

## University of Delaware's Faculty-IT Partnership: Educational Transformation through Teamwork

by Janet R. de Vry and George Watson

"Establish partnerships." "Make learning more active." "Use technology effectively." These phrases are repeated like mantras in the literature on technology and learning in higher education. However, the practical elements that can effectively link all three principles into a force that transforms learning have seldom been described. At the University of Delaware (**UD**), a grassroots, faculty-led initiative to transform education through active learning has developed in collaboration with the university's teaching, learning, and technology center to create a sustainable model for educational reform. This collaboration between a group of faculty members, energized by a vision for improving learning, and information technology (IT) staff members has been critical to the successful infusion of educational technology on our campus.



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Some elements of our faculty development efforts, and the lessons we learned in the process, may be relevant to similar efforts on other campuses. One key to a strong, successful development program is a core group of energized faculty members committed to transforming learning, regardless of which organization on campus brings them together (Watson, in press). The other key is a faculty technology support unit that shares a similar vision of how learning can be transformed. The technology unit helps faculty members make the connection between their learning goals and the actual technology-enhanced lessons. In the following description of these two groups and their multifaceted activities, we illustrate how the persons responsible for enhancing the curriculum through technology can identify potential campus partners and formulate strategic activities at their institutions.

### **ITUE and PRESENT**

Two major transforming entities were created at UD in 1997, each instituted separately and through different administrative channels. Over the past few years, the leaders of these two organizations have established a significant, sustainable partnership that has impacted hundreds of faculty members and, thereby, many thousands of students.

The Institute for Transforming Undergraduate Education (**ITUE**), a faculty-led development program, helps faculty members move to more active, student-centered forms of learning, particularly problem-based learning (**PBL**). ITUE fellows receive hands-on experience in employing active learning strategies and the effective use of

technology through week-long immersion workshops. **The National Science Foundation's** program on **Institution-Wide Reform of Undergraduate Education** provided the initial funding for the ITUE.

Practical Resources for Educators Seeking Effective New Technologies (**PRESENT**) is UD's teaching, learning, and technology center; its staff members report to the University's vice president for information technologies. The center resembles a collaborative classroom setting and includes workstations and equipment for exploring uses of technology in teaching. Consultants help faculty members make the connection between learning goals and appropriate technology.

The ITUE generates an informed clientele via workshops and individual mentoring on and off campus. Sustained follow-up support by PRESENT staff ensures the successful implementation of ideas into finished course materials developed with technology. Faculty participants are **motivated** to improve learning and to apply technology to that process, and they are supported quite effectively by the faculty/IT partnership. In 1999, **TIAA-CREF** awarded the Theodore M. Hesburgh Certificate of Excellence to UD in recognition of its faculty development and transformation efforts in undergraduate education. Since 1997, more than 200 ITUE fellows have been named at the University of Delaware, with 100 additional fellows named from institutions in the US and another 50 fellows from international institutions. The partnership has blossomed beyond the confines of the UD campus to impact a global community.

### **Active Learning Strategies Leveraged by Technology**

The underlying philosophy of the ITUE is that undergraduate courses should help students develop the attributes most desirable in college graduates. Specific goals, and the role of technology in attaining them, are outlined in **Exhibit 1**. Active learning strategies (PBL in particular) blend nicely with the promise of technology in achieving these goals.

Undergraduate courses should be student-centered, encourage students to "learn to learn," apply technology effectively to enhance learning, and provide opportunities for a variety of learning experiences. The goal of the ITUE is to provide faculty members with the training, resources, and support needed to transform their courses along these lines. The goal of the PRESENT staff is to achieve ITUE goals through the effective application of technology.

The underlying philosophy of PRESENT is that the identification of learning goals should always precede the application of technology. Although faculty members initially come to the PRESENT center for technical assistance, they receive educational expertise as well. Over half of the PRESENT staff members have a master's degree in education and significant classroom experience. If a faculty member articulates goals only in terms of course content, the staff advisor subtly suggests an expansion of those goals to include broader issues, such as the development of communication and critical thinking skills and the ability to work cooperatively with others. In developing an active learning course, for example, it becomes important to think creatively about the variety of ways—often effectively facilitated through technology—in which students can interact with the faculty member, fellow students, and the course content.

### **Collaboration for Quality Technology Development Strategies**

Collaboration between the ITUE and PRESENT began naturally: Institute leaders needed help with the technology portion of their training programs, so they sought out the expertise of PRESENT staff members. Since the beginning, representatives from both

centers have taught side-by-side in the week-long ITUE workshops. Meanwhile, many PRESENT staff members attend the PBL sessions so that they can reinforce the teaching strategies advocated by the ITUE. When the Institute training sessions end, PRESENT staff members remain available to consult with faculty members and reinforce not only their technology initiatives, but also active learning strategies. In the consulting and training seminars that they offer year-round, PRESENT staff members provide examples of applying technology to PBL when appropriate.

The ITUE and PRESENT maintain separate Web sites with links to each other's programs. ITUE programs include faculty-led training sessions in a comfortable and collegial learning environment. Throughout the year, experienced ITUE leaders serve as mentors to those faculty members new to problem-based learning. In turn, PRESENT provides a faculty-friendly location where ITUE fellows can get in-depth assistance from staff members who understand learning goals and faculty objectives. Both the ITUE and PRESENT highlight faculty achievements—the former through brief **presentations** to new fellows and the latter through regular showcase events and in-depth online profiles. On the PRESENT **Faculty Showcase** page, for example, users can search for ITUE fellows and see how they use technology to enhance active learning.

Looking beyond the UD campus, the ITUE and PRESENT have promoted their partnership as a model for others throughout the country. With Julius Bianchi of **California Lutheran University**, we have presented interactive workshops that encourage the use of both PBL and technology at numerous meetings of **EDUCAUSE**, the Special Interest Group on University and College Computing Services (**SIGUCCS**), and the North East Regional Computing Program (**NERCOMP**). We typically adopt a problem-based learning approach that requires workshop participants to move through the stages of a challenging task related to faculty development. In one **case study**, participants role-play as administrator, faculty senate leader, learning center director, instructional technology director, faculty member, and undergraduate leader in addressing the infusion of technology in classrooms at a typical institution of higher education. They identify priority objectives for a faculty development program, design a program to attract faculty participation, and outline measures of a successful program. In addition to the multistage problem, we present exemplary approaches and faculty initiatives to demonstrate how technology is used on our campuses to achieve learning goals and best practice in undergraduate education.

### **PRESENT as a Collaborative Workspace**

The physical arrangement of PRESENT reinforces collaborative principles by emphasizing flexibility and multi-person workspaces. Traditional computing labs tend to seat one person to a computer, and traditional classrooms tend to make use of fixed seats that face the front for lecture-style presentations. The **entrance to PRESENT** leads immediately to what appears to be a single round table. Actually, the unit is a hexagon that accommodates up to six people; it is formed by two separate tables that, by virtue of being on wheels, can be rearranged easily. Initial discussions take place around the hexagon, with the focus on the participants and their learning goals rather than the equipment. Connections for a projector, Ethernet, and electricity are built inconspicuously into the floor so that a laptop can be attached and projected at an appropriate time during the discussion.

PRESENT reinforces some principles already established in the 10 other **PBL classrooms** on campus, all of which contain hexagonal tables and movable chairs. In spring 2001, internal grant funds were used to outfit two of these classrooms with **wireless carts** to bring technology into the PBL environment in an unobtrusive way.

This arrangement allows students to collaboratively solve problems outlined on the Web or to find Web resources to enhance their work.

## Recent Projects

UD adopted **WebCT** as its course management system in July 2000. One year later, the adoption rate by ITUE faculty fellows was double that of the general faculty body. From the beginning, the use of WebCT has been linked to active learning strategies at UD. PRESENT currently offers six half-day seminars to help faculty members learn how to use WebCT tools. Increasingly, IT training includes active learning components so that faculty members can participate—as students would—in an actual class and suggest ways in which the tools should be used to achieve the desired learning goals. For example, in a seminar entitled "Using the Student Presentation Tool in WebCT," we divide the participants into groups within a WebCT course. Each group has a unique set of questions to answer by going on an Internet-based scavenger hunt. Group members use the presentation tool to post their answers online at the end of the exercise. This same technique could be used with any simple PBL problem.

In January 2002, PRESENT staff members and ITUE fellows and leaders taught side-by-side in the **WebCT/Active Learning Institute**. ITUE contributors illustrated how they use specific tools in their classes and, together with the PRESENT staff, led participants through exercises designed to connect those tools to their own courses. In a **workshop** on WebCT communication features, Valerie Hans, a faculty member in sociology and criminal justice, presented a problem related to the suspected terrorists detained at Guantanamo Bay. The participants were divided into groups within a WebCT class. In one exercise, they used the online discussion tool to consider various options for justice; in another exercise, they used the same tool to formulate questions for an expert in international terrorism. Representatives of each group posed these questions to Professor Mark J. Miller, who served as our expert on the topic, in a WebCT chat room at the end of the session (Sicuranza, Hans, Kral, & Watson, 2002).

With the help of PRESENT staff members and student assistants, a number of ITUE fellows have intensively transformed their courses through the appropriate use of technology; 18 sample projects are listed on a joint **Faculty Showcase** page. Some of these projects were highlighted in another collaboration between ITUE and PRESENT representatives: an **afternoon session** on technology-enhanced leaning at the January 2002 Faculty Teaching, Learning, and Technology Institute at UD.

In June 2002, the ITUE hosted an international conference on problem-based learning. Once again, PRESENT staff members supported the conference technically and co-presented with ITUE leaders. PRESENT representatives also conducted a session on matching PBL goals to course management systems. This is an especially important topic given that course management systems are pedagogically neutral. Faculty members must tailor their use of a CMS if they want to enhance their use of PBL.

## Conclusion

Educational transformation requires more than excellent resources and funding; vision and institution-wide cooperation are essential. By partnering with a group of faculty members already energized by specific learning goals, the educationally savvy technology staff at UD has begun to move beyond helping individual professors to transforming an entire campus. The efforts of one group reinforce the efforts of the other, and each



organization identifies with the objectives of the other. Partnerships such as this one, sustained by complementary aims and activities, are essential to any implementation of technology-enhanced curricular reform. Administrators, librarians, faculty members, and others charged with effectively using technology to support learning should identify potential partners on their own campuses. By adopting and adapting some of the strategies and programs described here, such groups can nurture a synergistic relationship that ultimately benefits the entire institution.

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