ABSTRACT

Every campus technology initiative stems from a need or a good idea. How can we know that our efforts are meeting that need or that our "good ideas" are paying off and worth further support? How can we know where to "tweak" programs for increased effectiveness? Evaluation is the answer. Program evaluations can focus on process, goals, or outcomes. Ideally, they are designed as a new project is conceptualized; often they are not. This session will discuss the different types of evaluation and feature, as a case study, an initiative to enhance student learning through providing faculty with laptop computers and associated training.
INTRODUCTION

Despite the millions of dollars and staff hours devoted to introducing new technologies into postsecondary classrooms, the preponderant method of college instruction remains the lecture. Most faculty hold tight to the model of teaching which requires them to stand before the masses, pronounce their wisdom, and test whether their students have captured the meaning of their words.

Given their huge investment in technology, many universities are now turning their attention to the question of “what difference does it make?” Steve Ehrmann (2001) notes that it is “only in the past decade many institutions had enough infrastructure, enough trained faculty, and enough interested students to justify thinking about technology playing a role in programmatic and institutional improvement efforts … The last decade has also seen a considerable increase in societal interest in assessment. The two shifts are not unrelated. Technology adds to both the cost and uncertainty of improvement efforts. Assessment can help to decrease risks while providing guidance for efforts to make better use of time and money.”

How do we best encourage faculty to experiment with new instructional methods and models? And how do we know that our efforts at encouraging innovation actually work? This paper attempts to answer these two questions and presents as a case study a program designed to encourage faculty to incorporate technology into their teaching at the University of New Orleans in New Orleans, Louisiana.

Encouraging Innovation
To help faculty adopt new instructional strategies first requires raising their awareness of how students learn and modeling alternate instructional strategies. Supporting their moves to teach differently involves helping them develop skill with using the methods and assisting them know when to apply which method to optimize student learning (Joyce and Showers, 1988). The process is further complicated when staff are expected to use technologies with which they are unfamiliar.

Any attempt at encouraging innovation should follow these four principles:

1. Efforts at encouraging change must be designed in context with the institutional framework and the disciplinary and pedagogical interests of the faculty.

2. Teachers learn new strategies just as their students learn new concepts and skills. They will learn in different ways, develop idiosyncratic understandings, and prefer different types and levels of learning assistance.

3. To be most effective in implementing change requires that a support team to “be there” when it happens. (Joyce and Showers, 1988). Demonstrations, workshops, conferences, mentoring, demonstrations, journal articles, feedback and simulations are much more effective when they are accompanied by a professional support team who is alongside the faculty as they attempt new instructional strategies.

4. Educational change is a process not an event. For any innovation to become *de rigueur* takes time. Teachers must have time to try it out, become comfortable with it, tweak it to fit themselves, and experiment with alternate applications.
The Concerns Based Adoption Model (CBAM) is often applied to the problem of determining when and why faculty become interested in adopting technology in their teaching. This model, developed by Hall and Hord in 1987, is based upon the idea that people considering or experiencing change move through a seven-stage process that evolves from a total lack of awareness through questioning the personal impact of making the change to a consideration of the impact of the change on others and possibilities for further refinement of the innovation. It typically takes teachers three years to move through the entire process (National Academy of Sciences, 1998).

The concerns model has major implications for professional development. The types of professional development experiences appropriate for faculty just learning about the existence of a new technology is quite different from those appropriate for those who are eager to give it a try. Table 1 delineates appropriate staff development opportunities for each stage of concern. It is important to note that the experiences list is cumulative. For example, faculty in the Collaboration stage of concern may still be interested in workshops, incentives, and classroom research opportunities.

Table 1. Matching Faculty Stage of Concern with Staff Development Experiences

<table>
<thead>
<tr>
<th>Stage of Concern</th>
<th>Statements Indicative of Stage</th>
<th>Appropriate Development Activities</th>
</tr>
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<tbody>
<tr>
<td>6. Refocusing</td>
<td>How can I refine my work to make it better? Where else could I apply this?</td>
<td>Collaboration with instructional designers, assistance with program evaluation</td>
</tr>
<tr>
<td>5. Collaboration</td>
<td>Who else is using this? How can I share my experiences with others?</td>
<td>On-campus or electronic discussion groups, conference attendance and presentations</td>
</tr>
<tr>
<td>4. Consequence</td>
<td>What difference is this making for my students?</td>
<td>Help designing classroom action research projects</td>
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</tbody>
</table>
3. Management | How am I going to find the time to do this? Where can I get the equipment? Are there people who can help me? | Provision of incentives such as released time, equipment grants, student assistants, summer pay for media development or in-depth training
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2. Personal | Can I do this? How will this affect me in terms of my quest for tenure? | Hands-on workshops, how-to documents, assurance of institutional support for the activity
1. Informational | I’d like to know more about this. | Exhibits, demonstrations, newsletters
0. Awareness | I know nothing of this. This doesn’t interest me. | Advertisements promoting events and opportunities

Assessing Efforts at Encouraging Innovation

To determine how successfully one’s efforts are working requires stepping back long enough to look at the project objectively. This is best done through a formal plan of evaluation. The evaluation can look at the program in terms of:

- participant perceptions (Did they think it was useful?),
- the program’s effectiveness (Did it accomplish what it set out to do?),
- its efficiency (Did its cost in terms of dollars, time, and human resources justify its benefits?), and/or
- its impact (Is there evidence of sustained change? What are its long-term benefits or consequences?)

Ideally, the evaluation plan is designed while the program itself is in the planning stages. Often, it is not and project managers are faced with figuring out how to answer the questions outlined above.
The remainder of this paper will address the three types of program evaluation described by McNamara (1998): goals-based evaluations, process-based evaluations, and outcomes-based evaluations. Goals-based evaluations are concerned with whether or not the program’s goals and objectives were met. They may also consider whether or not the goals should be modified, whether resources available are adequate for accomplishing the goals, and if there should be changes made in the established timelines and program priorities.

Process-based evaluations focus on the means and methods by which a program operates. They may be looking for inefficiencies or systems that work smoothly and could be replicated elsewhere. Process-based evaluations may consider how faculty are trained to use the technology, how faculty interact with technology support personnel, and any suggestions from participants regarding how the program could be improved.

Outcomes-based evaluations are focused on the impact of the program. Is the university community benefiting? Is there evidence of changed instruction, improved student learning? Is the faculty eager to adopt additional technology-based methods?

There are many books and online resources available on methods for gathering and analyzing evidence as part of the program evaluation process. Two excellent online resources are the *Basic Guide to Program Evaluation* (McNamara, 1998) and *Taking Stock* (Bond, Boyd, Rapp, 1997).

CASE STUDY: THE FACULTY INITIATIVE FOR TECHNOLOGY IN TEACHING

Faculty and administrators at the University of New Orleans (UNO) have long recognized that today’s technologically advanced world requires individuals in all
professions to have computer and web-based experiences that enable them to compete in the global workplace. However, state funding for higher education has never been able to keep up with the incessant demand for more and greater computing power.

Two major initiatives which allowed UNO to provide its students and faculty with the computer equipment and infrastructure needed were the establishment of a Student Technology Fee and the creation of the Faculty Initiative for Technology in Teaching (FITT). In 1997, UNO’s students agreed to charge themselves an extra $5.00 per course credit to fund a new student technology fee. The bulk of this money goes to creating and maintaining open computer laboratories and multimedia-capable classrooms. Students are well aware of where this money goes (each laboratory computer is tagged with a label that says “This computer paid for by your Student Technology Fee”) and continue to support the fee.

Most UNO faculty have desktop computers in their offices, however the University recognizes that it is through the use of mobile computing that faculty can seamlessly bring their computer-based lessons into the classroom and maintain communication with students outside of class. The FITT project was designed to get laptop computers and software applications appropriate to their technology needs into the hands of faculty. It was originally established as a two-year demonstration project (June 1998 – June 2000) with the following agenda:

- Providing at least 100 UNO faculty members with laptop computers,
- Offering technical support, faculty development seminars and creating a mentoring component designed to enable these faculty to incorporate technology into their teaching, and
• Showcasing the efforts throughout the community by requiring faculty participants to share experiences with both their faculty peers and the regional education community.

The project’s long-term goals are to enable the entire faculty to have the equipment and training necessary to incorporate state-of-the-art technology into their teaching and to develop a model that could be replicated at other universities.

Faculty applied to the program by submitting a proposal which detailed their current teaching and outlined why and how they would use the new equipment and skills if they were selected. Those who were awarded laptops (approximately 20 computers for each competitive cohort) were required to sign a contract which stated they would retain use of the laptop computer and software as long as they agreed to attend a series of workshops on enhancing teaching with technology, create a website in support of their teaching, demonstrate to their peers how they use technology in their teaching, and fulfill a community service component.

Evaluating FITT

FITT has become institutionalized within the university. It is extremely popular with faculty and is the primary means by which they can acquire personal access to laptop computers and software for their instructional needs. Originally
funded through a one-time private donation, FITT is now funded through the normal university budgetary processes.

Though careful records have always been kept of the number of laptops awarded and we believe the program has elevated the standards of instruction by infusing technology skills into the classroom, it is only quite recently that the University has taken that step back to look at the project in terms of its goals, processes, and impact.

Goals-based evaluation. FITT has clearly met its goals of providing faculty with laptop computers, software applications, and technical support. Close to 800 training workshops have been offered to address FITT faculty needs in the areas of software usage and multimedia and web development. As of Fall 2002 eleven cohorts of faculty have been awarded laptops. These cohorts consist of 239 individual faculty members from 33 departments representing all seven colleges and approximately one-half of the entire population of full-time faculty. (A few of the faculty in the early cohorts have received a second laptop so that they could remain up-to-date with their computing needs.)

However, despite their contractual obligations, there is concern that the participation rate of FITT faculty in training and mentoring opportunities has not been maximized. FITT-related workshop attendance has been on the decrease and there have been challenges encountered in soliciting volunteers to lead Teaching Collaboratories (workshops in which they demonstrate to other faculty how they use technology in their teaching). Beginning with the Fall 2002 cohort,
this issue is being addressed by reframing the contractual expectations of faculty, as outlined in the section below.

As for offering FITT as a model replicable for other universities, the project itself and some of the work of faculty participating in FITT have been presented at regional conferences, specifically the Teaching in Higher Education annual conference sponsored by Louisiana State University. It is not known if individual faculty participants have presented or authored journal articles on their FITT-enabled teaching methods.

*Process-based evaluation.* Formative reviews of the proposals submitted and faculty behavior after being awarded the laptops have resulted in two changes. First, the call for proposals has always been quite generic. Faculty could propose to do anything to incorporate technology into their courses as long as it was pedagogically sound. Along with the general call, there have been a number of calls targeted at expanding the use of specific technologies (such as Blackboard) or designed to support specific groups (such as freshman students) or programs (such as teacher education).

A more recent change (Fall 2002) has been made to address the problem of many awardees not fulfilling all their contractual obligations. There has been a reluctance to follow through with the consequence of taking away the laptops from faculty who did not submit a written report on their work or who have been unwilling to participate in training and mentoring activities.
The change is that once faculty have received their laptops, the computers stay with them as long as they remain working for the university. However, faculty will not be eligible for a computer upgrade unless they submit an online report of progress. Further, they are no longer required to participate in the training and mentoring activities. Instead, in recognition of the extra time required for this work, a financial reward is available to those who do participate.

To qualify for the $750 stipend, FITT recipients must: a) lead a technology-in-teaching workshop or demonstration for their departmental colleagues or other educators from the campus or regional community and b) document how they have modified their teaching through the use of technology by preparing an online course portfolio which is accessible through the FITT website.

*Impact-based evaluation.* A key impact the FITT program has had on the university is in its strategy for equipping classrooms with multimedia technologies. While there is a program in place that will eventually allow for the permanent installation of data projection equipment with Internet connections in all classrooms, in most cases computers will not be part of the teaching station. Having faculty bring in their personal laptop computers means that they can configure their machines to meet their needs without disrupting the person coming in to teach who has a different expectation of what software and what user interface should be on the machine.
To date, there has been no formal study of the impact FITT has had on the teaching and learning environment at UNO. However, the Center for Excellence in Learning and Teaching, in cooperation with University Computing and Communications, will be undertaking such a study during the Spring 2003 semester. Plans for that study include:

- Surveys of all faculty who have been awarded laptops through the FITT program
- Review of Blackboard websites, analyzing the types of instructional materials created with FITT support
- Focus group interviews with faculty who have made major modifications in their teaching
- Surveys of students enrolled in FITT-supported classes

References


