Supporting Distributed and Distance Learning Faculty

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Distributed and distance learning technologies afford opportunities to effectively integrate technology into the teaching and learning process. At James Madison University, as at other colleges and universities, there is a ground swell of instructional adoption of technology, particularly in the use of distributed and distance learning systems such as Blackboard, WebCT and eCollege. As instructors begin to initially tap and then stress such systems, keeping pace with instructor demands to effectively use these systems, from addressing basic utilization skills to best practices in online facilitation, is a challenge.

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CONTEXT

The Center for Instructional Technology (CIT) at James Madison University supports a core suite of distance and distributed learning tools to reach a diverse instructional audience accommodating a variety of teaching and learning styles. In 2001, those tools included CourseInfo (upgraded to Blackboard 5, Level Two in June, 2001), Centra 4, WebBoard and the Commonwealth Classroom (VTEL).

Use of Blackboard's CourseInfo increased dramatically over a short time. CourseInfo was available to faculty and students as of July 1, 2000. By the end the fall, 2000 semester, individual users totaled 5,360. By February 2001, over 9,300 individual users and 500 online courses were supported by the system. In early 2001, the server experienced over 60,000 hits per day, which represented an 80% increase in use from fall to spring semester. In June of 2001, almost 300 faculty teaching over 700 courses were utilizing the system.

Today, every faculty member, staff member, student and JMU affiliate receives a Blackboard account. Out of 2,800 possible courses sections, the system supports almost 1,300 Blackboard courses, with each Blackboard course representing distinct University course sections and combined course sections. James Madison University employs 934 full-time and part-time faculty members. Currently, 550 instructors teach courses using Blackboard.

Because of the dramatic increase in use during the Fall 2000 semester, in early 2001, the CIT lobbied to acquire an upgrade to CourseInfo as rapidly as possible in order to ensure system security, stability and utilization scalability. Using a pre-planned capacity within the original RFP to acquire an asynchronous distance learning system and subsequent upgrades, CourseInfo was upgraded to Blackboard 5 Level Two on June 22, 2001. JMU Information Technology staff and Blackboard, Inc. staff were on call to assist with the upgrade in case of difficulties.

A transition plan to minimize disruption of services was developed and implemented. During the period preceding the transition, key stakeholders on the faculty, administration, and staff were notified of the upgrade and regularly informed of the status of the migration. Faculty teaching courses during the upgrade were identified and personally contacting to assure support and decrease disruption to instruction. Transitional training was provided to faculty teaching summer courses during the upgrade. To further assist faculty, additional Blackboard training sessions were offered, and new training materials were prepared and distributed.

The rapid adoption of Blackboard has lead to an increase in other web-based

systems and services, particularly Centra. The CIT provides the infrastructure and support for Centra , a synchronous course management system. In April, 2001, Centra Symposium was upgraded to Centra 4. Last year, 251 registered users in six courses used the system. As of October 2001, 837 faculty and student have accounts in the system.

The CIT also supports the use of WebBoard at James Madison University. During the past year, the CIT supported 183 boards. Most were used for class work; 23 were used as a communications forum for administrative meetings and faculty groups, enrolling 456 users. There were a total of 5,014 accounts, although not all are active. In March, O'Reilly & Associates, the manufacturer of WebBoard announced that it would cease further development of the product. WebBoard has since been purchased by ChatSpace, which has released a WebBoard version 5.0. As a result of this application transition, the CIT will evaluate the need for continued support of this application in the coming fiscal year.

FACULTY DEVELOPMENT

James Madison University employs many methods to support distance- and distributed-learning faculty, including workshops, information sessions, on-line tutorials, and house calls. Sessions incorporate instruction in best practices with technical skills acquisition.

At JMU, faculty development services include regularly scheduled and customized workshops, short Tech-Know-Flash informational sessions, instructional house calls, What's Up events and other support services offered throughout the year. Faculty development services also include in-class teaching in which instructors from the Center for Instructional Technology will guest lecture on relevant technology topics to students in specific courses.

The Center for Instructional Technology at JMU tracks and collects information on faculty development activities. Please note: this system does not track CIT usage related to project development or grant work. A "use" of the CIT might entail a walk-in consultation, an office house call, or workshop participation. Use hours are not tracked, however, interviews of CIT staff indicate that the amount of time per support visit has continued to increase.

In the past fiscal year (July 1, 2000 – June 30, 2001), three hundred eighty-nine (389) distinct individual users used CIT faculty development services in FY00-01 (this number does not include participants from in-class teaching and others who attended presentations but did not register). Users participated from all colleges of the University as well as Academic Affairs, Administration and Finance, Information Technology and other departments. Total visits to the center increased 3.3% from 2169 in FY99-00 to 2241 in FY00-01, even with a drop in the number of open hours during the majority of the fiscal year.

In this same period, the center hosted 105 training events covering 37 unique topics. Twenty-six (26%) of these events were customized workshops provided for a wide variety of JMU departments.

Training event topics changed dramatically from previous years to reflect the changing needs of the University. For example, 69 workshops and Tech-Know Flash events (51% of all workshops) were related to distance and distributed learning—a 315% increase from FY99-00. Other topic areas included Web Development, Web Support and related issues such as copyright law. Nine "What's Up" sessions revolved around the

issues of online instruction and resources. The CIT expects an increase in distance learning-related training and support in FY01-02.

New workshops for FY00-01 included Dreamweaver I and II, ASP, iMovie 1 and 2 and Audio and Video Media for the Web. Two online courses (Scanning and PowerPoint) were offered for the first time. The CIT offered fewer workshops in FrontPage, Scanning, PowerPoint, Publisher, Acrobat and Digital Cameras than in previous years. Computing Support now offers workshops in FrontPage, Scanning and PowerPoint. In addition, many current or potential customers have mastered these tools, take advantage of the other learning opportunities available on the Web or off the shelf in a local bookstore or use CIT walk-in services to receive assistance in these areas.

Records show 1051 total attendances at training events in FY00-01-- **an increase of 65%** over the number of attendances in FY99-00. This increase was primarily due to the adoption of the CourseInfo/Blackboard course development tool. Attendance in Distance and Distributed Learning events increased **by 750%.** (See Table 1, included at the end of this document for additional information).

Faculty clients attended more application-specific training events (e.g., Dreamweaver) than concept-oriented training events (e.g., Instructional Strategies for Online Learning). To increase customer interest in conceptual training, the CIT embedded related material into application-specific training. While the bulk of training still focuses on helping faculty effectively use technology, the instructional technologist helps faculty address what Steve Ehrmann calls Stage 2 and Stage 3 of faculty development.

For example, during the introductory Blackboard workshop, the instructional technologist leads a discussion on designing and facilitating for online courses using Blackboard. This discussion happens during the second day of training, when participants have a basic idea of Blackboard's features. This allows the instructional technologist to refer to various options, such as the discussion board or digital dropbox, in her discussion, knowing that participants have a clear idea of the features and functions of Blackboard. The discussion addresses issues such as the critical importance of re-purposing traditional content for online delivery, providing interaction, and encouraging horizontal rather than top-down, vertical lines of communication between professors and their students. Throughout the discussion, the instructional technologist refers to specific aspects of Blackboard that allow for interaction and active learning, such as the ability to set up groups. These references reinforce the faculty development trainer's Stage 1 instruction in how to use the technology. In this way, both CIT staff members are collaborating to integrate skills development with distributed and distance learning best practices.

In addition to working with the faculty development trainer, the instructional technologist consults on instructional design issues via phone calls, email, or in person with professors who have Stage 2 and 3 questions about how to integrate technology into their courses or how to avoid pitfalls. A recent unofficial survey of Blackboard instructors indicates a growing interest in attending conceptual training: more than 50% of the 64 respondents said they would attend a workshop on instructional strategy. The move from Stage 1 to Stages 2 and 3 may take several semesters as professors become comfortable with the basic skills necessary to implement distributed and distance learning delivery systems and are ready to pursue instructional design issues.

All CIT staff members meet with faculty individually to assist them as they apply skills learned in workshops and work with various applications via the House Calls program. The number of house calls increased by 8% from 162 in FY99-00 to 175 in FY00-01. Twenty-five percent (25%) of all house calls related to distributed learning applications (CourseInfo/Blackboard, Centra, IBEX, MDID, WebBoard). The remainder related to web development, scanning, digital images, PowerPoint and desktop publishing. Staff spent an average of 1 hour per house call (based on 88 house calls).

While the bulk of CIT faculty development services focus on faculty in general, new faculty present new challenges to the organization. As course management systems have become an integral part of the instructional process, new faculty often have only a few days in which to learn how to use them, understand policies and access support services. This year, almost two-thirds of new faculty hires were already familiar with online course support systems such as Blackboard and WebCT. This new demand further underscores how distributed learning tools support the academic mission of the institution. To meet the needs of new faculty at JMU, the CIT partnered with organizers of new faculty orientation, providing intensive coordination and production support. CIT staff participated in new faculty orientation, talking with new faculty during breaks and lunch. "Talking head" time was limited to 15 minutes. Faculty had the opportunity to work with CIT staff for two hours to learn more about faculty development services. In this two-hour time period, new faculty members established 57 course sections in Blackboard.

RESEARCH AND DEVELOPMENT

Since 1997, the CIT has provided another avenue, an in-house technology grants program, via which appropriate use of technology is encouraged. This program, called "mGrants" comprises the research and development activities of the CIT, allowing entrepreneurial faculty to set direction for the institution in the arena of instructional technology. The program supports faculty who strive to cultivate instructional excellence through experimentation with new ideas, teaching methods, and technologies. When faculty members are awarded an mGrant, they receive a stipend or other funds, technical support, and given the opportunity to work with the instructional technologist, who is also the mGrants production manager. In this way, the faculty member is exposed to instructional design practices and able to address best practices and reach a level of comfort in technology use. Throughout the program's four-year history, novice users and early adopters alike have submitted proposals.

Last year, the CIT funded two proposals directly related to distance learning. In particular, a project in support of streamed media at JMU has been helpful in meeting increased demand from faculty in the coming academic year. The purpose of this project was to investigate and adopt technologies that allow faculty in the School of Media Arts & Design to utilize streaming media (both audio and video) in the classroom. Faculty members in SMAD use a great deal of audio and motion video material in the classroom. The CIT designed, set-up, and maintains a streaming server for the faculty member. Currently, different versions of the streaming media are being tested to determine which are most effective for instructional needs. Such early "scouting" investments allow the CIT and JMU to be prepared for and plan for the rapid adoption of a particular technology or educational practice, before the need to scale is radically expressed.

This year, the mGrants program focused on supporting projects for distance or

distributed learning. These grants are also intended to introduce faculty to the possibilities of integrating distance and distributed learning technology into their courses in order to enhance instructional practices. Grants will be awarded to innovative distributed and distance-learning projects that build on the University's investments in distance technologies. Lessons learned from all mGrant projects are documented, and if possible, addressed and expressed in the faculty development services provided to a broader faculty audience at the institution.

INFRASTRUCTURE

While robust faculty development services are important to the success of faculty who use technology for teaching, it is also important to invest in the "hidden" aspects of faculty support. Investing in facilitative policies and procedures ensures that faculty can emphasize the intellectual content of online courses, rather than trouble shooting technical problems or teaching technical skills. When distance learning administrators proactively address policy, procedural and institutional barriers, faculty can focus on the course and the students, rather than struggle with registration, enrollment, grade review, or appropriate use policies. Investments that shore up facilitative procedures within an entire instructional system encourage adoption and use.

JMU has passed several milestones in the provision of an appropriate distributed and distance learning infrastructure for the University. These milestones were collaboratively reached with faculty, staff and technology administrators across divisions of JMU. These include:

- The installation of University-wide asynchronous course management systems (CourseInfo, then Blackboard).
- The integration of student enrollment data from the student administrative system (PeopleSoft) to the online student enrollment database within CourseInfo, then Blackboard, then Centra Symposium, then Centra 4.
- Migration of all distance learning academic programs to the Blackboard environment
- Recommendation to the Vice-President of Academic Affairs regarding the challenges of non-credit enrollment. Many stakeholders in non-credit enrollment were a part of this discussion, including the Registrar's office, Integrated Information Systems, Student Accounts, Graduate and Professional Studies, and the Distance Learning Faculty Advisory Group.
- In collaboration with Faculty Development Services new Blackboard training materials were developed and distributed including the multimedia CD, "Online Learning Survival Kit 2001," Blackboard Reference Guides for faculty and students, in both print and online versions, and revised web tutorials.
- The Centra and CourseInfo/Blackboard servers were relocated to a central machine room, with backup and support services defined and specified with the Information Technology division.

The migration to Blackboard 5 Level Two has resulted in a more stable server configuration, with enhanced load balancing capabilities and scalability. The CIT further customized Blackboard so that its course management features integrate with an institution-wide portal environment that provides a gateway to the web-based services of James Madison University.

To further ensure high levels of service, Blackboard and Centra Service Level

Agreements were revised to include Network Services' provision of backup support in the event that CIT personnel are unavailable to provide technical services. The revised SLAs define the role of Network Services in providing backup technical support for the Blackboard, Centra, and SQL database servers associated with those systems. The agreement with Network Services effectively ensures a 24/7 response to potential service disruptions.

With rapid, increasing use of course management systems by students and faculty, policies and procedures needed to be developed, quickly, by CIT staff. Policies have been created that address account creation, account deletion, course archiving, course copying and "recycling", course creation and deletion, course enrollment, disk quotas, and grade review. To review the policies, see: http://ddls.jmu.edu/resources/bbpolicies.asp.

These policies ensure the institution's compliance with software licenses, in addition to meeting the needs of faculty, students, administrators, the academic calendar, and statewide institutional reporting guidelines. Some policies required endorsement from other governing bodies on campus, including academic council.

ADMINISTRATION

To ensure the instructional success of distributed and distance learning faculty, an administrative foundation, which supports all support activities of the institution, is required. These activities include collaborating with faculty, supporting faculty at an institutional level, coordinating support services with key technical personnel, consulting with the library, resolving registration and enrollment issues and addressing institutional concerns and challenges. Much attention is given to communicating horizontally and vertically to faculty and administrators. Feedback and suggestions are evaluated and quickly implemented.

At the core of our success is the organizational integration of all support functions. Faculty Development Services, Production and Grant Services, and Distributed and Distance Learning Services are housed together, with staff working on overlapping projects and initiatives.

An ongoing challenge to the institution concerns the ownership of online content. Faculty and/or University ownership of online courses is already being addressed in an updated Intellectual Property policy, which will be shared with the University community in the coming academic year. In addition, recognizing and rewarding faculty for excellence in the development and teaching of online courses should be addressed. Distance and distributed learning offerings of the University require investments in other support services for faculty and students, including accessible library resources, online assessment of student performance, expanded technical support services and reliable, high performance networks and network connections:

- Both in-residence and non-traditional students need access to library research resources via the web. As part of the University's distributed and distance education efforts, a proxy server was implemented to enable students and faculty not connected to the campus network to take advantage of the library's digital resources for study or research. Recent agreements through VIVA and other consortiums and partnerships have increased JMU student access to online research and study resources. CIT staff are working with library faculty to integrate new library systems and online digital resources in Blackboard.

- Distance education courses, like all University courses, require assessment of individual performance. Computerized grading systems are an integral part of online education. JMU has developed an online testing and quizzing application, IBEX (Internet-Based EXercises and EXams) to meet this need.
- Technical support is critical to the success of distributed and distance learning courses. As distance learning programs and associated demands for technical support continue to increase, the University will need to review the need to move from limited technical support to seven-day, 24-hour support services for faculty and students.

In March of 2001, the State Council for Higher Education in Virginia approved a new policy to facilitate the transfer of distance learning credit between institutions in the state. Course content, not the course delivery method, will now be the primary measure of determining the acceptance of transfer credits between two-year and four-year institutions. In other words, an institution cannot summarily refuse to accept a course for transfer credit, simply because that course was offered at a distance.

In the Commonwealth of Virginia, legislation authorizing electronic tuition rates is included in the 2000-02 Virginia Appropriations Act. This act grants the governing boards of colleges and universities authorization to assess non-resident learners a differential tuition rate, which could be lower than the out-of-state tuition rate for a specific institution. According to General Provision 4-2.01:

> Tuition and fee revenues from nonresident students taking courses through Virginia institutions from the Southern Regional Education Board's Southern Regional Electronic Campus must exceed all direct and indirect costs of providing instruction to those students. Tuition and fee rates to meet this requirement shall be established by the Board of Visitors of the institution.

The method of calculating tuition and fees for nonresident students that this provision endorses is one that is based on recouping the total cost of course development and delivery. An electronic tuition rate may be set below the out-of-state rate, as long as it meets or exceeds the direct and indirectcosts of providing instruction. The legislature also explicitly identifies each institution's Board of Visitors as the body responsible for authorizing an electronic tuition rate. Some institutions in our commonwealth have aggressively taken advantage of this legislation. Old Dominion University offers nine undergraduate degree programs to out-of-state learners at a tuition rate comparable to its in-state tuition rate. The Board of Visitors at Virginia Tech has recently passed a resolution that allows that institution to offer courses and programs at a variety of tuition rates for distance learners.

The establishment of appropriate non-credit and for-credit tuition and fees for James Madison University is currently the biggest obstacle to the expansion of distributed and distance learning efforts at this institution. With the current high rate set for all web-based distance learning offerings of the institution, programs whose costs are low and whose "market" tuition rate are also low, are prohibited from taking advantage of such technologies. Interest in graduate and professional programs of the institution has dropped dramatically in the past few years. The new College of Graduate and Professional Programs at JMU, created to address this concern, would be able to expand

rapidly using online technologies as a method to deliver graduate and professional offerings. However, without a change in the web-based distance learning tuition rates of the institution, these benefits cannot be realized.

Addressing the tuition issue would require several steps, including:

- Set-up the SA (PeopleSoft) to accommodate variable tuition structures
- Set-up the SA (PeopleSoft) to generate variable bill collection features, such as billing individual students, billing a grant project, or billing an employer
- Address concerns regarding in-state, out-of-state, and electronic tuition/participation rates for distance learners
- Develop a policy for the establishment of differential or variable tuition structures that addresses the recovery of direct and indirect costs for specific programs.
- Acquire Board of Visitors approval of guidelines for differential or variable tuition structures
- The development of a process to recover revenue for cost-recovery based units.
- Defining appropriate tuition rates for Internet-based distance education for all potential markets

The adoption of distributed and distance learning technologies at James Madison University has led to both the creation of innovative instructional opportunities as well as new organizational challenges. Our experience has shown that the implementation and management of academic technology resources depends on the successful integration of several key factors: 1) Faculty development services that offer hands-on training, peer mentoring, and one-on-one project development assistance; 2) Incentive programs that promote faculty research and development, leading to technologically innovative curricular applications; 3) Infrastructure support providing continuous, uninterrupted user access to online instructional systems, as well as policies and procedures that facilitate the adoption and use of system resources; 4) Administrative coordination and effective communication with other organizational units that have an impact on the delivery of distributed and distance learning programs and services.

Table 1

Number of Training Events and Attendances *(FY00-01)*		
Training Topic	Number Events	Number Attendances
Distance Learning (CourseInfo/Blackboard, Centra, WebBoard, IBEX, Madison Digital Image Database)	**54** (20 customized)	**527**
Web Site Development (HTML, Dreamweaver, FrontPage, ASP)	**22** (5 customized)	**290**
Web Support (Audio/Video Media for the Web, Acrobat, Photoshop, Flash, Writing for	**10** (1 customized)	**60**

the Web)		
Other (VTEL, Tracking Changes in Word, Copyright, Full-Text Library Resources, iMovie, Scanning, PowerPoint)	**10** (2 online)	**72**
What's Up?	**9**	**102**
TOTAL	**105**	**1051**