Faculty Professional Development Online: Ways of Knowing and Ways of Practice

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Introduction

The need to provide a suitable learning community by which faculty can discuss teaching and learning, encourage and support each other and improve their own teaching is critical for both their students' learning and their own professional development. Many questions remain unanswered. Challenges continue to include how to make these types of activities a more regular part of faculty jobs and expectations, how to get people to recognize that these activities are important, and how to provide opportunities for dramatic and substantial change for faculty. Alternate modes of delivery such as online professional development experiences may help if properly designed and implemented. This explains the motivation for a pilot at the University of Wisconsin-Madison to examine and explore the degree to which an online experience could be of value for engineering faculty and their participating institutions in their professional development efforts.

The *Ways of Knowing: Ways of Practice* online experience was a pilot offered during the spring semester 2003 to twenty (20) science, technology, engineering and mathematics (STEM) faculty members from ten institutions.[1] Valuable lessons were learned in terms of future offerings of such online experiences. Recommendations include (1) adapting this model of online professional development as appropriate, (2) building on the lessons gained from *Ways of Knowing/Ways of Practice,* and (3) developing mechanisms to provide faculty and administrators with incentives to better integrate professional development into faculty expectations and workload. This document describes the instructional design, technology selection, and results.

Previous Models

The University of Wisconsin-Madison, College of Engineering, Department of Engineering Professional Development (EPD) has a long and well-established reputation for providing over 400 continuing education programs each year for practicing engineers.[2] One award-winning program is their online Masters of Engineering Professional Practice (MEPP).[3] This program is the model for the Ways of Knowing: Ways of Practice. The audience was different, but the instructional design and technology were similar. Similar to MEPP, the design has

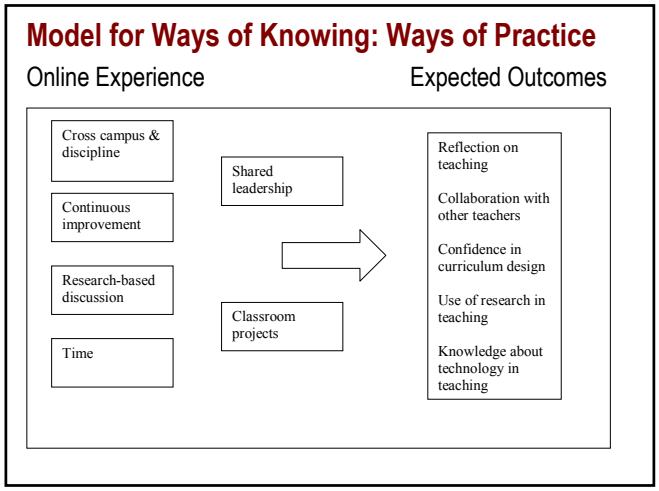
- a preliminary experience online that included Felder's learning style inventory,
- a residential orientation in Madison,
- a semester-long online learning experience, and
- both synchronous (WisLine Web) and asynchronous (WebCT) interactions.

Partnerships: Faculty with Instructional Designers and Technology Partners

The design team consisted of a partnership with the campus-wide Division of Information Technology (DoIT) and included an instructional designer and technology guide, a learning guide, and an evaluation guide. The team of three worked together before, during, and after the semester-long experience. After the framework of the course was established, two faculty members from ten institutions were selected to participate. One faculty member was in engineering and the other was from a related STEM discipline. Everyone met during the three-day residential orientation and became design partners for the online experience. The design team facilitated the first three web conferences on the three core issues: learning, teaching, and assessment. The participating faculty facilitated the remainder of the web conferences. Synergy was the result of such diverse voices in the instructional design.

Goals and Objectives

As a result of the experience, faculty would be able to reflect on and investigate teaching and learning issues; 2) collaborate, discuss issues, and facilitate discussions with other faculty; 3) gain confidence in curriculum development; complete a real-world teaching and learning project; 4) bridge the gap between theory and practice; and learn with and about technology. The figure below describes the main components and the learning outcomes.



What Faculty Say

"I participated because I want to be active in a learning community and have dedicated time for teaching introspection."

"Teaching is not highly regarded at my institution so [I have] few other people to discuss it with – especially others who are excited about it [teaching]."

Engaged Faculty

The twenty faculty members were engaged learners in the semester-long learning experience, in part, because they had helped design it; they used diverse methodologies and technologies as they shared both leadership and tools during their weekly conversations about teaching and learning.

Shared Leadership During the orientation, the group agreed by consensus to the times for two weekly synchronous conversations. Also, during the orientation, faculty from each of the ten institutions identified an issue and date for facilitating the online conversation about the issue. Later, they also identified a reading and other resources for their colleagues to review before the conversation. Issues ranged from problem-solving with computers to active learning to time-effective lab report grading, and conceptual learning.

Shared Tools Most of the faculty's participation was done at a distance, using multiple communication tools. These included mail, email and telephone, and tools developed specifically for online-based cohort communications. These tools were WisLine Web,[4] a browser-based teleconferencing system and WebCT, a course management system. PlaceWare, the web-based visual and interactive component of the WisLine Web sessions has since been purchased by Microsoft and is now named "Microsoft Office Live Meeting." And the WebCT tools used during this online experience are commonly found in other Course Management System applications. The University of Wisconsin-Madison is now implementing a new Course Management System (using Desire2Learn technology).

WisLine Web[4] is a teleconferencing service offered through the University of Wisconsin-Extension. These teleconferences integrated dialog, presentation slides, and interactive tools, which were all used by participants at a distance and in real time. The presentation options included text slides, photographs, live web browsing, polling, application demonstration and sharing, digital whiteboard, and text chat. These tools, combined with live telephone-based audio, allowed the faculty to interact and stay in contact with the other participants and to stay engaged with the content.

Diverse methodologies and technologies: The technologies added to the methods that the faculty used as they designed and implemented a learning plan for their one weekly conversation. Faculty used a variety of active learning methods to introduce their issues including music and lyrics. For example, one team used this theme when introducing a conversation about visualization: "The Good. The Bad. The Pedagogy." They explored websites together using sharing tools and designed and completed numerous polls including concept tests with multiple choice questions about specific concepts. Faculty members were creative; the technology made much possible.

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Integration

Faculty integrated the professional development experience into their daily work and within the technology available to them. The technical requirements to participate in this experience included a relatively recent PC, monitor, and browser (200 MHz, 800 x 600 screen resolution, IE 5 or higher) and a minimum of 56k internet connection. Rarely did faculty miss the weekly web conferences; if they were away from their office, they often arranged to join us from a different remote location. The combination of real-time and asynchronous options

- allowed faculty to participate both on a scheduled basis, and on their own time and
- provided an alternative to short, focused professional development options, such as conferences and seminars.

Finally, the faculty integrated an issue that they wanted to explore into the experience as a research project. All projects focused on pedagogical issues rather than content issues, as expected; that is, participants were interested in methods and activities that would lead to improved student understanding of concepts. Example topics included using a group instructional feedback technique (GIFT), creating and testing a time log to better understand how faculty spend time, and creating and delivering illustrations for better student understanding.

Support

Faculty worked within a supportive environment among their colleagues and with the design team. Having an instructional design and technology expert available to all participants eliminated fears and helped everyone build confidence in using the technology as a teaching and assessment tool. Finally, each participant received $1000 after submission of their final project. While this was an incentive, evaluation data suggests that such a sum is not necessary.

Assessment

The assessment design involved multiple approaches. Key findings show the value of this online professional development experience according to its impact on faculty and its feasibility as an effective method of professional development. For a complete assessment report, see the Ways of Knowing: Ways of Practice website below.[1]

References for Further Information

1. Ways of Knowing: Ways of Practice. University of Wisconsin-Madison. http://www.engr.wisc.edu/services/elc/waysknow.htm, accessed 19 November 2004
2. Engineering Professional Development (EPD). University of Wisconsin-Madison. http://epdwww.engr.wisc.edu/, accessed 19 November 2004
3. Masters of Engineering in Professional Practice (MEPP). University of Wisconsin-Madison. http://mepp.engr.wisc.edu/, accessed 19 November 2004
4. WislineWeb. University of Wisconsin-Madison. http://www.uwex.edu/ics/wlweb/, accessed 19 November 2004