Faculty as a Community Engaged with Ongoing Curricular Development: Use of Groupware and Electronic Resources

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ABSTRACT

This article describes how technology can facilitate faculty engagement in curriculum development, use faculty time efficiently, and ensure program quality. A plan to initiate an accelerated second-degree bachelor of science in nursing option was the impetus for use of groupware electronic strategies to support faculty as valued members of the academic community, engaged in the undergraduate program and its curriculum. This article describes the two Web-based applications (electronic-based strategies) developed: the curriculum development homepage as a collaborative communication tool, and a curricular tracking tool.

How can schools of nursing and nursing faculty most effectively and efficiently meet today’s health care and academic challenges to prepare competent, well-educated graduates? The press of nursing’s growing knowledge base and skills associated with successful entry of graduates into the profession results in increased demands for curricular responsiveness (Bellack & O’Neil, 2001; Johnson, 1995; Lindeman, 2000). Effective planning requires that faculty have a clear understanding of how the specifics of their curricula play out through current courses, as well as access to accurate projections, research, and ideas about educational needs, approaches, and issues. The faculty shortage and increasing numbers of faculty who may teach in various full-time and part-time capacities across educational program levels make it even more difficult for faculty to feel part of the academic community and be current, involved, and productive with curricular issues (American Association of Colleges of Nursing, 1999).

This article describes how technology can facilitate faculty engagement in curriculum development, use faculty time efficiently, and ensure program quality. Our plan to initiate an accelerated second-degree bachelor of science in nursing (BSN) option was the impetus for use of groupware electronic strategies to support faculty as valued members of the academic community engaged in the undergraduate program and its curriculum. This article describes the two Web-based applications (electronic-based strategies) developed: the curriculum development homepage as a collaborative communication tool, and a curricular tracking tool.

Computer-Supported Cooperative Work

Computer-supported cooperative work (CSCW) examines how people can use computers to work collaboratively and, thus, seemed an important potential resource to examine. According to Wolf (2000), a core question of CSCW research is how groupware can be designed to support the important processes of communication, cooperation, and coordination. A CSCW system usually consists of multiple tools such as document repositories, knowledge bases, communication tools, and event/meeting schedulers. Users of CSCW systems generally operate across two dimensions: time and space (The Domain and Goals of CSCW, 1995).

Tomek’s (2000) outline of important features in associated software includes: online communication as a substitute for face-to-face communication, seamlessness, extendibility and customizability, responsiveness and ease of use. Tomek (2000) indicates that the mental models of the users, including their understanding of the system and the task, must be reflected in the system’s design. The mental model needed to design a curriculum is unique and specific. Curricular content “data points” are highly interrelated across both courses and concepts, or topics. In addition, a history of decision making is needed, creating a second, archival time dimension within the system itself.

Curriculum Homepage

The curriculum homepage was designed to provide faculty with...
Faculty members enter the site on the Announcements page. The Speak Out section allows participants to post messages in a threaded discussion forum. The Themes section contains multiple sources and types of information, coded to support rapid retrieval of desired information using themes based on faculty concerns associated with curriculum development and program implementation. Sources of information included: summaries of workgroup meetings; survey results from schools of nursing, employers, and student groups; reference articles and Web sites; and drafts of program plans and course syllabi. Examples of themes for coding included competencies, program evaluation, and student qualifications.

An automatic notification system alerted faculty members when new information was posted to minimize their need to frequently check the homepage. The References section contains a number of course sets. As new courses were developed, a color-coding scheme was used so faculty could see where content from previous course objectives and content were being included in the new option (Figure 2).

The Web-based curricular tracking system uses a competency model to enable faculty to track the placement and levels of the knowledge, skills, and values identified from our curricular framework within and across courses. Thus, faculty members can enter the system at a convenient time and place, and track the placement of a concept or skill across courses in the undergraduate program to determine how, at what level, and where the concept or skill is taught. As illustrated in Figure 3, the system opens with two columns: Courses on the left and Concerns (i.e., knowledge, skills, and values) on the right.

Clicking on a course pulls up the concerns covered there, as shown in Figure 4 (for the course titled N55). Conversely, clicking on a concern lists ready access to information and a means to engage in focused dialogue with each other or specific members of the various planning groups as we developed the second-degree BSN option. To reduce the possible hesitancy of junior or part-time faculty to voice their concerns or questions, the system was designed so faculty could select anonymity and direct where they wanted comments posted (e.g., to the program leader, the faculty core workgroup, or in open dialogue). The main navigation system for the homepage is pictured in Figure 1.
the courses that cover it (Figure 5). This saves faculty time in trying to locate or determine what is being taught in which course, given changes in faculty composition and involvement with courses over time. It also increases the likelihood that students can achieve the objectives of the undergraduate program, as faculty members can more efficiently and purposely provide learning activities specific to the complexity, depth, and scope of expected student performance.

For new faculty, the system facilitates their comfort in the program, since they are not required to have experienced the “history” of a course or concept. For example, new course coordinators can click on a course and view all the content, knowledge, and skills that had previously been included in that course, along with the rationale and any changes over time.

Faculty members can also track the history of decisions, which can foster continued and efficient growth of the curriculum by reducing the likelihood of repeating approaches already studied or making changes without a full understanding of the issues behind the original decision. The history appears in a new window whenever the History link is used, as illustrated in Figure 6.

A potential strength of the system is reducing the risk of unintentional duplication or gaps within the curriculum. Approaches are introduced into nursing and nursing education. Concepts can be added, reorganized or recoded, or deleted, while the history is maintained. Administration of the system occurs in a separate set of password-protected pages that can be accessed by either a single curriculum development leader or a team. Figure 7 shows the screen for adding a new concern, and Figure 8 shows the screen for adding a message about a concern.

A flagging alert system enables areas of curricular concern being tracked for duplication, initial pilot inclusion, refinement, or develop-
ment to be readily identified by faculty members. The Web-based curricular tracking system provides faculty with tools that can facilitate their trial of new learning approaches and avoid a merely additive curriculum, since changes can be more closely monitored to minimize risks to student achievement.

Implementation

The system was developed and implemented via ColdFusion 4.5 Macromedia, a server-based and Web-based scripting environment that is well established on the Web, modestly priced, and readily available to many other educational institutions. Such a system could also be implemented in open source environments, such as php and mysql.

Conclusion

We were pleased with our pilot testing of the development of these systems. The curricular tracking system is currently being examined for use by a coalition of schools of nursing in the northwestern United States, focused on sharing courses, topics, and learning activities specific to care of older adults in undergraduate education. In addition, in fall 2004, the University of Portland, School of Nursing curriculum committee began using the tracking tool with all its usual curricular development and monitoring activities, starting with the undergraduate program.

References