

## CHAPTER 2

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# ONLINE CONFERENCES FOR PROFESSIONAL DEVELOPMENT

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### ABSTRACT

Online conferences (OCs) offer a compelling set of economic and pedagogical benefits for teaching, learning, personal, and professional development. In this chapter, we provide examples and a model to guide development of this professional development application of e-learning. The cost-effectiveness of OCs, coupled with the capacity to provide time-flexible participation on a global scale, convinces us that OCs will continue to play a vital and increasing role in quality professional development activities. Similar to face-to-face conferences (F2FCs), effective OCs must focus on relevant and timely information dissemination, provide opportunities for interaction leading to knowledge creation, and support the development of learning communities. In their broadest sense, OCs and F2FCs have two major goals. The first is to create knowledge through personal, organizational, and community learning. The second is to develop social networks that can later be used to create valued collegial relationships and extend learning beyond the conference.

The method used by OCs to achieve these goals is an intense network-mediated interaction. The interaction takes place over a limited period of time using a combination of synchronous, asynchronous, and immersive technologies on a global scale. OCs are economically and pedagogically attractive because of their “anywhere and anytime” characteristics with low production and participation costs. In this chapter, we review characteristics and qualities of OCs, provide examples of successful OCs, and outline a model of relevant qualities affecting OC learning outcomes. The unique and promising role of this form of professional development in the current and emerging networked society is explored.

Online conferences offer a compelling array of benefits for teaching, learning, personal, and professional development. Online conferences (OCs) originated in a “horseless carriage” manner from organizational models of face-to-face conferences (F2FCs). OCs greatly reduce the restrictions imposed by geography and temporal synchronicity. These advantages are countered by additional requirements for technical online mediation and distinct challenges associated with time allocation and commitment by participants. What remains common in both F2FCs and OCs is a focus on relevant and timely information dissemination, coupled with the opportunity for knowledge development and community building. Presenting, discussing, debating, and learning among peers are critical processes in the support of knowledge creation (Anderson, 2003a; Wenger, 2001) and a cornerstone of professional development theory and practice (Anderson, 1995; Brown & Duguid, 2000; Cervero, 1990).

OCs are distinguished from other forms of online professional development such as newsletters, listservs (Hyman, 2003), and blogs (Downes, 2003) that offer intense interaction over a limited period of time, usually from a couple of days to a couple of weeks. Early OCs were developed using simple text-based interactions, but more recently a host of synchronous, asynchronous, and immersive technologies are used, often in combination with each other. Due to the pervasive nature of the Internet, access to the OC is offered on a global scale and at a cost for participation much lower than similar F2FCs. However, these benefits are countered by potential difficulties. An obvious barrier is the required access to computer technologies and competency using networks. A second barrier is difficulty in retaining the commitment and attentiveness of participants, resulting in a less rich environment for personal networking than that afforded by F2FCs. In this chapter, we review characteristics and qualities of OCs, provide examples of OCs, and outline a model of relevant qualities affecting OC learning outcomes. To conclude, a description of the unique and promising role of this form of professional development in the current and emerging networked society is provided.

## DEFINITIONS

OCs come in many forms and are experienced differently by participants, thus a few definitions provide a common understanding. The word “online” is defined in the *Merriam-Webster Online Dictionary* as “connected to, served by or available through a system and especially a computer or telecommunications system.” The word “conference” typically refers to individuals meeting for consultation or discussion with a formal agenda. From these definitions, an “online conference” can be defined as a structured meeting of participants with a shared interest taking place over a limited period of time and available through a telecommunications network. The definition associates OCs with F2FCs in form and purpose. In their broadest sense, OCs and F2FCs have two major goals. The first is to create knowledge through personal, organizational, and community learning. The second is to develop social networks that can later be used to extend learning beyond the conference to create valued collegial friendships and relationships.

## OC EXAMPLES

In this section, the salient operational features of the inaugural OC and five contemporary OCs are provided.

### **The International Council for Distance Education OCs**

In 1992, I (Anderson) was a PhD student in much reduced financial circumstances than I had enjoyed as a professional distance education administrator. No longer did I have the money to fly to F2FCs that I had attended in the past. For example, the International Council for Distance Education (ICDE) has, since 1938, sponsored 3- to 4-day conferences for distance educators held at locations around the world. I believed that there were many other distance educators (and especially those in developing countries) like myself, who may have been interested in the conferences, but who lacked the funds to participate. I conceived of the idea of sponsoring an OC that would run at the same time as the XVI World Congress of the ICDE in Bangkok, Thailand, in 1992. I thought that the OC could be integrated with the F2F Congress, allowing remote participants to engage with F2F delegates and guest speakers through terminals at the conference site. This endeavor evolved to become the first network-based OC (Anderson & Mason, 1993).

In those pre-WWW days, the only network technology available was a variety of email networks, including the early Internet, Usenet, FidoNet,

NetNorth, and BitNet. The structure of the Bangkok OC mirrored the structure of the F2F Congress by inviting speakers (some who were also speaking at the F2F Congress) to compose opening (text-based) speeches or papers. These were followed by feedback, questions, and comments from the distributed audience. Messages were transported via a number of email lists, existing computer conferences and manually ported between various networks. Since the interactions were mirrored over a number of networks, there was no way of calculating the actual number of participants.

A number of important lessons were learned from this pioneering experience. The first was that this form of professional development can be less expensive than F2FCs. My expenses for running the OC consisted of a few faxes to Bangkok and a book offered as a gift to each of the keynote speakers. There was no charge for participation with the total cost to me less than \$200. At this time the registration fee for the F2FC in Bangkok was \$450 per person (not including transportation, lodging, meals, and entertainment costs). The second lesson learned was that timing is critical. The OC can be perceived as competition by the organizers of the F2FC and should not be scheduled so as to conflict and thus compete with a regular F2FC. We also learned that one cannot reasonably expect significant participation in online environments by F2F delegates who are fully immersed in the social and professional activities of the F2FC. Finally, we learned that scheduling is critical even when using an asynchronous medium. We scheduled the six topics to run simultaneously and found that participants had difficulty sorting through the various topic threads.

Four years later, I organized a second OC for ICDE, but this time it was scheduled to run before the start of the F2F Congress. The six sessions were distributed over a 3-week period and used listservs and Usenet feeds (with archive features) that were established specifically for the OC (Anderson, 1996). One of the sessions also used a text-based virtual reality MUD (multi-user dimension) (Schneider & Godard, 1996) system to support real-time sessions and a celebratory end-of-conference party. The design of this second OC went beyond keynote speeches and questions to include debate, nominal processes, brainstorming, and the synchronous MUD sessions.

We also discovered the value that lays hidden in the OC transcripts that are available for review and research after the conference concludes. The transcripts of this OC were used to develop an innovative transcript analysis system for documenting the social construction of knowledge (Gunawardena, Lowe, & Anderson, 1997).

## **Online Forum on Social Access to Learning Technologies**

OCs are often very public events supporting a multitude of distributed participants. However, they can also be developed for more homogenous professional groups to provide focused professional development. An example of a targeted OC was the “Online Forum on Social Access to Learning Technologies” sponsored by the Canadian Office of Learning Technologies. This OC was held on a private, asynchronous computer conferencing platform. Twenty-three invited experts in the fields of adult education and community development participated in the 3-week OC. Survey and interview evaluations of participants revealed that the forum increased participants’ knowledge of networked learning opportunities and their understanding of topical issues related to increasing social access to learning technologies (Anderson & Kanuka, 1997). The study also revealed that the OC met (based on participant perceptions) Rogers’ (1995) five criteria for adoption of innovation: relative advantage, trialability, compatibility, complexity, and observability. The study concluded that “this type of consultative and group activity is perceived by the participants and the forum’s organizers as adding value to policy development, enhancing networking opportunities, and contributing to continuing education for professionals” (Anderson & Kanuka, 1997).

## **Online Tutoring Skills Project**

OC sessions can also be focused on issue resolution and project collaboration. The “Online Tutoring Skills” (OTiS) Project used the viewpoints of 100 delegates located in 19 countries to discuss 36 case studies related to online tutoring issues. The case studies were refined, annotated, and later distributed as learning objects and in book format (see <http://otis.scotcit.ac.uk/>). In the process of this task, the organizers noted that:

The e-workshop essentially became a community of practice where participants were assisted and encouraged to share their experiences. As the e-workshop took place online, all exchanges could be captured. In this way, the e-workshop model provided an accessible, effective, and affordable way of developing a complex and diverse range of skills in a large number of professionals, while retaining the potential to reuse the products of the workshop. (Harris & Higgison, 2003, p. 235)

## Teaching in Community Colleges (TCC) Online Conference

The longest-running OC series is the "Teaching in the Community Colleges (TCC) Online Conference," which has been held annually since 1996. The TCC conferences last for 3 days and include a variety of presentations, panels, and live chats. The OC's website (<http://tcc.kcc.hawaii.edu/index.html>) provides a wealth of historical data and examples of evolving best practice, including a 10-item guide to "getting the most from an online conference." Conference organizers Jim Shimabukuro and Bert Kimura argue that:

an online conference allows for more quality communication with peers and leaders, such as presenters and keynoters. In F2F conferences, the keynoters aren't accessible to the average participant. However...in online events, the participant, after having read a presenter's paper and bio, is better prepared and able to meet and chat with the writer. (Shimabukuro, 2003)

## Best Practices in e-Learning Conference

OCs can be run on a cost-recovery or for-profit basis. As an example of this more entrepreneurial development, the University of Calgary sponsored the "Best Practices in e-Learning Conference" (<http://elearn.ucalgary.ca/conference/>). One hundred and one presenters and 264 participants interacted through a tightly scheduled series of synchronous and asynchronous activities running over two days. Activities included:

- keynote presentations by renowned e-learning experts;
- concurrent sessions on current e-learning topics;
- preconference workshops (hands-on learning experience and opportunity to discuss various in-depth technologies, techniques, and practices of e-learning); and
- social networking opportunities with global colleagues (online coffee room, games, swap meet, and online tours).

The OC registration fee of \$100 (Canadian) included the keynote presentations that were webcast using a QuickTime streaming server. Emailed questions were accepted from the participants during the streaming webcast. Additional synchronous chat sessions provided instantaneous information sharing for those able to attend at scheduled times. The presentations were recorded and made available online to participants for their review. The threaded discussions were hosted on the conference website for a week following the OC. Crane (2003) completed an evaluation report based on workshop surveys and an overall conference questionnaire

of the “Best Practices in e-Learning Conference.” Forty-two surveys were completed, showing 86% of respondents agreed or strongly agreed that:

- the OC met their expectations;
- they will attend the OC next year; and
- the OC was a valuable professional development experience for them.

## VLearn3D—Knowledge Spaces and Information Landscapes

Although most OCs have been based on low-bandwidth technologies of text-based interaction, a few have used graphical, immersive technologies to mediate the interaction in real-time. An early example of the use of graphical-based immersive technologies was the series of four “Interactivity and Information Visualization in Virtual Worlds” sponsored by VLearn3D. The 2001 OC entailed a keynote address and three informal panel discussions. The keynote address presented ideas on creating innovative information and knowledge spaces for collaboration, communication, and interaction. The informal synchronous communications between panel members focused on experiences with 3D applications to enrich online learning.

Figure 2.1 illustrates the use of personal avatars by participants to interact during the VLearn3D 2001 OC. The OC synchronous chat forum more closely follows the F2FC structure with a visual persona and capacity to interact spontaneously, with graphic gestures or text interjections, during the conference sessions.

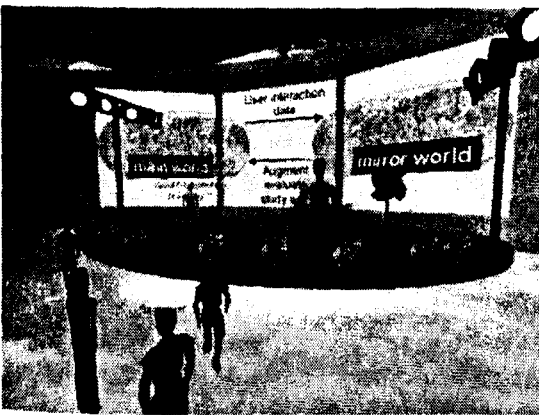


Figure 2.1. A depiction from the VLearn3D 2001 conference. Reprinted with permission of VLearn3D, the Contact Consortium and Katy Borner, Indiana University.

From the above descriptions of various OCs, we see that there is no one correct model of OC organization or any prescribed technologies. Rather, important variables such as the ones below can be managed to create a variety of OC experiences:

- the learning design that is instantiated in the conference activities,
- the nature of the content and learning goals,
- the types of technologies used,
- the length of time over which the OC operates, and
- the means and by whom the efficacy of the OC is evaluated.

The next section presents a model to assist designers in creating OCs that maximize professional development and the learning opportunities of participants.

## **A MODEL OF THE ONLINE CONFERENCE**

A model serves as an initial step in theory construction as it lists the salient variables and shows the relationship and interactions among these variables. The model can then be used to guide experimentation, data collection, hypothesis generation, and practical decision making. As the model is refined and strengthened with empirical data that quantify, validate, and refine the variables, it becomes sufficiently robust to be referred to as a theory.

Figure 2.2 is an initial step to develop a model of effective OC design. The model borrows its structure from Biggs's (1989) 3P model of student learning. In this model, a series of *presage* variables brought by the participants serve to interact with the *process* of the education transaction with resulting *products*. These three types of variables are discussed in the following sections.

### **Presage Variables**

Many of the presage variables are beyond the control of those organizing an OC. They are presented in the model because of their critical importance. The presage variables allow participants to appraise the likelihood of having a successful experience based on their personal assessment of the strength of individual variables. Motivation to participate is a critical variable that entails both personal and professional dimensions. Personal motivation comes from a drive for self-improvement, a thirst for knowledge, and a commitment to enhance one's personal and professional expertise. Professionally, the participant must see participation as a valuable use of time that will also be valued by their employer. Promotional materials created by the organizers and distributed to the participants



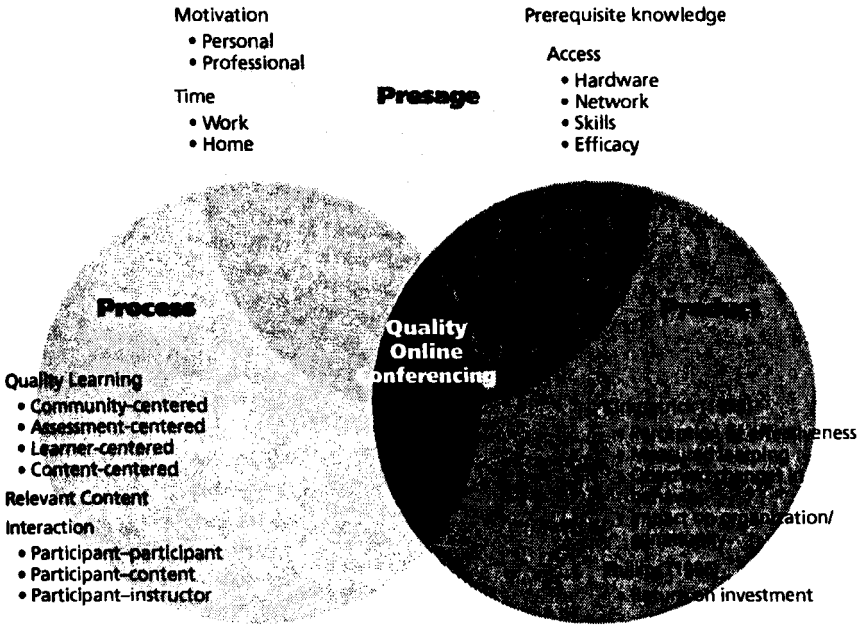


Figure 2.2. Salient variables in effective online conferences.

addressing these factors can influence the participants' appreciation and self-assessment of these presage variables.

Time, paradoxically, is perhaps the most important variable in a medium that functions "anytime and anyplace." A common reaction of OC participants is an inability to give the necessary time to an online activity when it must compete directly with other personal and workplace time demands. Physically removing oneself from both personal and workplace demands on time is a characteristic of F2FCs that provides significant advantages over OCs. To mitigate against this disadvantage, OC participants must be effective time managers with the capacity to allocate time for OC participation. Ideally, this time allocation is provided at the workplace, but with the increasing erosion of boundaries between workplace and home, many participants access the OC from both locations.

Access variables can act to restrict participation in the OC. First is the variable of access to machines with sufficient power and software to support the OC environment and communication tools. These tools should be sufficiently adaptive to meet the particular learning preferences and personal access limitations of participants. Second is access to a reliable network connection to the Internet. The increasing use of streaming video

and more advanced learning, presentations, and simulations mean that access to a high-speed (LAN, cable, or DSL) connection is moving from a convenience to a critical factor for quality participation. Third is access to the skills necessary to operate the various hardware and software packages. Finally, because the tools of the OC are constantly evolving and changing, participants must not only have a set of static skills, they must have a sense of Internet efficacy (Eastin & LaRose, 2000) such that they can troubleshoot problems, install new applications, and generally overcome navigational, organizational, and other issues that inevitably arise when operating in a novel technical context.

The final presage variable refers to the extent of the participant's pre-knowledge of content presented and discussed during the OC. Participants who come with either too little or too much knowledge of the subject will likely be disappointed with the outcome. Understanding the extent of participants' existing knowledge and interests allow OC organizers to structure the content, tools, pace, and organization to meet participants' needs and expectations.

## **Process Variables**

The process variables are influenced most directly by the choice and execution of the activities that make up the OC. These variables have been split into three components: those dealing with relevance of the content, those dealing with the interaction techniques used to ensure active participation, and those designed to support effective learning.

One of the most critical components of quality adult education is that it must be relevant to the individual needs of participants. Adult learning theorists (e.g., Knowles, 1980; Schön, 1983) pointed out that, unlike children, adults won't participate in learning activities perceived as irrelevant to their personal or professional lives. Successful conference organizers must stress themes, presentations, and activities that are timely and tuned to the emerging needs of prospective participants.

The impact of interaction in distance education contexts has been documented with various types of interaction defined (Anderson, 2002, 2003b), as distance education characteristics shared with the OC. During the OC, active learning is most effective when it involves high-quality interaction with content, other learners, and subject experts. Content interaction in the OC has traditionally taken the form of reading a presentation by a subject matter expert during or prior to the OC. Increasingly, however, OCs are being constructed with more interactive content such as simulations, games, slide shows, streamed video, and a host of new multimedia productions.

Access to content alone doesn't create an OC. An OC must include interaction with other participants, usually with one or more acknowledged experts in the field. Typically, interactions with experts consist of listening to a presentation (often accompanied by slides) with time for questions and comments. Participation often begins synchronously during or directly after the presentation and is usually extended asynchronously over the length of the OC. This use of asynchronous interaction for the majority of time makes it easier to recruit guest experts in OCs, as they do not have to expend time on travel and are able to easily accommodate the OC into their schedule.

Interaction with peers is a critical component of quality professional development. Cervero (1990) argues that the professional educational context "must be arranged so that professionals can test, evaluate and modify their existing schemata so that some resolution can be achieved between the learners' knowledge structures and the new one being proposed" (p. 166). This resolution comes through discourse among participants during the OC. Participants must feel safe and encouraged to risk exposing their ideas to an online group. Creation of a supportive environment is aided by the active presence of a skilled facilitator who either performs the online teacher's roles of designing and planning activities, facilitating discourse, and adding subject matter expertise (Anderson, Rourke, Archer, & Garrison, 2001) or acts as an online moderator (Salmon, 2000).

Finally, the processes of the OC must result in high-quality, effective learning. After an extensive review of the characteristics of successful learning contexts, Bransford, Brown and Cocking (1999) concluded that successful learning has four overlapped lenses. These are included in the model to help organizers and participants shape their participation in the OC with the highest likelihood of effective and efficient learning outcomes.

The first lens described by Bransford and colleagues (1999) was that quality learning is content-centered. This relates to the relevance criteria discussed earlier, but also focuses on the need for OC content to be grounded in the discipline and the "big and important ideas" that define professional theory and practice. An OC is not a social club, virtual pub, or across-the-fence conversation with a neighbor. Rather, it is a serious effort to grapple with issues that impair or assist our capacity to act as effective and humane professionals.

Secondly, Bransford and colleagues (1999) noted that quality learning is community-centered. There are many definitions of community and an evolving literature on professional (Wenger, 2001) and online learning communities (Coate, 1998; Cutler, 1995; Rheingold, 1994; Tu & Corry, 2002). The community-centered attribute focuses the OC on the critical social component of learning. This relates to Vygotsky's popular notions of

social cognition and leads us to Lipman's (1991) community of inquiry and Wenger's (2001) community of practice. With each of these researchers, we find that the critical function of learning communities is mediating, interpreting, and motivating learners in their acquisition and application of knowledge. Social participation engages members in activities, creates knowledge, and constructs identities. Lueg (2000) states:

Social participation, in this perspective, is not just engaging in certain activities, such as working in a team, but actively participating in the practices of social communities and constructing identities in relation to these communities. Such participation does not only shape what participants do but also how they perceive themselves and how they understand what they are doing.

Communications technologies increase the speed and scope of information sharing that can enhance the development of community. Through shared experience of exposure to new knowledge, coupled with the opportunity to socially reflect on its professional applications, participants create a shared understanding and the motivation needed to enact strategies to achieve shared goals. The opportunity to provide an understanding to the community should not be undervalued. Hixson and Tinzmann (1990) contend that:

The opportunity to take advantage of the expertise of others, and be recognized for their own, can provide educators with important reinforcement and incentive for continuing growth and development, as well as the enhanced personal status and respect that comes from membership in a "community of learners" with their professional colleagues.

The third lens of quality learning is that it is student-centered. The OC must be flexible in organization such that it can respond very quickly to existing and emerging needs of participants. The organizers should also be aware of the presage variables noted earlier and design the OC activities so as to meet participants' capacity.

Finally, Bransford and colleagues (1999) noted that effective learning is assessment-centered. Very few F2FCs or OCs make extensive formal assessment a component of the professional development activity. Nonetheless, learners both enjoy and benefit from assessment that helps them understand their own learning processes and accomplishments. OC participants would benefit from automated quizzes, reaction panels, and questions that provide feedback as to their current and growing knowledge.

## Product or Outcome Variables

Quality OCs lead not only to participant satisfaction, but also lead to knowledge being transferred to professional practice, resulting in improvements to practice. The costs of the conference are justified by these improvements. The outcome variables identified in the model borrow heavily from the well-known work of Kirkpatrick (1979) who identified four levels of evaluation of workplace training initiatives. The first level is learner satisfaction. If the learner does not perceive that the OC contributed to their knowledge and practice in an effective manner, they are unlikely to repeat the process and may conclude that the OC wasted their valuable time. Participant evaluation is the easiest product to evaluate, often instituted through end-of-session and end-of-conference online surveys. We have, however, been disappointed in the past by the response rate of such evaluations. For example in the Best Practices OC example discussed previously, only 42 surveys were obtained from 264 participants. Knowing that there is no one standing at the door soliciting completed evaluations makes it very easy for the OC participant not to bother with the evaluation. Thus, organizers are challenged to offer incentives or devise measures similar to a F2FC door monitor to solicit high return rates at this first level of evaluation.

The second of Kirkpatrick's (1979) levels of evaluation relates to measuring actual learning gains. How much of the content was actually retained by participants? Measuring such knowledge gains is challenging in that pre- and post-conference testing is often required, though logistically challenging. As noted earlier, ongoing assessment could be an aide for participants to measure their own learning gains.

Third, Kirkpatrick (1979) notes that new knowledge doesn't make a difference to professional practice unless it results in changes in actions or attitudes. These changes often develop over days, weeks, or months after the knowledge is acquired during the OC, thus it is challenging to evaluate. Data from participants' supervisors, as well as longer-term reflections, may be useful in gathering third-level data.

The fourth level asks if the changes in practice really make a difference to either the bottom-line of a business or to the effectiveness of professional practice. For example, an educational professional practice OC may be positively perceived by teachers (Level 1) and result in greater knowledge of techniques and theory (Level 2). This may result in an actual increase in relevant activities (Level 3), but does the activity result in measurable learning gains, increased cognitive capacity, higher student retention, or other measures of educational output (Level 4)?

A fifth level of evaluation was added by Phillips (1996), who argued that the benefits of the first four levels of evaluation of professional develop-

ment or training activity must be less than the costs involved in planning, facilitating, and participating in the intervention. He refers to this as a positive return on investment (ROI) and argues that failure to evaluate at this level can result in effective programs that are unaffordable. Calculating the ROI depends on evaluation measurements from the previous four levels, certainly a challenge for OC organizers. However, the much lower costs of OCs, especially the elimination of the cost of participant travel and accommodation, which typically consume 70–80% of traditional training budgets, make it probable that OCs produce much higher ROIs than comparable F2FCs.

## **CHALLENGES ASSOCIATED WITH OCS**

The greatest challenge to participants and organizers of an OC is the ability to allocate sufficient time from the pressures of ordinary life in order to support meaningful learning (Crane, 2003; Shimabukuro, 2003). Time-on-task has long been associated with learning effectiveness. The capacity to shift time using asynchronous technologies is useful, but professional education and learning in the “24/7 Information Age” place incessant demands on participants’ time, regardless of the media, location, or format (Anderson, 1996).

Time flexibility with asynchronous communications seems to imply that busy professionals will be available “anytime and anyplace.” Participants’ perception studies consistently reveal the challenges of time management in an OC. For example, Shimabukuro (2003) quotes a participant comment: “There is a perception that the conference is not real and as such it is difficult to allocate sufficient time to the conference, in particular discussion groups.” Another participant noted the obvious freedom from everyday distractions that are associated with travel to a F2FC. Thus, effective OCs sensitize participants to associated time requirements and ensure time is used effectively throughout the OC.

There are various challenges associated with OCs beyond time constraints. Networked communications provides great opportunities for global communications. However, participation hinges on access to hardware, software, and skills. OC organizers are challenged to retain the commitment and attentiveness of participants, possibly resulting in a less rich environment for personal networking than afforded by F2FCs. Strong participation and commitment to learning will serve as a foundation for the growing legitimacy of OCs. Effective OCs will overcome the perception that questions the valid learning outcomes of OCs.

## CONCLUSION

We conclude by quoting Serim's (1996) argument that online professional development is emerging as

an international revolution, motivated by the vision of free-flowing knowledge, people taking responsibility for their own learning, and grand-scale collaborations that embrace the innovations of networking, enabling us to exchange new types of communications and experiences to build human and informational resources that address common problems in a spirit of community.

In this chapter we have attempted to provide examples and a model to guide development of this still novel form of professional development. The cost-effectiveness of OCs, coupled with the capacity to provide time-flexible participation on a global scale, convinces us that OCs will continue to play a vital role in quality professional development activities.

OCs and online communities of practice are developing in new directions and with such speed that models have little time to formulate before they become obsolete. Nonetheless, we present our model as a first step to a theoretical understanding of this activity. Further research is needed to determine the impact of and best guidelines for OCs for professional development. Future research efforts are required to determine participants' level of commitment, level and benefits of interpersonal communications, professional networking achieved, and the level and effect of knowledge creation in practice. The opportunities provided by OCs for knowledge creation, unbounded by space or time, warrant future efforts to realize the potential of OCs for innovative professional development and support.

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