these steps:

1. Read the enclosed questionnaire to become familiar with the areas and questions for which you will be providing feedback (Preliminary Field Test Questionnaire).

2. Read *Communities of learning and cultures of thinking: The facilitator's role in the online professional development environment*.

3. Complete the enclosed questionnaire (Preliminary Field Test Questionnaire).

4. Return *Communities of learning and cultures of thinking: The facilitator's role in the online professional development environment* and the questionnaire (Preliminary Field Test Questionnaire) in the enclosed self-addressed, stamped envelope or email the questionnaire to me at carolsimoneau@nckcn.com.

In order for me to complete this project on time, I must receive your feedback by June 5, 2007. I greatly appreciate your help with my project.

Respectfully yours,

Carol L. Simoneau   Dr. Gerald Bailey

P.O. Box 468   Professor of Education and Leadership

Concordia, KS 66901   303 Bluemont Hall

(785) 243-0889   Manhattan, KS 66506

carolsimoneau@nckcn.com   (785) 532-5847

                                            jbailey@ksu.edu

Enclosures:

*   **Preliminary field test questionnaire**-- *Communities of learning and cultures of thinking: The facilitator's role in the online professional development environment*.
*   **Handbook**
*   **Self-addressed, stamped envelope** (if returning via United States Post Service)

Appendix D - Preliminary Field Test Questionnaire

The preliminary field test questionnaire is designed to collect feedback from recognized experts in the area of online professional development facilitators. This feedback will be used to evaluate and make revisions to *Communities of learning and cultures of thinking: The facilitator's role in the online professional development environment* (Identified as "product" on the questionnaire). If you need additional space for comments, please attach additional sheets as necessary or enlarge the space provided. The responses to this questionnaire will be kept confidential (they will not be identified by individual reviewer.)

Please rate each statement and include comments and/or suggestions for each section.

Reviewer Name _____ Date _____

1. The content of the product is based on correct analysis and interpretation of relevant research and literature.	Strongly Agree ☐	Agree ☐	No Opinion ☐	Disagree ☐	Strongly Disagree ☐
Comments & Suggestions:					

2. The format of the product is attractive and functional.	Strongly Agree ☐	Agree ☐	No Opinion ☐	Disagree ☐	Strongly Disagree ☐
Comments & Suggestions:					

3. The product can help online professional development facilitators design a low risk online professional development environment.	Strongly Agree ☐	Agree ☐	No Opinion ☐	Disagree ☐	Strongly Disagree ☐
Comments & Suggestions:					

4. The study group vignettes contain information that is helpful for online professional development facilitators.	Strongly Agree ☐	Agree ☐	No Opinion ☐	Disagree ☐	Strongly Disagree ☐
Comments & Suggestions:					

5. The content of the product is of interest to both novices to online professional development and experienced practitioners.	Strongly Agree ☐	Agree ☐	No Opinion ☐	Disagree ☐	Strongly Disagree ☐
Comments & Suggestions:					

6. The constructs (professional learning communities, self-directed learning, constructivist-based, coaching, etc.) of the study group vignettes were appropriate.	Strongly Agree ☐	Agree ☐	No Opinion ☐	Disagree ☐	Strongly Disagree ☐
Comments & Suggestions:					

What is the greatest strength of *Communities of learning and cultures of thinking: The facilitator's role in the online professional development environment*?

What is the greatest weakness of *Communities of learning and cultures of thinking: The facilitator's role in the online professional development environment*?

What information should be added to *Communities of learning and cultures of thinking: The facilitator's role in the online professional development environment*?

Other comments or suggestions?

Appendix E - Preliminary Field Test Consent Form

Recognition & Credit:

To recognize your participation in the development of this product, your name will be listed on the credits section of *Communities of learning and cultures of thinking: The facilitator's role in the online professional development environment.* Please provide your information for the listing.

_____ I <u>do not</u> wish to have my name or information published on the credits section of the handbook.

_____ I wish to have the following information included in the credit section (please list only the information you wish to be included):

Name _____

Title _____

Institution _____

Email _____

Please return this form and any additional pages electronically or in the self-addressed, stamped envelope provided by June 5, 2007, to:

Carol Simoneau

P.O. Box 468

Concordia, KS 66901

Email: carolsimoneau@nckcn.com

Appendix F - Letter of Instruction for Main Field Test

Date

First Name, Last Name
Organization
Address
City, State, Zip

Title, First Name, Last Name
Organization
Address
City, State, Zip

Dear First Name,

Thank you for agreeing to participate as a reviewer for the development of *Communities of learning and cultures of thinking: The facilitator's role in the online professional development environment*. You were selected because of your credentials as a leader in the field of online professional development. This process is part of the requirements needed to complete a Doctor of Education degree at Kansas State University. This review process is an essential part of the research and development methodology model I am using, and I greatly appreciate your feedback as I validate and refine my product. I am looking for conceptual as well as structural feedback for the handbook.

Should you have any questions or concerns with any part of the process, please contact me or my major professor, Dr. Gerald D. Bailey. Our contact information is enclosed for your convenience.

As you begin the review process, I would suggest you follow these steps:

1. Read the enclosed questionnaire to become familiar with the areas and questions for which you will be providing feedback (Main Field Test Questionnaire).

2. Read *Communities of learning and cultures of thinking: The facilitator's role in the online professional development environment*.

3. Complete the enclosed questionnaire (Main Field Test Questionnaire).

4. Return *Communities of learning and cultures of thinking: The facilitator's role in the online professional development environment* and the questionnaire (Main Field Test Questionnaire) in the enclosed self-addressed, stamped envelope or email the questionnaire to me at carolsimoneau@nckcn.com.

In order for me to complete this project on time, I must receive your feedback by July 5, 2007. I greatly appreciate your help with my project.

Respectfully yours,

Carol L. Simoneau	Dr. Gerald Bailey
P.O. Box 468	Professor of Education and Leadership
Concordia, KS 66901	303 Bluemont Hall
(785) 243-0889	Manhattan, KS 66506
carolsimoneau@nckcn.com	(785) 532-5847
	jbailey@ksu.edu

Enclosures:

• **Main field test questionnaire**-- *Communities of learning and cultures of thinking: The facilitator's role in the online professional development environment*.
• **Handbook**
• **Self-addressed, stamped envelope** (if returning via United States Post Service)

Appendix G - Main Field Test Questionnaire

The main field test questionnaire is designed to collect feedback from recognized expert and novice practitioners in the area of online professional development facilitators. This feedback will be used to evaluate and make revisions to *Communities of learning and cultures of thinking: The facilitator's role in the online professional development environment* (Identified as "product" on the questionnaire). If you need additional space for comments, please attach additional sheets as necessary or enlarge the space provided. The responses to this questionnaire will be kept confidential (they will not be identified by individual reviewer.)

Please rate each statement and include comments and/or suggestions for each section.

Reviewer Name _____ Date _____

1. The content of the product is based on correct analysis and interpretation of relevant research and literature.	Strongly Agree ☐	Agree ☐	No Opinion ☐	Disagree ☐	Strongly Disagree ☐
Comments & Suggestions:					

2. The format of the product is attractive and functional.	Strongly Agree ☐	Agree ☐	No Opinion ☐	Disagree ☐	Strongly Disagree ☐
Comments & Suggestions:					

3. The product can help online professional development facilitators design a low risk online professional development environment.	Strongly Agree ☐	Agree ☐	No Opinion ☐	Disagree ☐	Strongly Disagree ☐
Comments & Suggestions:					

4. The study group vignettes contain information that is helpful for online professional development facilitators.	Strongly Agree ☐	Agree ☐	No Opinion ☐	Disagree ☐	Strongly Disagree ☐
Comments & Suggestions:					

5. The content of the product is of interest to both novices to online professional development and experienced practitioners.	Strongly Agree ☐	Agree ☐	No Opinion ☐	Disagree ☐	Strongly Disagree ☐
Comments & Suggestions:					

6. The constructs (professional learning communities, self-directed learning, constructivist-based, coaching, etc.) of the study group vignettes were appropriate.	Strongly Agree ☐	Agree ☐	No Opinion ☐	Disagree ☐	Strongly Disagree ☐
Comments & Suggestions:					

What is the greatest strength of *Communities of learning and cultures of thinking: The facilitator's role in the online professional development environment*?

What is the greatest weakness of *Communities of learning and cultures of thinking: The facilitator's role in the online professional development environment*?

What information should be added to *Communities of learning and cultures of thinking: The facilitator's role in the online professional development environment*?

Other comments or suggestions?

Appendix H - Main Field Test Consent Form

Recognition & Credit:

To recognize your participation in the development of this product, your name will be listed on the credits section of *Communities of learning and cultures of thinking: The facilitator's role in the online professional development environment.* Please provide your information for the listing.

_____ I <u>do not</u> wish to have my name or information published on the credits section of the handbook.

_____ I wish to have the following information included in the credit section (please list only the information you wish to be included):

Name   _____

Title   _____

Institution   _____

Email   _____

Please return this form and any additional pages electronically or in the self-addressed, stamped envelope provided by July 5, 2007, to:

Carol Simoneau

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