Professional Development at a Distance: A Mixed-Method Study Exploring Inservice Teachers' Views on Presence Online

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Abstract

This paper uses a mixed-method approach to examine the efficacy of a 5-week distance learning model that offered 2-credit courses for K–12 inservice teachers as a form of professional development. This study examined the experiences of the inservice teachers across online professional development courses and analyzed participant surveys from this population to gain a better sense of satisfaction, learning, and quality of interactions related to the online professional development. The findings speak to the value of establishing a sense of "presence" online, the impact of online teacher professional development on the active classroom, and features that contribute to the enhancement of professional development online. (Keywords: Online professional development, teacher education, inservice teachers, online presence)

Emerging technology tools have created endless opportunities for learners of varied backgrounds and interests to access information and pursue formal degrees conveniently in a forum that meets their needs and comfort level. Research shows that more individuals are looking to online learning as a suitable option to continue their education, and it is clear that online learning forums are becoming a popular alternative for professional development and higher education (Lao & Gonzales, 2005; Swan, Shea, Fredericksen, Pickett, Pelz, & Maher, 2000; Tallent-Runnels, Thomas, Lan, Cooper, Ahern, Shaw, & Liu, 2006). Online learning offers students options that were previously inconceivable, yet with all of the choices available, there is still some distance in this learning forum that demands the attention of educational researchers and practitioners. To address the issues related to online professional development, this paper examined surveys from online courses that used a unique 5-week distance learning model designed for K–12 educators. This mixed-method study examined the concepts of presence, online interaction, participant satisfaction, and the impact of this online professional development experience on teaching.

Professional Development and Online Learning

Professional development is a unique process that aims to provide inservice participants with a new set of experiences, skills, resources, and knowledge that will support them as they implement the ideas they have studied in the field. Face-to-face developmental formats often range from train-the-trainer models and short-term institutes to mentoring and after-school workshops. Although most professional development models are tailored to meet the specific needs of the population and program objectives, online learning is rapidly becoming a preferred model for participants and providers (Swan et al., 2000; Tallent-Runnels et al., 2006). The online environment incorporates a level of convenience for the participant, as it can eliminate the need for travel, childcare, and scheduled class sessions. Online learning uses the Internet as the primary forum for information sharing and knowledge transmission and construction. Whether synchronous or asynchronous, the online approach to professional development focuses directly on the learner and aims to provide strong interactions with rich resources and prolific discussions among members of the learning community. For the participant and provider, the online learning format tends to be cost-effective and more appealing overall; however, several researchers have concerns regarding pedagogical quality and student satisfaction online. Ketelhut et al. (2006) and Dede (2006) suggest that empirical evidence with respect to best practices is sparse. Sparks, who is the executive director of the National Staff Development Council, writes:

> I remain a skeptical friend to those who say that e-learning will transform professional learning in schools. To quote a much older advertisement, I say, "Show me the beef." I want evidence that e-learning improves practice, boosts student learning, and contributes to the development of high-performing schools. (Killion, 2001, p. i).

Studies of face-to-face professional development models suggest that teacher inservice initiatives are most effective when informed by research, sustained over time, collaborative in nature, and focused on content and instruction in the context of learning (Garet, Porter, Desimone, Birman, & Yoon, 2001; Sandholtz, 2001; Swan, Holmes, Vargas, Jennings, Meier, & Rubenfeld, 2002). Sandholtz (2001) contends that in technology-centered situations, "teachers need basic skills and confidence using technology, but they also need help in integrating technology into their curriculum and instructional strategies" (p. 351). In addition, studies suggest that these effective initiatives are aligned with standards (local, state, and national) and provide opportunities for classroom implementation, reflection, and discussion (Garet et al., 2001; Guskey, 2003; Killion, 2001;

Pate & Thompson, 2003; Shulman, 1987; Sparks, 2002; Sparks & Hirsh, 1997). Fundamentally, quality professional development in teacher education demands experiences that are purposefully designed, situated in rich contexts centered in classroom instruction, and successfully integrated with powerful learning tools for teaching and learning. This type of environment requires a facilitator who can skillfully cultivate a safe and nurturing environment where teachers can function both as professionals and learners. These core principles of professional development transcend both face-to-face and online platforms with growing emphasis on program quality, which has resulted in the development of standards related to online learning in K–12 and higher education.

Researchers have refined findings in best practices and principles to guide the development and delivery of effective asynchronous instruction online (Moore, 2005; SREB, 2006; iNACOL, 2010). The Sloan Consortium (Sloan-C) has supported research efforts on asynchronous learning networks, surmising that learning effectiveness, cost effectiveness, access, faculty, and student satisfaction all function as the five pillars or quality principles for higher education online (Moore, 2005). A wealth of research attempts to identify the factors that contribute to learning effectiveness with a focus on the roles, interactions, and perceptions of predominantly undergraduate participants in online learning situations. Although the core of the literature has been focused on improving the quality of undergraduate online experiences, it is likely that the research findings and frameworks have implications for online learning at the K–12, graduate, and professional levels.

In 2006, the Southern Regional Educational Board (SREB) introduced Standards for Quality Online Courses, which have been adopted by 16 states and the North American Council for Online Learning (NACOL) in 2007. The key areas for quality online course include (a) content, (b) instructional design, (c) student assessment, (d) technology, and (e) course evaluation and management. In 2010, the International Association for K–12 Online Learning (iNACOL), formerly NACOL, updated the set of standards by adding "21st century skills" to the list of key areas and established a rubric to evaluate online learning courses (iNACOL, 2010). While reflecting on the sets of standards and benchmarks established by various agencies and councils, one may notice some of the differences and similarities among the key features selected to determine the quality of online learning. However, there is an underlying notion among the set that quality online instruction depends on the quality of the experiences/interactions online among instructors, learner, and content. Research also supports this notion that interaction in any setting (online or face-to-face) directly impacts the quality of learning (Anderson & Garrison, 1998; Anderson, 2003; Moore, 1989; Swan, 2006). Moore (1989) suggested that online interactions among the student, teacher, and content played a significant role in student learning and effectiveness. Expanding upon Moore's (1989) notion of the three types of interactions that promote learning, the Modes of Interaction model identifies student/teacher, student/student, and student/content interactions as overlapping and integral components of environments that support learning (Anderson & Garrison, 1998; Anderson, 2003; Swan, 2006).

Garrison, Anderson, and Archer (2000, 2006) have provided frameworks for analyzing critical thinking and the process of inquiry within graduate-level online conferences. The Community of Inquiry for Text Environments suggests that cognitive presence, social presence, and teacher presence are essential elements of the learning experience (Garrison et al., 2000). Swan (2006) synthesized the earlier work of Moore (1989) and the Garrison et al. (2000) model, explaining that:

> The community of inquiry model places learning at the interface of interactions with course content, instructors, and classmates, and at the center of the three kinds of presence which support online discussion—cognitive, teaching, and social. It further conceives all of these interactions as mediated through the online interface. (p. 2)

Findings from Rossman's (1999) analysis of thousands of course evaluations from 154 online courses revealed similar constructs of teacher presence, social presence, and cognitive presence, with teacher presence emerging as a critical factor. Rossman found that learners wanted prompt and personalized feedback from faculty. The same study noted that students preferred private feedback when opinions were challenged or criticism was negative. This type of response suggests that students were cognizant of their learning community and the rules of online engagement. Social presence was also evident in that participants valued, expected, and learned from the discussion responses of their classmates. Cognitive presence and interaction with content was evident when students reported that they wanted immediate opportunities to apply learning to real-life situations by incorporating online resources in their active teaching practices. Although the three kinds of presence contribute to the quality of the learning experience, several researchers have noted the importance of teacher presence in the learning community and called for additional attention to this area (Fredericksen et al., 2000; Moore, 2005; NEA, 2001; Sloan-C, 2003; Tallent-Runnels et al., 2006).

Swan, Schenker, Aviv, Shae, and Lin (2006), in a more recent study, examined what learners valued most through a robust analysis of data collected from open-ended comments from more than 2,000 undergraduate students enrolled in 32 institutions. Their findings suggest that faculty behaviors (teacher presence, interaction with instructors) are critical to student satisfaction and that students especially value instructor feedback. These findings were consistent with Rossman's (1999) and other, earlier studies of the influence of instructor presence on student satisfaction and perceived learning (Richardson & Swan,

2003; Shea, Pickett, & Pelz, 2003; Shea, Swan, & Fredericksen, & Pickett, 2002; Tu, 2002). Fortunately, emerging media applications are providing alternative approaches to traditional instruction and offering educators a variety of ways to interact with students virtually (Mayer, Heiser, & Loon, 2001; Tallent-Runnels et al., 2006).

Overview of the Online Professional Development Experience

This study examined factors that promoted interaction and satisfaction within the framework of the structural components of an online professional development experience for K–12 inservice teachers. This unique distance learning model, developed in 1998, provided sustained, cost effective, and highly interactive asynchronous professional development experiences over a 5-week period to K–12 private school teachers during the active school year (Signer, 2008). Professional development courses were offered through the citywide private school system, and teachers who enrolled in a professional development course receive 2 graduate credits that could be applied toward a degree program or continuing education credit at no cost to participants as the result of Title IID grant funding. Inservice teachers could enroll in a maximum of three courses each semester that focused on using Web-based resources in social studies, mathematics, science, language arts, multicultural education, literacy, reading, parental involvement, and inquiry-based learning. All of the courses were led by full-time university faculty who completed the university-mandated training for online instruction using WebCT in addition to training on this 5-week distance learning model. The online professional development experiences were aligned with New York State Learning Standards and National Educational Technology Standards for Teachers (NETS•T; ISTE, 2008) to provide opportunities for discussion, exploration, implementation, collaboration, and reflection with the instructor and colleagues online regarding the curriculum content. Supporting materials included Web-based readings, interactive application, and activities that supported teachers in classroom implementation. Several times each week, course participants logged in to post assignments, reflective responses, and active classroom updates and to interact with classmates and the instructor. Unlike other models, this online professional development model utilized "classroom updates," which were actual classroom experiences from each course participant in his or her active classroom as a platform for reflective teaching and learning. Online professional development assignments focused on developing an awareness and comfort level with successful techniques for integrating technology in content-area instruction that were applied in the classroom during the 5-week segment. The online professional development courses were designed to meet the growing challenges in the K–12 classroom and address the areas of content knowledge, skill, and pedagogy in an effective and efficient manner.

Table 1: Online Professional Development Courses and Enrollment

Title	N
Using Web-Based Resources in Childhood Literacy (1–6)	19
Using Web-Based Resources in Mathematics (1–6)	10
Using Web-Based Resources in Science (8–12)	14
Using Web-Based Resources in Social Studies (8–12)	12
Using Web-Based Resources in Inquiry-based learning (K–12)	13
Multicultural Education	13
Facilitating Parental Involvement	14

Method

This study seeks to examine:

- The participant perspective of presence related to the online professional development experience related to course satisfaction
- The factors and features of the distance learning model that contribute to student satisfaction related to online professional development
- The impact on the active classroom based on satisfaction with the online professional development experience

Procedures

Inservice teachers who enrolled to any of the online professional development courses offered during the Fall 2005–Summer 2006 semesters were invited to participate in the study. From approximately 205 inservice teachers, the query produced a 50% acceptance rate securing 103 participants. Data collection for this study began during the Fall 2005 semester and lasted approximately 10 months, with participant surveys administered online at the end of each course each semester. From seven courses, 95 out of 103 participants completed the online survey. However, only 66% of the surveys were answered completely, which presents a limitation to the results of this study.

Participants

The demographic characteristics of the 95 respondents presented a distribution of K–12 urban private school teachers that leaned toward a bimodal plot, with nearly 26% reportedly teaching grades 3–5 and nearly 34% reportedly teaching grades 6–8. Forty percent of the teachers noted that they had fewer than 5 years teaching experience. Fifty-two percent of the participants had never taken an online course before. However, 27% of the teachers had taken one or two previous online courses, and 21% percent had taken at least three online courses prior to the current semester. Table 1 shows the distribution of participants across the online professional development course offerings.

Design

This study employed a within-stage mixed-method approach in the examination of participant perspectives related

Table 2: Factor Analysis of 24 Items of Online Professional Development Survey

	Factors			
	Social Presence	Teacher Presence	Effectiveness/ Satisfaction	Cognitive Presence
Item				
I felt a relationship with other participants.	0.721			
I wanted more interaction with participants.	0.68			
I interacted frequently with participants.	0.68			
Student interactions promoted learning.	0.665			
Discussion board—good interaction tool.	0.649			
Student feedback reinforced learning.	0.622			
My contributions impacted learning.	0.566			
Participants played active roles in class.	0.557			
I felt part of the learning community.	0.564			
I shared learning with school colleagues.	0.463			
I felt a relationship with my instructor.		0.838		
I interacted frequently with my instructor.		0.809		
I learned from my instructor.		0.736		
I wanted more interaction with instructor.		0.691		
Instructor interactions promoted learning.		0.671		
I would take another SJU online course.			0.76	
I will use what I learned in the future.			0.743	
The model is effective for PD.			0.66	
Course increased my comfort with tech.			0.576	
I applied course readings to my postings.				0.826
I implemented new ideas in my teaching.				0.748
Course resources were effective.				0.736
Our online forum was uninhibited.				0.566
I will apply new learning in my teaching				0.516
Percent of Total Variance	28.06%	9.33%	7.49%	5.43%

to a unique model of online professional development (Johnson & Onwuebuzie, 2004). Mixed-methods studies offer researchers the opportunity take one of two approaches, within- or across-stage, as they design the methodology. Within-stage allows quantitative and qualitative data to be collected at the same instance (i.e., survey or questionnaire with Likert-styled responses and open-ended responses), and across-stage separates data collection in multiple instances (Johnson & Onwuebuzie, 2004). Participants in this study were K–12 inservice, private school teachers enrolled in one of seven online professional development courses offered in the fall, spring, and summer semesters of the 2005–06 academic year. Staying true to the within-stage mixed-method approach, we used both quantitative and qualitative approaches in the data collection instrument to identify factors that promoted student satisfaction and interaction. Based on evaluation surveys and focus groups from previous courses using the same model, we developed a 41-item survey. Thirty-nine Likert-scale items, with a range from strongly agree (1) to strongly disagree (5), investigated the themes of feedback, course resources, interactions, requirements, impact on teaching, sense of community, lack of visual images, and learner satisfaction. We calculated frequencies and descriptive statistics for each survey item. To determine if any of the demographic variables resulted in different responses, we conducted a series of inferential comparisons of means on the survey data. The demographic variables studied included course evaluated, grade assignment, number of prior online courses, and years teaching. In addition, we performed factor analyses to identify underlying constructs of the items in the survey.

Two open-ended items sought qualitative responses on the impact of the online courses on the participants' teaching and suggestions to improve the online professional development experience. We applied the qualitative analytical process to the open-ended survey items by categorizing and re-categorizing in a search for themes as well as unique cases (Denzin, 1989; Patton, 1990, 2002; Tesch, 1990; Wolcott, 1994). The same demographic variables (course evaluated, grade assignment, number of prior online courses, and years teaching) were included in the analysis of the open-ended survey items and reported in the findings. We then compared results from the Likert-scale survey with those from the open-ended survey. In addition, a correlation analysis was performed to test relationships between the open-ended item responses (impact on teaching and suggestions for improving courses) and the factors that emerged from the factor analysis (teacher presence, social presence, cognitive presence, and satisfaction).

Findings

Quantitative Analysis

The survey consisted of 39 items using a 5-point Likert-type scale and two items that solicited open-ended responses. The 39 items addressed course characteristics, influences on teaching, learning, and satisfaction. To facilitate the analysis and interpretation of the data, we factor-analyzed the survey responses. We conducted an exploratory factor analysis to identify the underlying factor structure suggested by the pattern of responses.

Table 3: Descriptive Statistics for Factor Scores

Description	N	Minimum	Maximum	Mean	SD
Social Presence	88	1	5	1.88	0.48
Teacher Presence	90	1	5	2.32	0.64
Effectiveness/Satisfaction	93	1	5	1.42	0.40
Cognitive Presence	87	1	5	1.59	0.51

Table 4: Comparisons of Mean Questionnaire Responses of Online Participants

Description	Variable	Values	N	Mean	SD	*F*	Sig.	Size
The interactions with my instructor promoted learning.	Course	Course A	19	2.00	1.05	4.24	0.004	0.46
		Course B	10	1.20	0.42			
		Course C	14	1.79	0.89			
		Course D	12	2.50	1.17			
		Course E	13	1.30	0.48			
I prefer this type of online staff development to face-to-face staff development courses.	Prior Online Courses	None	47	2.87	0.80	11.87	0.000	0.48
		1 – 2 courses	26	2.19	0.94			
		3 or more	20	1.90	0.72			

Note: Only items that showed statistically significant *F* values ($p < .05$) and moderate effect sizes are displayed.

The exploratory analysis indicated that 24 of the 39 items had strong associations with six factors. As a result, we applied a confirmatory factor analysis to the 24 items using a principal components analysis with rotation of the emerging factors using a varimax solution. This analysis yielded four factors, each associated with a unique set of items from among the 39 survey items: social presence, teacher presence, cognitive presence, and effectiveness/satisfaction. Table 2 (p. 79) summarizes the results from the confirmatory factor analysis with item loadings to label the factors. The first factor is comprised of 10 items that are associated with social presence and account for 28.06% of the survey variance. The second factor, teacher presence, accounts for 9.33% of the variance and is comprised of five items. Effectiveness/satisfaction served as the third factor, which accounts for 7.49% of the variance, summarized by four survey items. Finally, cognitive presence, the fourth factor, accounted for 5.43% of the variance with regard to five related items. Although these factors are meaningful for addressing important issues in online learning, they did not relate to 15 of the survey questions.

Table 3 displays descriptive statistics for the four factor scores derived from the factor analysis of 24 items of the 39-item survey. All four factors received favorable ratings, with the most favorable rating assigned to Effectiveness/Satisfaction (M = 1.42, SD = 0.40). Both cognitive presence (M=1.59, SD=0.51) and social presence (M=1.88, SD=0.48) offered collective results that leaned toward strongly agree/agree. Teacher presence (M = 2.32, SD = 0.64) received a positive result from the participants that was slightly weaker than the other factors neutral (2 = agree and 3= neutral).

Table 4 summarizes comparisons of the mean questionnaire ratings for groups of respondents who differed on two of the demographic variables. As a result of limited student responses, only five of the seven courses contributed to the analysis reflected in Table 4. The table displays the items that showed statistically significant differences for groups who varied by two teacher variables: course evaluated and prior online learning experience. The groups showed statistically significant differences in the means for survey items concerning instructor interactions and preference for online inservice courses. Although the mean ratings differed significantly by course for the item "instructor interactions promoted learning" ($F = 4.24$, $df = 67$, $p = .004$), the means for all courses were positive. This suggests that even with the same instructional model, teacher interactions, implementation, and interpretations varied among courses.

Means differed significantly, by prior online course experience, for the item indicating preference for online staff development courses over face-to-face courses ($F = 11.87$, $df = 92$, $p = .000$). Teachers with no prior online course experience were neutral, whereas those with some prior online course experience were positive and agreed with this statement. The survey responses indicated that the more online courses previously taken by participants, the more they expressed a preference for online professional development.

Of the 39 quantitative items, 15 were excluded from the primary findings as a result of the exploratory factory analysis. A review of descriptive statistics related to these 15 individual items revealed participants had positive responses regarding the distance learning model, quality of interactions online, and impact on teaching and learning. Similarly, these survey items revealed negative

Table 5: Frequency and Percentage of Participant Responses to Impact on Teaching

Comment	N	Percentage (N=95)	Percentage (N2=41)
New ideas for classroom instruction	39	41%	95%
Direct application for classroom instruction	36	38%	88%
Valuable resources	31	33%	80%
Incorporated new resources in instruction	26	27%	65%
Multiple methods of classroom instruction	18	19%	43%
Awareness of teaching	17	18%	41%
Used Web-based resources in class	17	18%	41%
Future use	14	15%	34%
Awareness of curricular needs	12	13%	29%
Benefited from the learning community	10	11%	24%
Curriculum development	10	11%	24%
Shared resources with colleagues	9	9%	21%
Inquiry-based learning instruction	9	9%	21%
Awareness of student learning needs	8	8%	19%
Feedback from other teachers	7	7%	17%
Multiple teacher perspectives	7	7%	17%
Improved teaching	7	7%	17%
Valuable discussions with other teachers	7	7%	17%
Think more critically about teaching	5	5%	12%

Note: Total number of study participants: N = 95; total number of responses to this item: N2 = 41

responses to additional interaction with peers, a sense of feeling invisible online, and a desire for visual images of colleagues/instructor.

Qualitative Analysis

The survey instrument included two items that allowed participants to voice their opinions of their online courses, which strengthened the findings of this study. Two researchers independently coded and analyzed participants' responses to the open-ended questions using the qualitative analytical process of categorizing (Denzin, 1989; Wolcott, 1994), and there was 94% interrater reliability among the results. Course participants offered a variety of responses about the impact of their professional development course on their teaching, which we calculated for frequency and population percentages after coding. Consistency among participant responses varied throughout the data set, and as a result, percentages are presented in relation to the total number of surveys (N = 95) and the number of completed responses for each item. We then compared results from the analysis using the correlation analysis to test relationships with emerging factors.

Impact on teaching. Table 5 shows the frequency and percentage of participant response items associated with the open-ended question regarding the impact of the online professional development experience on teaching. Forty-one out of 95 participants responded to this question. Thirty-eight of 41 (95%) qualitative open-ended responses to this item indicated that participants most frequently responded that their online professional development course provided new ideas for classroom instruction. Approximately 88% of the participant responses to this item claimed that the online professional development course had direct applications to the classroom instruction. Additional comments revealed that course resources (80%) and the ability to integrate these tools into teaching practice (65%) were among the most frequent responses to features of this professional development experience that had the greatest impact on teaching among participants. Seventeen of the 26 participants who felt they could integrate tools in their instruction also mentioned that they had already successfully integrated resources and new instructional methods introduced in the online professional development course. One participant stated:

> This course gave me additional insight as how to apply technology into my classroom. It gave me a clearer overview and explained some step-by-step procedures to use even though it has to be applied to my subject matter. It allowed me to see a more structured form of sending students on-line, and how to use the internet as a teaching tool, and how to use the Internet as a more challenging thought provoking lesson. The course has now given me a better understanding of how to make my high school students start thinking more independently even though I set up the boundaries and reference questions. (Participant 2, Course B)

Participants mentioned that the courses and instructors provided powerful resources that affected their instruction in several ways. They also stated that the learning community offered a variety of instructional methods, which helped to heighten their awareness of their own teaching style.

A correlation analysis of the factors (teacher presence, social presence, cognitive presence, and satisfaction) and the comments about impact on teaching resulted in three modest but significant relationships. Social presence and comments about the courses offering valuable resources showed a significant modest correlation ($r = 0.241$, $p = .024$). This suggests that access to resources and/or discussions on resources had a significant impact on social interaction within the professional development experience. Teacher presence and the

course having a direct impact on one's teaching also had a significant modest correlation ($r = 0.209$, $p = 0.048$). Although contributing to only 4% of the variance in teacher presence, participants found the instructor to be a valuable resource in enhancing personal teaching methods. Finally, cognitive presence and learning new ideas had a similar significant correlation ($r = 0.262$, $p = 0.015$). This suggests that exposing participants to new information and concepts had the greatest impact on learning among participants.

Suggestions to improve online professional development. The second open-ended survey question requested participant suggestions to enhance future cohorts of online professional development. An analysis of the 38 responses to this item presented satisfaction with the online professional development model/course as the most frequent response (N = 30, 78%). Participants also frequently offered additional instructor feedback (N = 13, 34%) and interaction (N = 7, 18%) as a suggestion for components to strengthen within the online professional development experience. Table 6 contains the frequencies and percentages of the coded responses related to participant suggestions to improve online professional development.

Participants shared the following comments to improve online professional development:

> None—This is my 4th class and I will keep on coming back for more—I feel they are excellent for professional development. (Participant 5, Course A)

> nteraction of professor to increase thought provoking conversation with other students online. (Participant 6, Course D)

Among the infrequent responses, participants mentioned suggestions that address faster feedback, more teacher presence, more variety, richer discussions, and synchronous chat options. Collectively, the suggestions serve as a guide for improving online professional development experiences to meet the needs of global learners.

Table 6: Frequency and Percentage of Participant Responses to Suggestions for Improvement

Comment	N	Percentage (N=95)	Percentage (N2=38)
Satisfaction with online professional development	30	32%	78%
More faculty feedback	13	14%	34%
More interaction online	7	7%	18%
More help with technical problems	6	6%	15%
Real time chat	6	6%	15%
Time requirements	5	5%	13%
Clearer course requirements	5	5%	13%
Faster faculty feedback	5	5%	13%
More teacher presence	4	4%	11%
Richer discussions	3	3%	8%
More guidance	2	2%	5%
More student interaction	2	2%	5%

Note: Total number of study participants: N = 95; total number of responses to this item: N2 = 38

Discussion

This study conducted an investigation to understand the participant perspectives of online professional development, the value of online presence in this experience, factors that play a role in course quality, and the overall impact on the active classroom.

Participant Perspectives on Presence Online

The findings illustrate a unique portrait of teacher, social, and cognitive presence as they related to this online professional development experience. Results from the factor analysis indicated that social presence and teacher presence served as the greatest factors related to participants' learning and satisfaction in this experience. Social presence, the greatest factor, involved interactions with other colleagues online that largely took the form of asynchronous discussions, chats, postings of papers/artifacts, and e-mail. From the collection of peer-to-peer interactions, participants felt that they were able to develop relationships that promoted learning. Based on the distance learning model, online professional development course instructors served as facilitators, lecturers, and mentors by introducing new materials, posing questions, supporting discussions, and providing feedback. As a result of the design, participants would provide actual classroom updates and respond to the experiences of their peers. This design feature offered an environment for relationship building among the participants and social presence online. Fortunately, the instructor was completely involved in the process and actively contributed to the online social experience. The findings indicated that teacher presence had less impact on participants' learning than social presence.

Although participants frequently interacted with their instructor, felt that they had developed a relationship that contributed to learning, and typically agreed that they were satisfied with the instructor—all features of teacher presence—some participants still wanted a stronger connection. Data also revealed that perspectives of teacher presence varied across courses and instructors. When comparing significant responses to teacher presence across five courses, participants in one course expressed slight dissatisfaction with the instructor's methods, level of interaction, and/or impact on learning (see Table 4). It is important to note that topics and assignments also varied across courses, which may also have contributed to this result. Qualitative responses also suggested several improvements related to teacher presence, including more feedback and interactions, synchronous chats, faster responses, and more guidance. The findings suggest that teacher presence plays

a powerful role in online learning, and despite the satisfaction and convenience associated with this model of online professional development, there is room for improvement.

Cognitive presence served as one of the four contributing factors to participant learning and satisfaction in the study. Participants agreed that they benefited from the overall experience, indicating that the online forum, readings, and resources contribute to their professional growth and ability to apply new concepts in their active classroom. Literature continues to discuss the significant role of the instructor and value of teacher presence as it pertains to online instruction (Richardson & Swan, 2003; Shea et al., 2002; Shea et al., 2003; Tu, 2002). This experience also demonstrated that despite training with the online professional development model, other variables may affect implement. Instructors may require additional online support throughout the actual implementation, work with material that does not avail itself to the online environment, or perceive that they are providing adequate feedback and participant interaction.

Ultimately, the data supports that the online learning environment, quality of instruction, interactions and resources, and design of the model contributed to participant learning and overall satisfaction with this online professional development experience. The findings are consistent with previous studies citing that presence, situated experiences, quality faculty, ample training, learning effectiveness, cost, content, and design contribute to student success and satisfaction in online learning situations (Garrison et al., 2000; iNACOL, 2010; Moore, 1989; Swan, 2003, 2006).

Important Factors and Features with Online Professional Development

In addition to social presence, teacher presence, and cognitive presence, this study also investigated other factors and features related to online professional development. Participants valued tools that promoted social networking and instant connections to the learning community. However, participants' open-ended responses to improvements frequently referred to the area of social interaction (i.e., more feedback, more interaction, real-time chats, and faster responses). This may indicate that participants are personally comfortable functioning in a digital environment and now demand the same level of access in their academic life. This finding is consistent with studies that recommend mixed-method and media-enhanced approaches to teaching online (Mayer et al., 2001; Tallent-Runnels et al., 2006).

This study also found that prior participant experience with online courses played a significant role in determining satisfaction with the online professional development. Participants with previous online learning experience were more satisfied with the online professional development courses than their colleagues without prior online learning experience. Data indicated that satisfaction with the online courses increased as participant experience with online courses increased. This suggests that in addition to instructor (faculty) training, institutions may consider implementing a participant (student) preparation component for first-time online learners to provide an opportunity to preview the environment, features/functionalities, and expectations of an online course.

Overall Impact of Professional Development

The participants strongly agreed that this online professional development experience had a positive impact on their knowledge of the course topic and related instructional practices. Woven throughout the responses, participants noted other benefits, including developing an awareness of Web-based resources, teaching, curricular needs, and student needs. The high frequency of comments regarding new teaching ideas, resources, and classroom implementations provided evidence that the concepts and practices also affected the classroom. An examination of the responses on course impact by number of years teaching, grades taught, or prior number of online courses failed to produce a disproportionate number of the comments or significance to any of the identified groups, serving as an indicator of consistence. As a result, while acknowledging limitations of the model and study, the evidence supported the notion that the online professional development experience had a positive impact on the entire population of participants and courses.

Limitations and Future Implications

Findings from this study offer quantifiable evidence and a broader perspective on the use of the Internet as a vehicle for learning and professional development. This study recognizes several limitations and weaknesses as a result of small numbers of courses and participant responses, in addition to the depth of the qualitative questioning. Researchers also note that despite the training provided to faculty, not all online professional development instructors implemented a consistent model of interaction, as recommended in training. The variety of suggestions could indicate variation across participant comfort level, course themes, or implementation of model, but ultimately there is a need to develop course instructors who can nurture student participants at all comfort levels online. The findings, however, speak to the importance of developing all three facets of presence in online courses (teacher, social, and cognitive) and the need for multiple forms of interaction to ensure student learning and success. Given the growth of social networking and the comfort level with those communication tools, it is reasonable to assume that this high level of interaction is expected in both personal and professional settings. This fuels the need for researchers and developers to continue the examination of instructional methods that facilitate collaboration and social interaction online. Future research should consider the impact of faculty and student online preparation courses on student success and satisfaction, faculty and student perceptions of quality interaction online, best practices that

contribute to teacher presence in a Web 2.0 world, and best practices to enhance student interaction online.

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