

INTERESTING PRACTICES AND BEST SYSTEMS IN FACULTY ENGAGEMENT AND SUPPORT

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(Author's Note: This article represents the final version of a paper that was first developed for an NLII Focus Session held in Seattle in February 2000. The author is one of two Fellows working with the NLII for the 2000 calendar year. He is not an "entrepreneur" in the area of technology-enhanced teaching and learning. In fact, he fits in very well with the characteristics of "second-wave" faculty that are described in the following paper. His observations, as will be noted, have a decidedly "faculty-oriented" focus.)

Alan Kay, a member of the 1970's Xerox team who went on to create the Apple Macintosh, offered an insightful new definition of "technology" in 1996. He stated that technology was "anything that isn't around when you were born."¹ Or, as Jason L. Frand noted: "If you can remember using your first one ever, it's technology."² This interpretation of the meaning of "technology" offers two important insights for higher education at the beginning of the new millennium. First, for every active faculty member at every institution of higher learning today, computers are technology. While there is considerable variation in the degree to which each faculty member has assimilated computer-based applications into his or her professional work, the fact remains that each of us has had to learn and adapt to new ways of doing our work. The second implication of this definition of technology is even more important: to an ever-increasing degree, for the students who are entering the doorways of higher education institutions, computers are not technology. For them, computers and all of their associated applications, existed in the world they were born into; computers are as much an accepted part of their environment as were telephones to the faculty who teach them.

The situation produced by these two different orientations towards "technology" is unprecedented. While faculty are still in varying stages of learning and incorporating new ways of presenting information to their students, those students not only possess the skills necessary to utilize these new communication forms, there is an ever-increasing expectation on their part that these new communication paths be used. Faculty now find themselves in an environment where the use of new technologies is demanded by those who oftentimes possess a superior understanding of their use. While faculty can see the benefits of adopting technology into the teaching and learning process, many are uneasy about doing so given the changing

¹ Quoted in Jason L. Frand, "The Information-Age Mindset: Changes in Students and Implications for Higher Education," *EDUCAUSE Review*, V. 35, n.5, September/October 2000, p.16.

² Frand, p. 16

nature of their audience. Looking foolish or incompetent in front of their students is an anathema to faculty.

Higher education administrators must understand the challenges presented to faculty by the revolutionary changes being made by the new teaching and learning technologies and by the pressures created by the new students entering the academy. Administrators must realize that faculty vary considerably in both their abilities and their attitudes toward the new technologies and that institutional-based attempts to engage the faculty must take these variations into account in order to be successful. This paper examines this variability in some detail and presents some strategies that administrators can use to successfully engage faculty and to effectively transform teaching and learning using technology. The paper ends with a compendium of “interesting practices” used by a wide variety of institutions across several dimensions of techniques of faculty engagement. Specifically, this paper will present the following topics:

- A brief discussion concerning the differences in faculty development issues when comparing faculty “entrepreneurs” with “second-wave” faculty;
- An examination of the resources, incentives, and benefits identified by the “best practitioner” entrepreneurs as important in incorporating new learning technologies into their course work;
- Some possible reasons why potential “second-wave” faculty are hesitant to adopt new learning technologies and why some “interesting practices” may only be effective within certain types of institutional cultures;
- A strategy which administration can use to identify what pattern of the four faculty “types” exists within their institution; and
- A brief description of some “interesting practices” designed to facilitate the engagement of the “second-wave” faculty member in these new paradigms of learning in the following areas:
 - training
 - grants/support
 - “just-in-time” technical assistance
 - information exchange
 - assessment.

I will argue, based on this inventory, that institutions that are preparing for transformation, should adopt a “best systems” mentality, rather than concentrate on specific practices.

Distinguishing Between Entrepreneurial Faculty and “Second-Wave” Faculty

To begin, it is important to note, as Brown and Floyd do, that an “enabling environment” is a precondition to institutional change. These environments include the following: universal student access, reliable networks, multiple opportunities for training and consulting, and “a faculty ethos which values

experimentation and toleration of falterers.”³ Without these preconditions, even entrepreneurial activity on the part of self-starters is difficult, if not impossible. Even when these conditions are in place, transformation is neither easy nor automatic. The first stage of transformation is marked by the appearance of “first-wave” adopters, or “entrepreneurs,” who seek out the resources and the expertise to implement their own, personal commitment to incorporating technology into their own learning environments. The second stage, and the one of most concern to us for it represents the first significant turn toward the transformation of the institution, occurs when faculty who have strong commitments to quality learning, but who are wary of the new technologies, come to perceive that participation in the new learning environments is an opportunity, not a threat.

These two groups of faculty, while united in their commitment to quality learning environments, are very different in both their technical capabilities and their attitudinal readiness to embrace these new technologies. It would be a serious mistake for administrators to make allocation decisions based solely on the characteristics of the “entrepreneurs,” since their needs and their motivations can differ greatly from the “second-wave” faculty. To illustrate this point, the next section examines the needs and motivations of faculty identified as members of this “entrepreneurial” group.

Entrepreneurs: Resources, Incentives, and Rewards

In 1997, *Yahoo* developed its first list of “Most Wired Campuses.” While there still exists a debate over the validity of the categories that produced these rankings,⁴ it is probably safe to say that the schools listed feature environments that are more conducive to instructional technology “entrepreneurs.” In an attempt to better understand what it was that these instructors are doing, David G. Brown contacted the Provosts and Deans of thirty-six of these “most wired” campuses and asked for recommendations of names of instructors who were using innovative technology applications in their course work. Brown then invited these scholars to submit vignettes that resulted in the book: *Interactive Learning: Vignettes from America’s Most Wired Campuses*⁵. The book features ninety-three case reports on the use of classroom, and out-of-classroom, technologies and is cross-indexed according to discipline area, computer tools and techniques, and educational beliefs. The articles also attempt to bring in data and/or author impressions regarding the assessment of the impact their innovations brought to the learning environment. Overall, this volume represents a very useful and informative survey of the great variety of application approaches and innovation that already exist.

³“Best Practices in Faculty Development,” David G. Brown and Elson S. Floyd, *Multiversity*, Winter 1999 (<http://www.can.ibm.com/he/multiversity/Win99/bestpractice.html>)

⁴ See: Young, Jeffrey R. “Colleges Question Data Used by ‘Yahoo’ to Rank ‘Most Wired’ Campus.” Chronicle of Higher Education (May 9, 1997): A29; Florence Olsen, “Academic Technology Group Enters the Fray Over What Makes a ‘Wired’ campus”, Chronicle of Higher Education (March 9, 2000).

⁵David C. Brown (ed.), *Interactive Learning: Vignettes from America’s Most Wired Campuses*. Bolton, MA: Anker Publishing Co., 2000.

The book concentrates on the descriptions of the techniques themselves and less on the resource and reward environments that brought them into being. Going on the assumption that the book's educators represent a selection of "early starters" or "entrepreneurs," we were interested in the characteristics of the resources, incentive, and reward environments that accompanied their "best practices." We contacted thirty of the book's authors and asked them: 1) What the source of the resources for their innovations was; 2) What the incentive for innovation was; and, 3) What benefits, beyond the educational benefits for their students, did they receive from implementing learning change through instructional technology. The results from this "survey," which should be taken as suggestive not scientific, are discussed below.

1- Resources - About a third of the respondents stated that their innovations were totally self-contained and required no additional resource support. The remaining respondents cited five areas that provided support necessary resource support. *Departmental Support* came mostly in terms of additional hardware and was cited by only five of the respondents. *College Support*, cited by eight respondents, consisted of hardware provision and classroom renovation. *University Information Technology Centers* were identified as important resource providers by a third of the authors. These centers provided resources including full funding of projects, training for students and faculty, provision of GA's to the project, and ongoing technical support. *University-Level* support was noted by more than a third of the respondents as well. This support came in the form of summer stipends, project grants, hardware and software, GA support, grants, and seed monies. Finally, *Outside Agencies* were identified by six of the authors. Three authors stated that the outside funding covered 100 percent of their resource needs. Two agencies identified were NSF and an Alumni gift that was targeted toward learning innovation. Overall, there was clearly a lack of concern over the resource issue from this group of entrepreneurs. For those who did not have the personal resources or expertise to achieve their projects' goals, their environments appear to have provided them with the necessary training and/or equipment.

2- Incentives - Beyond the basic question of resource support, authors were asked to detail the incentives offered by their universities (the source unit was not specifically asked for) to incorporate learning technologies into their courses. The overwhelming (70%) response was that there were no outside incentives provided to initiate these changes. Almost to a person, the central reason given for undertaking these innovations was that it "was the right thing to do" or "the students deserved to have the quality of their education improved." Several authors indicated that there were actually disincentives that marked their work. One wrote:

"In fact, since no release time was provided and the annual merit raise procedures do not give weight to this kind of development work, you might say that there were disincentives."

A handful of authors did cite incentives provided by their institutions. These incentives included: a promise that such work would figure in the tenure process, summer salary, and new equipment. For the majority, innovations were pursued because the resources were there and the potential benefit to the student was high.

The importance of student-centered incentives was reiterated in a best practices study conducted by the

American Productivity and Quality Center, to discover the best organizational strategies for helping faculty members integrate technology into their teaching. The study indicated that: “Faculty incentives come in many forms. Among the most powerful motivators is a newfound pride in teaching.”⁶

3- Benefits - Finally, the authors were asked to identify benefits gained from the project, apart from those experienced by the students in their courses. Again, about 65% of the authors stated that student benefit, and the attendant personal satisfaction of a job well done, were the only rewards for their innovations. Reading the responses, one gets the impression that the authors were quite disappointed in the lack of official recognition and the lack of colleague interest in their innovations. As one author stated:

“The PR Office wrote the project up for a paragraph in the alumni magazine, but there was no official recognition. Quite the contrary, I got the impression that those evaluating me considered the project an oddity and a possible waste of my time, before they forgot about it completely.”

For those citing benefits, three identified extensive University publicity given to their projects, one stated that a salary increase was tied to their work, four believed that their receipt of a teaching award was connected to their work, and three moved into University positions dedicated to the spread of interactive learning. One of these wrote:

“Partly as a consequence of...[my work]..., I’ve shifted from my faculty role to an administrative role split between faculty development and learning technology, and one distinctive feature of my work in that role has been a very strong prejudice against special incentives and in favor of authentic, routinizable, scalable support. In my view, this is a very pro-faculty position, since nearly everyone I know who took on technology projects under the lure of special incentives found that they ended up with large undocumented increases in workload, generally with no way to get out from under.”

From this brief examination of our sample of “entrepreneurs”, several observations can be put forward:

- While they work in more technologically supportive environments, the impetus for their enterprise is internal;
- They share a strong interest in bettering the quality of the education delivered and the learning produced;
- They possess enough expertise to give them the confidence to proceed;
- Standard academic incentives did not play a key role in their enterprise;
- They did not receive substantial returns on their enterprise from their institutions;
- Their expressed disappointment may influence the extent to which they will continue their transformations and, perhaps more importantly, share their positive experiences with their colleagues.

⁶For the Executive Summary of this report, “Today’s Teaching and Learning: Leveraging Technology,” see: <http://www.store.apqc.org/cgi-bin/vsc.exe/Jacket/CMTEACHFID.htm?E+Bookstore>

Clearly, if faculty ranks consisted solely of the types of educators identified above, the revolution in educational transformation could be easily accomplished. These scholars are in environments that allow access to the resources necessary to transform their teaching methodologies (which, in some small way provides some validation to the Yahoo ranking system) and proceed to do so regardless of the fact that neither the antecedent incentive structure nor the benefits produced by the transformation seem to be present. As evidenced in their vignettes in Brown's book, the real incentives here are rooted in the scholars' commitment to improving the learning opportunities available to their students. The benefits, as seen in their individual "Lessons Learned" sections of their vignettes, are expressed as the satisfaction of having something valuable done right. But, as we know, these educators do not represent the mainstream but, rather, are at the vanguard. Therefore, our next question is: Who is next?

Engagement and Support for "Second-Wave Faculty"

Having looked at some of the characteristics of "self-starters," we turn to a consideration of those faculty who need a different set of engagement criteria than those discussed above. Four possible sources of hesitancy are:

- **Fear of the Unknown** - Faculty, especially older faculty, are quite used to being in control of their subject matter, and in the way they present it. Adopting new technological forms of presentation necessarily demands a learning curve, the dimensions and length of which is unknown to them.
- **"If it Ain't Broke..."** - We have encountered many faculty who excel in "face-to-face" forms of learning but who resist the new technologies. They offer at least three arguments in support of their attitude. First, if they are doing a superior job already, why change? The second reason is more pragmatic: they know that they are good educators now, but there is no assurance that this success will translate across forms of presentation. Finally, faculty are fearful of a failed attempt in transformation resulting in an entire class of victims, as opposed to educated students.
- **"We're All Alone in this Together"** - Unlike the "entrepreneurs," potential second-wave faculty will demand more "user-friendly" levels of institutional support. The greater the apparent effort to adapt, the more likely that the first two reasons above will come to dominate the faculty's thinking.

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- **“Know Thyself”** - Adoption to new teaching environments represents a major commitment on the part of the faculty member to re-evaluate their own personal approach to learning. As Tony Bates observed: “...some basic understanding of the teaching and learning process, and in particular the different kinds of teaching approaches and the goals that they are meant to achieve, need to be understood.”⁷ It is a basic fact that many of the best teachers possess natural communication and information management abilities that, for many, are assumed rather than the product of intensive self-examination. One requirement for transformation involves coming to grips with how the new technologies can enhance learning objectives. The problem is that many successful teachers have never engaged in this form of articulation and self-evaluation and they may be disinclined to do so.

The second-wave faculty described here are not hesitating due to the lack of university rewards for faculty transformation and learning innovations. They share the first-wave faculty’s commitment to quality learning, but are more risk averse.⁸ A cardinal rule for this group is: adoption of technology for teaching and learning by second wave faculty is inversely proportional to the effort they must exert. They want to focus on teaching and learning, not on technology issues. It is up to higher education administration to create an environment that is both supportive and risk reductive.

There exist two other faculty “types” that must be taken into consideration prior to system-wide transformation initiatives. The third faculty “type” is labeled “careerists.” As universities change their reward structures in the tenure and promotion process, this third-wave of faculty will emerge - those who see adopting as a way to advance their professional careers. This faculty member is one who will adopt the new technologies if and when he/she sees some professional reward for doing so. This faculty member’s motivational structure is tied closely to the university’s reward structure. When adoption of new teaching and learning techniques is seen as having a positive impact on tenure, promotion, and/or salary decisions, this faculty member will be more willing to transform. The fourth type of faculty, which I have labeled the “reluctants”, is the one who is either computer illiterate or who firmly believes that traditional models of learning are superior.

While there are numerous examples across the nation that have shown that it is neither time-effective nor cost-effective to attempt to incorporate the reluctant into institutional transformation, there is a very important human factor to consider when dealing with these individuals. With the incorporation of the computer into university research in the seventies, many faculty, especially those in the social sciences, found that the type of research that they had done in the past to establish their professional careers was no longer acceptable to the professional journals. The shifting of emphasis from teaching to research during this period further exacerbated their difficulties. Universities of the time offered little in support of these

⁷Tony Bates, Managing Technological Change: Strategies for College and University Leaders. San Francisco: Jossey-Bass, 2000. pp. 102-103.

⁸See: William Geoghegan, “Instructional Technology and the Mainstream: The Risks of Success,” in Diana Oblinger and Sean Rush (eds.), The Future Compatible Campus (Bolton, Mass.: Anker Publishing, 1998)

mostly older faculty and, as a result, many sought early retirement and/or ended their careers on bitter notes. There is a high probability that we shall see a similar process emerge around the issue of the adoption of new technologies. As the reluctant's colleagues either bring in or adopt the new technologies, and as students come to expect them, faculty will face increased pressure to use the tools available to them to provide teaching strategies that accommodate multiple learning styles. If they do not respond to this pressure, the result will be the faculty member's being disadvantaged at the time of annual reviews. While the decision not to adopt new forms of presentation is, at its most basic, the choice of the faculty member, universities should try to be proactive in alerting faculty to the personal consequences of this decision. In our work in this area at our schools, we have found it very effective to have this message communicated by a faculty member to other faculty members and faculty bodies, such as Faculty Senates. This approach makes it more of a faculty-centered issue rather than an administrative-centered issue.

First Step: Know your Types

Before your institution can begin the transformation process, you must first be able to determine what "mix" of faculty types you have among entrepreneurs, the risk averse, careerists, and reluctant. Your choice of engagement strategy depends on this very important element of institutional readiness information. For instance, many universities have made the mistake of setting up their support structures on the basis of the characteristics of the entrepreneurs. This "if you build it, they will come" mentality has created consternation for administrators because their costly investment in hardware and infrastructure overlooked the fact that many faculty, especially the Risk Aversives, needed flesh and blood support to make their transformation. In these instances, many well-equipped support centers see few new faces.

Institutions need to determine just what the mix is. Transformations in universities dominated by either the first or last type of faculty member are easy to predict; they occur quickly in the first case and will emerge only after a long time period of attrition and replacement in the last. Universities dominated by either of the middle types will have to make a commitment to providing significant faculty support even if the infrastructure is in place. Obviously if the Risk Aversives dominate, then emphasis on infrastructure and "make it easy" support will create a much better chance for successful transformation. The domination of the third type of faculty makes this effort more problematic since it involves a restructuring, and redefinition, of the University reward structure prior to adoption. This slows the transformation process down considerably because most university administrators are reluctant to engage in the politics of the university's reward structure without a clear assurance of tangible gain as a result of that engagement.

Creating an inventory of the faculty is vital to a system-wide transformation effort as it affects every aspect of a university's strategic planning. This inventory process can also present an opportunity for creating an environment where faculty can begin to become engaged in the use of new teaching and learning technologies. The next section presents an example of how one university is carrying out this inventory/engagement process.

Identifying and Engaging the Faculty “Types” at the University of Hartford

The University of Hartford is a private four-year institution with a full-time undergraduate student body of about 4,100; 1,175 part-time undergraduates, 556 full time graduate students, and 986 part-time graduate students. It has 320 full-time faculty members. The University is in the early stages of strategic planning for system-wide transformation in the area of new teaching technologies. The University’s Advisor on Technology Planning and Assessment is currently interviewing every faculty member on campus to assess their current use of technology and their possible future use. This inventory process will allow the University to see what the “mix” of faculty types is and will then serve as the basis for the strategic plan for University transformation. These visits (normally averaging thirty minutes) also allow for the first attempt at faculty engagement utilizing a resource that is both free and user-friendly. Below, we discuss this engagement “tool”, MERLOT, and how it has been very effective in engaging all four faculty “types”.⁹

The number of faculty who want to use the power of computers and networks is increasing. However, finding a sufficient quantity of high quality interactive teaching and learning materials is difficult. MERLOT, the Multimedia Educational Resource for Learning and Online Teaching (<http://merlot.org>) is addressing this barrier to the effective use of these technologies by providing tools that allow faculty to share teaching and learning resources over the World Wide Web. Thousands of faculty from across the country are collaborating to create a collection of thousands of online teaching and learning materials that can be shared by the entire higher education community. This approach is being sponsored by the National Learning Infrastructure Initiative (NLII) of EDUCAUSE and twenty-three institutional partnerships throughout North America.

MERLOT recognizes the fact that each year more faculty want to incorporate technology into their teaching and learning environments, yet only a small percentage of faculty actually develop web-based, interactive learning material. Because the publishing industry is not meeting the growing need for these materials, MERLOT is providing an environment where higher education can collaborate to address this critical need. Let us look at how a resource like MERLOT can engage each faculty “type”.

Entrepreneurs - Of course, by definition the entrepreneurs are already engaged, but that engagement tends to be personal rather than collaborative. MERLOT offers two incentives for this type of faculty member to broaden the reach of their work. First, it offers the opportunity for them to “show off” what they have done to a wider audience. This is a form of engagement since it gives the entrepreneur the opportunity to see that their work can be leveraged beyond the needs of their classroom. Second, MERLOT gives the entrepreneurs a chance to interact with other entrepreneurs in their field of expertise. In smaller institutions, it is very often the case that you may have very few entrepreneurs, producing considerable isolation and little entrepreneur to entrepreneur interaction. MERLOT allows the faculty member to become a part of a wider, virtual community.

Risk-Aversives - The most defining aspect of this faculty group is that the easier you make their transition,

⁹ The MERLOT description owes much to the contribution of Chuck Schneebeck

the better chance of transformation. While this can usually translate into improvements in your faculty support area, many institutions lack the resources to offer course content development services to all interested faculty. MERLOT offers faculty not only the learning packages themselves, but also peer-based guidance on how to apply them in classes. The main goal of the project is to eliminate the traditional barriers associated with the incorporation of new technologies, chief of which is the faculty member's reluctance to assume the student role once again.

Reward-Seekers - The impact of the new technologies goes far beyond the teacher-learner dyad. Transformations in teaching and learning are now being accompanied by transformations in the very meaning of research and scholarship. At each level of the university hierarchy (departmental, college, and central), there is going to have to be a redefinition process that will incorporate the new forms of virtual scholarship. This is especially important when you consider the fact that the faculty most likely to possess the expertise, or at least possess the highest level of comfort with the new technologies, are those who are the most vulnerable: assistant professors. Without concrete statements in faculty handbooks that clearly outline the type of scholarship in this area that would contribute positively to the tenure and promotion process, you will not engage a significant slice of the faculty. The peer review process, which is unique to MERLOT, allows faculty to either submit learning objects for review and/or review existing learning objects. The degree to which these activities should be judged to be equivalent to the traditional journal article submission and review process will be a matter of discussion for each institution. Our point is that these discussions must be initiated as part of the transformation process.

Reluctants - Finally, while we defined this group as standing outside the transformation process, we believe that MERLOT offers a chance for engagement with at least some part of this group as well. Just as we have not yet encountered anyone who has made a serious attempt at word processing and then returned to the typewriter, we believe that exposure to the innovations and new ways of presenting material to those with a commitment to teaching might have an effect. One method of doing this is to have departments hold a lab session where faculty are invited to explore, and play with, the MERLOT site. We have found at these sessions that even the most recalcitrant faculty member tended to stay longer than the scheduled time.

We have found that the faculty interviews conjoined with the use of MERLOT are very effective in helping to classify faculty and to start them on the road to greater utilization of technology-based learning materials. Three unanticipated benefits also were obtained from this interview process. First, the fact that a representative from central administration was taking the time to talk to individual faculty in their own offices was extremely well received and improved the perception of central administration's interest in faculty concerns. Second, it presented an opportunity to inform each faculty member about support resources that currently existed on campus. Finally, and perhaps most interestingly, the interview process itself raised the credibility of the advisor in the eyes of the general faculty. Faculty, in general, believe that central administrators do not have an accurate grasp of their needs and priorities. We found that the faculty inventory process alleviated this concern and that the advisor was quickly called upon, by faculty themselves, to comment on questions of faculty priorities. Such credibility is vital to central administration when the goal is systematic change; faculty must see the change as serving their interests and reflecting their

priorities.

The process is a time-intensive process and would only work in smaller institutions. Some institutions are using e-mail based surveys to all of their faculty. This method is also not recommended in that the response rate for faculty surveys is notoriously low and this method will miss those faculty who do not use e-mail on a regular basis, giving a biased result. For larger institutions, we recommend two other alternatives. One option is to use the Department Chair as your reporting source. Most Chairs have a good sense of their faculty's computer expertise. A departmental meeting that demonstrates MERLOT is also a good point for initial engagement. Another option is to draw a sample of faculty to interview. This would enable you to produce a good estimate of the faculty mix while incurring less time investment. It is critical, however, that administration publicize this effort and encourage those who are interviewed to share their MERLOT experience with their colleagues.

In the three months that we have been conducting these interviews, we have found a heightened interest on the part of a great number of the faculty. This interest has been manifested in requests for projection equipment, calls for more workshops, and increased use of course management software. In a wide variety of faculty groupings, there have been more and more discussions centering on the new technologies and what the university needs to do to move the process along. In essence, the inventory process has made transformation a central agenda item and, since the faculty were the sources for these interviews, the process is perceived to be a faculty-driven one. This last point is a vital element in system-wide change efforts and points out one important caveat to this process: don't do something like this unless central administration is committed to the process of transformation. This process raises expectations across all faculty types. If those expectations are raised and there is no administrative follow through, there is a distinct possibility that the credibility of central administration will be negatively affected.

It is highly recommended that institutions include estimates of what proportion of each type of faculty member currently exist on campus as an important part of any institutional readiness assessment. Second, it is important to point out that what works "best" at one institution, may produce failure at another. This may have nothing to do with differences in implementation strategy, but may be related to the differing cultures that exist within the implementing institutions. As Jan A. Baltzer observed:

For an information technology professional, success or failure within an organization can be the direct result of the individual's ability to analyze his/her corporate culture and then develop strategies to work within that culture.¹⁰

Innovations and Institutional Cultures

¹⁰Jan A. Baltzer, "People and Places: Managing the Human Side of Information Technology Application," The Association for the Management of Information Technology in Higher Education, Professional Paper Series #7, CAUSE, 1991

While the relationship between innovation and culture has been recognized, both in classic works such as Rogers¹¹ and also in newer works such as Lights¹², its application to teaching transformation is less well developed. Table 1 presents an example of how two cultural dimensions, across high and low resource environments, might lead administrators to consider using different engagement options depending on the cultural “mix” present at their institution. Each one of the cell entries can be viewed as a process-evaluation hypothesis that begs for cross-institution testing.

Table 1: University Culture and Methods of Faculty Engagement

	HIGH TRUST		LOW TRUST	
	High Resource	Low Resource	High Resource	Low Resource
HIGH INNOVATION	Centralized support Self-starters Administration takes maintenance role	Centralized grant development Outside funding support	Decentralized support Faculty directed projects High faculty profile in Planning	Encourage faculty outside support activities Encourage unit-based rewards
LOW INNOVATION	Emphasis on technical support Centralized training	Outside team visits Benchmarks Swap & share Contagion effects	Decentralized unit-based support Training of unit support personnel	No transformation likely Change in one parameter necessary

This point will be raised again in the conclusion of this paper, but will be made here as a cautionary note before presenting the selected “interesting practices.” If institutional culture is an important consideration affecting the success or failure of teaching transformation, innovators must consider the systemic characteristics rather than the “practice” characteristics prior to transformation. As Everett Rogers pointed out:

¹¹Everett M. Rogers, Diffusion of Innovations, 4th Edition (New York: Free Press, 1995).

¹²Paul C. Light, Sustaining Innovation: Creating Nonprofit and Governmental Organizations that Innovate Naturally, (San Francisco: Jossey-Bass, 1998).

Change agents seek to determine the needs of their clients, and then to recommend innovations that fulfill these needs. Discovering felt needs is not a simple matter; change agents must have a high degree of empathy and rapport with their clients in order to assess their needs accurately.¹³

To impose any one of the following practices and expect it to work because it is a “good idea” would be a mistake. Once an institution has undergone a serious self-assessment in regards to transformation and the identification of needs, the better route is to produce an integrated “package” of “interesting practices” that is congruent with those identified needs. Indeed, as we shall argue at the end of this paper, interesting practices tend to spring from an integrated base rather than producing one.

Selected “Interesting Practices”

The following practices by no means constitute a complete inventory of the work that is being done in these areas. Attempts were made to identify practices that feature creative ways of delivering faculty support in each of the five selected areas. Also, it will become clear that many of the practices identified here can fall in more than one of the support categories. Because of space considerations, our descriptions of the sites will be brief and we encourage readers to make use of the hyperlinks that are connected with each item entry. Many of the sites were collected via “snowball sampling” where one site contained information that led us to another site. We are certain that many “interesting practice” sites have been overlooked in this process.

1. Training This area addresses the third concern of potential adopters (“We’re all in this together alone.”) Regardless of the form of learning technology employed (asynchronous, enhanced presentation, partial web-based, totally web-based), second-wave faculty, by definition, lack the expertise necessary to self-start a learning transformation. However, best practices institutions don’t provide explicit “training” to faculty members in curriculum redesign, but promote their acquisition of curriculum development skills through project-oriented initiatives.¹⁴ There exists a wide variety in the way that training is delivered. This, we believe, is due to the wide variety of institutional cultures that exist. Getting faculty to undergo new training is difficult in and of itself; in some institutional cultures it may be even far more difficult, hence, the need for a variety of different approaches.

- **Auburn University**
Instructional Media Group
<http://www.auburn.edu/img/imgsem.htm>
 - List of seminars for which there is on-line registration.

- **Bellevue Community College**

¹³Rogers, *op. cit.*, p. 228.

¹⁴APQC, Executive Summary, p.9.

Northwest Center for Emerging Technologies

<http://www.nwcet.org/main.asp>

- Curriculum design sites
- Courseware provision and instruction
- Benchmarked by American Productivity and Quality Center for innovation and advancement in the leveraging of teaching technologies

- **Bowling Green State University**

Creative Development Studio

<http://www.bgsu.edu/offices/clt/index.html>

- **Buffalo State University**

Enhancing Teaching Through Technology

<http://www.buffalostate.edu/~edtech/home.shtml>

- Web site tutorial

- **California State University Chico**

Teaching and Learning Project

<http://www.csuchico.edu/tlp/webctinstitute/about.htm>

- **California State University Pomona**

Faculty Center for Professional Development

http://www.csupomona.edu/~faculty_center

- Workshops and discussion groups on new learning technologies
- Individual consultation services

- **Cornell University**

Technology and Tools

<http://www.cit.cornell.edu/atc/tech>

- **Embry-Riddle Aeronautical University**

<http://online.erau.edu/about/webct.html>

- Good example of how to train students to access and use web-based instruction

- **IUPUI**

Center for Teaching and Learning

http://www.center.iupui.edu/course_dev.html

- Menu-driven course development tool training

- **Marshall University**

CBT Campus

<http://multimedia.marshall.edu/CBTWEB>

- **Raritan Valley Community College**
Instructional Design Center
<http://rvcc2.raritanval.edu/~idc/IDC.htm>
 - Good example of centralized support at a community college

- **Rensselaer Polytechnic Institute**
Center for Academic Transformation
<http://www.center.rpi.edu>

The Pew Learning and Technology Program
 “Improving Learning & Reducing Cost: Redesigning Large-Enrollment Courses”
<http://www.center.rpi.edu/PewSym/mono1.html>

- **Rutgers University**
Teaching Excellence Center
<http://tec.camden.rutgers.edu/WebCT/index.html>
 - On-line tutorials

- **San Francisco State University**
<http://www.cet.sfsu.edu/workshop.html>
 - On-line workshop registration

- **Texas Tech University**
Teaching and Learning Technology Center
<http://www.tltc.ttu.edu/customiz1.htm>
 - Customized course development

- **Tufts University**
Power!Teams
<http://www.tufts.edu/tccs/at/powerteams>
 - Provides technical support for development of course learning materials
Center for Computing and Information Technology
<http://www.u.arizona.edu/~fri>
 - Faculty Resources for Instruction (FRI)
 - Learning software instruction and check out system

- **University of California, Berkeley**
Demystifying Technology for Teaching
<http://www.itp.berkeley.edu:80/demystifying.html>
 - Synchronous and asynchronous training modules for faculty, students, and staff

- **University of California, San Diego**

Instructional Web Development Center

<http://libnet.ucsd.edu/se/full.html?record=501>

- Facilitates the development of web-based materials for courses and technology support for faculty

- **University of California Davis**

Summer Institute on Technology in Teaching

<http://trc.ucdavis.edu/TRC/sitt/default.htm>

Instructional Design Studio

<http://trc.ucdavis.edu/TRC/dsstudio.html>

- **University of Central Florida**

Course Development and Web Services

<http://reach.ucf.edu/~idl6543/>

- Interactive Distributed Learning for Technology (an eight week simulation course offered once a year)
- Sixty contact hours
- Faculty required to take the course prior to offering web-based courses
- Number of web-based courses has exploded over a three-year period

- **University of Colorado**

Information Technology Resource Center

<http://www.colorado.edu/TTS/onlinelearning/index.html>

- On-line training tutorials

- **University of Delaware**

Toolkit for Teaching with Technology

<http://www.udel.edu/learn/technology/index.html>

- Offers formal training courses for faculty twice a year
- Holds workshops and offers self-paced training

- **University of Georgia**

WebCT Team

<http://webct.uga.edu>

- Application support, instructional design support
- In a two-year period, 1000 faculty receive training producing more than 1300 course selections

- **University of Florida**

Technical Assistants Program

<http://grove.ufl.edu/~ctrain/Tap/about.html>

- Training of undergraduate students to assist faculty in developing web-based course materials

and enhanced presentation materials.

- **University of Iowa**
Information Technology Services
<http://www.its.uiowa.edu/its/>
 - Short courses on resources, integration, and curriculum development

- **University of Kentucky**
Desktop Training Services
<http://www.uky.edu/IS/Training>

- **University of Maryland**
Institute for Instructional Technology
<http://www.inform.umd.edu/EdRes/FacRes/TeachTech/.TeachTech/IIT/>
 - Learning modules for faculty development
 - Maintains archives of past learning series

- **University of Minnesota**
Digital Media Center
<http://www1.umn.edu/dmc>
 - TA web certification program
 - Encourage TA's to learn the skills necessary to integrate
 - Bootstrap up to faculty

- **University of Notre Dame**
"Teaching Well Using Technology" Workshop
<http://www.nd.edu/~kaneb/TWT.html>

- **University of Southern California**
Adventures in Information: Technology and Faculty Instruction
<http://www.usc.edu/isd/publications/adventures>
 - Series of training workshops offered every semester

- **University of Texas Austin**
Electronic Information Literacy Program
<http://www.utexas.edu/academic/cte/teaching.html#instructional>
 - Mandatory on-line training for adjunct faculty
Center for Instructional Technologies
<http://www.utexas.edu/cc/cit>
 - Arranges and provides customized training for any group of five or more faculty and their students

- **University of Virginia**

- *Technology Support Partners*

- <http://toolkit.virginia.edu>

- Graduate students from discipline area trained for faculty support
 - \$400,000 budgeted over five years
 - Departments take over funding over a three-year period
 - 125 faculty contacted in first year
 - On-line Toolkit for faculty and students
 - Toolkit courses offered each semester

- **University of Washington**

- *Catalyst Project*

- <http://depts.washington.edu/catalyst/home.html>

- Department-level orientation-
 - Offer training modules to faculty that can be engaged from their own workstation

- *UWired*

- <http://www.washington.edu/uwired>

- Collaborative unit designed to find, develop, promote, and support effective uses of teaching and learning with technology
 - Plays a coordination role in bringing all relevant elements of the university to planning and implementation opportunities

- **Virginia Polytechnical Institute**

- *Faculty Development Initiative*

- <http://www.fdi.vt.edu>

- Faculty course development workshops
 - 1,800 participants in a six-year period
 - Attendees receive a \$300 stipend
 - Best feature: presentation by past faculty participants

- **Wake Forest University**

- *Computer Enhanced Learning Initiative*

- <http://www.wfu.edu/CELL/index.html>

- Student Technology Advisor (STARS) Program
 - One-on-one partnerships with faculty for course enhancement
 - Employs 50 students @ 10 hours/week

- **William Paterson University of New Jersey**

- *Student Technology Assistant Clearinghouse*

- <http://www.wpunj.edu/irt/stac/>

- Nationwide information-sharing resource on how to use students in faculty training and support

2. Grants/Start-up Resources Faculty at schools with poorly developed faculty/administration interactions (what Brown and Floyd refer to as a poorly developed “ethos”) respond more positively when administration demonstrates a commitment to transformation by offering support funds or buyouts. These practices also reflect the basic fact, as revealed by the experiences of the entrepreneurs, that course transformations demand considerable time and effort on the part of faculty. In addition to the characteristics of an “enabling environment” mentioned earlier, best practice institutions are also distinguished by their emphasis on the strategic investment of resources according to firm criteria for funding projects (as opposed to providing funding as a general “no-strings-attached” resource for all faculty and all courses.) Further, they “do not wait for, or depend on, external funding for their faculty instructional development initiatives.”¹⁵

- **Carleton College**
Curricular Computing Grants
<http://www.carleton.edu/campus/ACNS/faculty/grants/call.html>
- **Duquesne University**
Award for Innovative Excellence in Teaching, Learning, and Technology
<http://www.duq.edu/cte/grants.html>
- **Grand Valley State University**
Pew Faculty Teaching and Learning Center
<http://www4.gvsu.edu/FTLC/index.html>
- **Iowa State University**
Grants Availability Links
<http://www.itc.iastate.edu/instrdev/homepage.html>
- **Northwest Missouri State University**
CITE Fellowship Program
<http://Cite.nwmissouri.edu:2000/vitehome/TRAINING/summer2000.htm>
- **Penn State University**
Funding Sources for Innovation in Teaching
<http://cac.psu.edu//ets/FacultyServices/fund.html>
- **Rensselaer Polytechnic Institute**
The Pew Learning and Technology Program
<http://www.center.rpi.edu/PewHome.html>
 - The Pew Grant Program in Course Redesign
 - The Pew Symposia on Learning and Technology

¹⁵APQC Executive Summary *op. cit.*

- The Pew Learning and Technology Newsletter
- **San Francisco State University**
Center for Enhancement of Teaching
<http://www.cet.sfsu.edu/new-faculty/resources/techinitiative/index.html>
 - Technology Initiative Awards
- **Texas Tech University**
Faculty Incentive Grants
<http://www.fttc.ttu.edu/facgrant.htm>
- **University of California Davis**
Mini-grant Program
<http://trc.ucdavis.edu/TRC/grants/mini.html>
- **University of Central Florida**
Faculty Development and Web Services
<http://reach.ucf.edu/~idl6543/>
 - “Start Up” incentive program
 - Faculty stipends and release time
 - New computers
 - Multimedia classroom development
 - Planning and production support
- **University of Delaware**
Instructional Improvement Grants
<http://www.udel.edu/cte/grants.htm>
- **University of Georgia**
Learning Technology Grants
<http://www.isd.uga.edu/instructdev/ltg.html>
- **University of Illinois**
Campus Award for Innovation in Undergraduate Instruction using Educational Technology
<http://www.provost.uiuc.edu/awards/>
- **University of Maine**
Teaching and Technology Fellowship Program
<http://www.umaine.edu/teaching/technology.html>
- **University of Massachusetts**
TEACHnology Fellowship Program

http://www.umass.edu/cft/teaching_development/teachnology.htm

- **University of Oregon**
Promotion and Tenure Memo
<http://zebu.uoregon.edu/edtech/pt.html>
 - A memo that discusses ways that technology work is aligned with research.
- **University of Texas Austin**
Innovation Use of Instructional Technology Awards Program
<http://www.utexas.edu/cc/cit/iitap>
- **University of Virginia**
Innovative Use of Technology Initiative Fellowships
<http://tti.itc.virginia.edu/>
- **Virginia Polytechnic Institute**
Center for Innovation in Learning
<http://www.edtech.vt.edu/cil/default.html>
 - 77 courses transformation projects funded for more than 100 faculty
XCaliber Award
<http://www.edtech.vt.edu/cil/2000/XCaliber2000.html>

3. Technical Support This relates directly to the third concern of faculty. The programs that have demonstrated the greatest levels of faculty adoption are those that approach “just-in-time” status in their technical support. Institutions vary in the manner that this support is delivered, but generally use decentralized structures and funds for “just-in-time” status in their technical support, and centralized structures and funds for developing and supporting overall organizational strategies¹⁶.

- **Carleton College**
Academic Computing and Networking Services
<http://www.carleton.edu/campus/ACNS/faculty/support2.html>
 - Discipline-based computing coordinators
 - Faculty advisor system
- **California State University Chico**
Web Buddy Program
<http://www.csuchico.edu/tlp/resources>
- **Cornell University**

¹⁶APQC, Executive Summary, *op. cit.*

ATC Consulting Services

<http://www.cit.cornell.edu/atc/consult>

- **Duke University**
Duke University Network Knowledge Base (DUNK)
<http://www.dunk.duke.edu/>
 - Runner-up in 1998 *Help Desk Institute Team Excellence Award*
- **Iowa State University**
Instructional Development Services
<http://www.itc.iastate.edu/instrdev/homepage.html>
- **Penn State University**
Center for Learning and Academic Technologies
<http://cac.psu.edu/ets/FacultyServices/index.html>
 - Good example of integrated strategic, implementation, and assessment plans
- **Seton Hall University**
Center for Academic Technology
<http://www.cat.shu.edu/>
 - Faculty consultants with extensive classroom experience
 - *Student Technology Assistant Program*
 - Partnerships between student consultants and faculty
 - 1999 EDUCAUSE Award for Excellence in Campus Networking
(<http://www.educause.edu/ir/library/html/cem9946.html>)
- **Texas Tech University**
<http://www.tltc.ttu.edu/individu.htm>
 - individualized consultation
- **University of California Davis**
Technology Support Program
<http://dcas.ucdavis.edu/docs/tsp.html>
 - Technology Support Coordinator
 - Unit based
 - Liaison between unit and IT
 - Trained by Technology Support Program
- **University of Central Florida**
Faculty Development and Web Services
<http://reach.ucf.edu/~idl6543>
 - Centralized IT produces leadership and coordination
 - Organizational and technological infrastructure

- Faculty development
- Support programs
- Institutional resource commitment

- **University of Connecticut**
Instructional Resource Center
<http://www.sp.uconn.edu/~wwwfrrl/main.html>
 - On-line help for presentation material, web page construction, and authoring tools
 - Ted's Page of Teaching and Technology Resources

- **University of Delaware**
Teaching, Learning, and Technology Center
<http://www.udel.edu/learn/technology/index.html>
 - Series of "toolkit" help sites with high levels of user-friendliness

- **University of Maine**
Faculty Development Center
<http://www.ume.maine.edu/tech/services.htm>

- **University of Maryland**
Institute for Instructional Technology
<http://www.inform.umd.edu/TT/GeneralInfo/Support/Instructional.html>
 - Good overview of support plan for faculty over the course of a semester

- **University of Michigan**
Office of Instructional Technology
<http://www.oit.itd.umich.edu/oitweb/index.html>
 - Consulting
 - Software development
 - Strong on-line search/help resources

- **University of Minnesota**
<http://www1.umn.edu/dmc/contents/DMC-map.shtml>
 - Graphic site map that allows users to get to correct site by answering need-based questions

- **University of Notre Dame**
Faculty Educational Development Center
<http://www.nd.edu/~edtech/services/equipment.html>
 - Provides high-end equipment access for course development

- **Wake Forest University**
International Center for Computer Enhanced Learning

<http://www.wfu.edu/Organizations/winstonnet/backup/oldskool/runde/index.html>

- Leadership Series (for administration)
- Technology Implementation Series
- Educational Principles Series
- Best Practices Series

4. Assessment This area addresses what we believe to be a vital element in a second-wave faculty member's decision to transform: Does it work? A finer tuning of that question is: does it work for people like me? Several institutions, almost always through IT, provide feedback and assessment reports to adopters. Many report that this practice produces a "contagion effect" where faculty innovations spread on the basis of application success (measured by such things as withdrawal rates, grades, student satisfaction). There are also many instances where assessment results can, in turn, feed back into the reward structure of the institution. More and more assessment efforts are providing support for assessment reports that the faculty member can turn into a professional article for their profession's teaching arm. This can greatly reduce the perception of the "zero-sum" game that most faculty see between teaching innovation and research productivity.

- **California State University System**

"Evaluating the benefits and costs of mediated instruction and distributed learning"

http://www.calstate.edu/special_projects/mediated_instr/

- Case studies measuring the economic impact of distributed learning

- **California State University Chico**

<http://www.csuchico.edu/tlp/resources/tools/teaching/assessment>

- **IUPUI**

Center for Teaching and Learning

http://www.center.iupui.edu/eval_assess.html

- Good resource link page for evaluation and assessment sites

- **Seton Hall University**

Technology Assessment Project

<http://www.shu.edu/depts/cat/assessment/initiative.html>

- Offers guidance in assessing the institutional impact of instructional technology on teaching and learning
- Collects data on assessment for a national repository

- **University of California, Berkeley**

Courseware Developers and Users Group

<http://www.itp.berkeley.edu:80/cdug>

- Page has many general interest links in the field of instructional technology and courseware development

- **University of California, Davis**
Learning Environment Architecture Development Report
<http://lead.ucdavis.edu/>
- **University of Central Florida**
Faculty Development and Web Services
<http://reach.ucf.edu/~coursdev/>
 - Conducts assessment data and produces reports for faculty
- **University of Notre Dame**
Office of Information Technology
<http://www.nd.edu/~edtech/services/index.htm>
 - Provides needs assessments and impact evaluation assistance
- **University of Southern California**
Adventures in Information: Technology and Faculty Instruction
<http://www.usc.edu/isd/publications/adventures/instruction.html>
 - Workshops in on-line assessment, feedback and evaluation
- **University of Texas**
Faculty Trends
<http://www.utexas.edu/cc/cit/facweb/index.html>
 - News items, recent developments, examples of innovative web sites, a forum for posting ideas, award-winning web sites, announcements of grants and competitions
- **Virginia Polytechnical Institute**
Center for Innovation in Learning
http://www.edtech.vt.edu/cil/2000/CIL2000_rfp.html
 - Conducts course assessment projects for faculty
- **Wake Forest University**
International Center for Computer Enhanced Learning
<http://www.wfu.edu/Organizations/winstonnet/backup/oldskool/runde/index.html>
 - Evaluation and Assessment Series

5. Communication None of the first four best practice areas will have the desired impact unless this final area is managed. An institution could have the best possible training and technical support facilities and also have a strong cohort of entrepreneurs with a host of successful transformations and still not engage the second-wave faculty stratum. The most successful institutions pay particular attention to “getting the word out” about their support services. They have established information exchange packages such as “swap and share” lunch meetings, “benchmarking” meetings with other units, and visitations to and from other

institutions which are successfully accomplishing either transformation, or struggling with the same problems.

- **Arizona State University**
Center for Learning and Teaching Excellence
<http://www.asu.edu/upfd>
- **Buffalo State University**
Comprehensive Links page
<http://www.buffalostate.edu/~edtech/home.shtml>
- **California State University Chico**
On-line registration for discussion groups
<http://www.csuchico.edu/tlp/resources/tools/reviews/newsgroups>
- **Cornell University**
Resources for Educators
<http://www.cit.cornell.edu/atc/ed>
- **Emory University**
Center for Interactive Teaching
<http://wcw.emory.edu/ECIT>
 - Case study site of early adopters
 - current course adoptions and course archives
 - A “classroom cam”
- **Faculty Connection**
<http://www.facultyconnection.org>
 - Site that features opportunities for faculty to become familiar with issues, examples, and discussion topics associated with using emerging technologies in teaching and learning.
- **IUPUI**
Center for Teaching and Learning
<http://www.center.iupui.edu/conferences.html>
 - Good linking page to conferences, workshops, and symposia
- **Iowa State University**
Teaching with Technology Newsletter
<http://www.itc.iastate.edu/instrdev/homepage.html>
- **MERLOT Project**
<http://merlot.org>
 - Building learning communities

- Information base for learning packages
- Evaluation of learning packages by field experts

- **Northern Arizona University**
Office of Teaching and Learning Excellence
<http://www.nau.edu/~otle/resources/>
 - Good site for multiple web topics sites

- **Rensselaer Polytechnic Institute**
Center for Academic Transformation
<http://www.center.rpi.edu/>
 - Center resources
 - Articles, monographs, websites about how information technology is transforming higher education

- **Rutgers University**
TEC Partners
http://camden-www.rutgers.edu/Camden/TEC/tec_partners.html

- **Staffordshire University**
Computers in Learning and Teaching
<http://www.staffs.ac.uk/cital>
 - Directory of sites devoted to subject
 - Good international sources

- **Texas Tech University**
National Teaching and Learning Forum
<http://www.tltc.ttu.edu/ntlf>

- **Tufts University**
Teaching with Technology Faculty Feature
<http://www.tufts.edu/tccs/at/faculty-feature>
 - Video/audio interviews with faculty adopters

- **University of Buffalo**
Link and Learn
<http://www.etc.buffalo.edu/links.htm>

- **University of California, Davis**
Forum on Instructional Applications of Technology
<http://trc.ucdavis.edu/TRC/Technology/FIAT.html>

- **University of California, San Diego**

Sharecase99

<http://webcast.ucsd.edu/>

- Full day conference showcasing UCSD's technology for university staff

- **University of Connecticut**

Teaching with Technology

<http://www.sp.uconn.edu/~terry/TTFac/teachtech.html>

- Short vignettes from faculty who have adopted new technologies

Ted Mills' Hot Links

<http://www.sp.uconn.edu/~wwwfirl/teds/ted.html>

- Very nice reference page for a variety of users

- **University of Delaware**

Teaching, Learning, and Technology Center

<http://www.udel.edu/learn/technology/index.html>

- Offers a "Presentation Tips" web site and a copyright information web site

- **University of Iowa**

Instructional Technology Calendar

<http://easel.its.uiowa.edu/acad/itcal.nsf>

- Good example of an events calendar for Instructional Technology Training

- **University of Kansas**

Center for Teaching Excellence

<http://eagle.cc.ukans.edu/~cte/EducationalSites.html>

- Links to on-line teaching resource centers in all fifty states.

- **University of Maryland**

Caprina Project

<http://www.inform.umd.edu/Caprina>

- Provides high quality interactive access to large collections of digitized images

- **University of Minnesota**

Portfolio Site

<http://www1.umn.edu/dmc/portfolio/portfolio.shtml>

- Contains teaching portfolios of enhanced courses already being offered

- **University of Nebraska**

Instructional Diner

<http://itg.unl.edu/diner/index.html>

- **University of North Carolina**

“New Chalk”

<http://www.unc.edu/courses/newchalk>

- Features instructors’ experiences with new technologies

- **University of Pittsburgh**

Center for Instructional Development and Distributed Education

<http://www.pitt.edu/~ciddeweb>

- Offers seminars in teaching practices and copyright issues

- **University of Southern California**

Quickstart Program

<http://www.usc.edu/isd/locations/cst/quickstart>

- **University of Texas Austin**

Faculty Trends

<http://www.utexas.edu/cc/cit/facweb/index.html>

- News items, recent developments, examples of innovative web sites, a forum for posting ideas, award-winning web sites, announcements of grants and competitions

World Lecture Hall

<http://www.utexas.edu/world/lecture/index.html>

- Contains links to pages created by faculty worldwide who are using the web to deliver courses in any language

- **University of Washington**

Catalyst Project

<http://depts.washington.edu/catalyst/home.html>

- Provides profiles of programs that provide a vehicle to share ideas and experience, humanize the technology, and hopefully diffuse innovations
- “News and Reviews” information exchange site

- **Virginia Polytechnical Institute**

Center for Innovation in Learning

<http://www.edtech.vt.edu/cil>

- Umbrella organization for communication between instructional innovators

- **Wake Forest University**

Computer-Enhanced Learning Initiative

<http://www.wfu.edu/CELI/>

- New center director chosen each semester
- New director focuses on two or three different programs
- Swap and share
- Benchmarking with other departments and institutions

- **Western Kentucky University**
Technology Notes for Teachers
<http://www.wku.edu/Dept/Support/AcadAffairs/CTL/tnt/tntindex.htm>

- **Western Michigan University**
Center for Teaching and Learning
<http://www.wmich.edu/teachlearn/about/who.html>
 - Supports serious discussions of teaching and learning
 - Makes information on these issues available to learning communities

Interesting Practices and Best Systems

The process of building the “interesting practices” list presented above necessitated visiting web sites for over four hundred institutions of higher education. Entering into these sites as an outsider allowed for a relatively objective evaluation of the degree to which a university has integrated technology into all aspects of its daily activities. A quote attributed to IBM’s Marc Weiser is pertinent here. He argued that the most profound technologies are those that “disappear.” In an odd sense, the purpose of the site examination was to look for “invisible” technological applications. After a period of training, the site evaluation process, , made it easy to identify institutions which, by integrating technology into what they do, make it “invisible.” At the very least, they make the satisfaction of functional needs easier without having to assume some level of technological mastery. It is at this stage of development that you both engage second-wave faculty and start developing practices that are not only useful, but also “interesting.” After some practice, the site visitor can begin to differentiate institutions that have concentrated on one or two areas of faculty support from those that have developed what I have come to think of as an overall “attitude” towards the institutional integration of technology.

As an illustration of this, we propose the following exercise. First, spend some time exploring the web sites of the following institutions which, based on the above examinations, have been identified as “best systems” and have developed the right “attitude” towards transformation. (You will notice that I am giving the URL’s for the main home pages of these universities. One of the points of the exercise is to see how easy it is to see the penetration of technology right at the “front door” of these institutions.)

Texas Tech University	http://www.wfu.edu
University of Central Florida	http://www.ucf.edu
University of Delaware	http://www.udel.edu
Virginia Tech University	http://www.vt.edu
Wake Forest University	http://www.wfu.edu

Then select the home pages from any five other universities (preferably none from the lists cited in this paper), including your own. We believe that you will find the differences, both quantitatively and qualitatively, to be stark. Before one can grasp the “attitude” which underlies transformation and which

exists in all best systems, one must see the consequences as reflected in an exercise such as this.

The next step in this process is to determine the environment that surrounded an institution's transformation to a "best system." This paper has identified two key areas: institutional environment and faculty characteristics. By identifying "best system" institutions, we can start to ask questions concerning how the transformation was accomplished; starting with the question of the source of the institution's "attitude" change.

Conclusion

When the first version of this report was written in February 2000, the author had envisioned the presentation of a wide range of "best practices" that would resemble a menu-like opportunity for interested institutions to choose from. This original intent was misguided. While the practices presented above should by all means be looked at, "cherry-picking" a variety of practices is not recommended. Instead of focusing on "best practices," a more profitable emphasis should be placed on "best systems." By and large, institutions that have demonstrated the highest levels of success in faculty adoption excel in most of the practice areas listed above. These institutions offer a comprehensive and integrated package of support services and engagement practices. The phrase that many feel captures this sense of integration is "ubiquitous computing." One of the next projects in this research stream is to identify the characteristics of institutions that have developed the "attitude" discussed above that manifests itself in system-wide transformations, or, ubiquity.

While this new study has not been done as yet, we will go out on a limb and present our best guess at three of the most important determinants of this sort of transformation. Perhaps the most important element is **Leadership**. Each institution has demonstrated a track record of "courageous leadership" during their transformation. Best systems do not emerge from consensus, but they are created by consensus. Consensus is created by informed and courageous leadership; leadership that is willing to make the investment in time, resources, and care necessary to overcome challenges that are both concrete as well as psychological.

A second element that appears to be vital to successful transformation is a process that produces, on the part of the faculty, a sense of **inclusion**. Systemic change necessitates the involvement and, most importantly, the cooperation of all elements of that system. This includes administrative staff and students as well as faculty. The earlier and the more publicly this inclusion occurs, the greater the payoff in the later stages of implementation. While campuses vary in this regard, faculty tend to have a much stronger organized presence on campus than either the student body or staff. Much time has been devoted in this paper to the issue of faculty motivation and the role it plays in transformation. Successful efforts are both sensitive to this question and use faculty participation to help develop the parameters of the process. The more public this inclusion is during the beginning of the process the better. During the implementation stage, care must be taken to avoid faculty feeling that the change was somehow imposed on them. This can occur even when there was attention paid to inclusion at the early stages of planning. For example, Northern Michigan University has established a process where departmental units must apply for inclusion in the

campus's ubiquitous computing program. This application can only be made as the result of a unanimous vote on the part of the department. The two advantages of this approach are: 1) It makes faculty participation in the transformation process an active, as opposed to a passive, process; and 2) It allows for a phased inclusion process where departments are allowed to watch others test out the program before making the decision to join.

The third fact to emerge from this overview, and one that is strongly related to the concept of inclusion, is that **communication** is vital to successful institutional transformation. Support centers must be able to publicize their services to the academic community and, perhaps more important, faculty exchanges regarding transformation must be shared. In the Northern Michigan plan discussed above, effective communication between departments that have joined the program and those that have not can facilitate quicker buy-ins to the program. As Dorothy Frayer, in her excellent article that argues that institutions should offer a comprehensive and integrated package of support services and engagement practices, observed:

Faculty are often able to make the conceptual leap required to see how a colleague's use of technology might apply in their own discipline... For this reason, it is quite helpful to create opportunities for faculty to learn about technology use by colleagues within their discipline at other institutions...¹⁷

“Interesting practices “ are the results of best systems going beyond basic, or minimal, deliveries of faculty support. Best systems are produced by an attitude, shared by both administration and a critical part of the faculty, not merely to add technology to what they are currently doing, but to incorporate it, which transforms both what they do, and who they are.

¹⁷Dorothy A. Frayer, “Creating a Campus Culture to Support a Teaching and Learning Revolution”, Cause/Effect V.22, n.2, 1999