

RECOMMENDATIONS RE FACULTY AND CURRICULUM DEVELOPMENT

SETTING AND ACHIEVING GOALS

The commitment to instructional technology on the part of the University and its campuses should be stated in terms of explicit goals, priorities, and plans. Since the use of instructional technology should not be a piecemeal use of technological applications in instruction but instead a innovative approach to the teaching and an enhancement of the learning, we need to articulate a comprehensive vision of what this entails.

Recommendation 1: The University and each college should be encouraged to articulate in their mission statements the goal of preparing students for citizenship in a technology- and information-rich society.

Rationale: Students must be able to find, use, and evaluate information important to their careers and their lives as citizens as well as to communicate and work effectively using the prevailing technological tools.

Recommendation 2: With some guidance from the University, the curriculum committees of each college should identify the information and technology competencies students should have to fulfill the college's mission. The committees should also see to it that the curriculum in each case is structured to help meet the required competencies.

Rationale: New statewide K-12 standards mandate that students be prepared to use technology. As a public university, we should build upon and exceed these standards. Competencies could be set on a college-wide basis or by major. A University-wide advisory group could develop model competencies as a guide, but colleges should be free to develop their own competency requirements. These could include, for undergraduate as well as graduate students, means of earning an information technology certificate, potentially a valuable job credential.

Recommendation 3: Individual colleges should engage in strategic planning processes, involving broad representation from the campus community, for the ongoing integration and management of technology in the instruction they offer.

Rationale: Besides ensuring students have opportunities to learn and use technology in their coursework, taking a wide (and a long) view is the best way to clarify both the role of instructional technology in a college's curriculum and the need for faculty development and training efforts.

Recommendation 4: The University should also engage in strategic planning/management as an ongoing process, with broad representation from the University community, in order to coordinate work with instructional technology and facilitate cross-campus initiatives.

Rationale: University-wide planning is critical to reaping an advantage of a multi-campus system: achieving efficiencies in coordinating support and synergies in projects reaching across campuses.

COMMUNITY-BUILDING

The University should do everything possible and (and urge campuses to do everything possible) to ensure the pooling and sharing of information about instructional technology; nothing is more vital (or less expensive) as we strive to move from a culture of relatively isolated pockets of innovation to one in which effective practices in technology-enhanced teaching are widely known and implemented.

Recommendation 1: Taking advantage of the special edge a multi-campus institution should have in drawing on expertise, the University should create a CUNY-wide clearinghouse to collect and disseminate effective strategies and models for technology-enhanced teaching.

Rationale: The best way to reach faculty is with effective models of what works, particularly in their specific fields. These would include useful models and means of web and multimedia design, videography, facilitation of online discussion and group work, etc. The team presiding over this clearinghouse would itself be a resource, available for consultation and campus visits.

Recommendation 2: The University should promote a sense of community among faculty working with technology-enhanced instruction by sponsoring local programs and collaborating with local educational institutions (including K-12). Additionally, the University should take a leadership role and also support participation in state, regional, and national organizations that foster such instruction.

Rationale: Again, campuses would benefit from networking with local institutions and pooling expertise (including making their faculty development programs available to members of other campuses). They would also benefit from connecting with organizations and programs like MERLOT that are part of the larger scene. The cost of participation in such programs (EDUCAUSE, for instance) may be beyond the budget of a single campus, yet participation benefits (and enhances the visibility of) CUNY as a whole even as it enriches individual campuses.

Recommendation 3: The University should work to ensure that faculty are informed enough to be part of the decision-making processes shaping technology-enhanced teaching and attendant policies. This effort may include, but not be limited to, an ongoing series of discussions, speakers, and forums, covering a wide variety of topics and delivered through the University's distributed media conferencing system.

Rationale: An important goal of faculty development is not just to interest faculty in technology-enhanced instruction but to enable them to guide the application of technology to pedagogical goals. As it happens, the technology for cross-campus conferencing with groups of interested faculty is in place in the form of the distributed media system, an effective mechanism for community-building and intercampus collaboration.

SUSTAINABILITY

The University and individual campuses should affirm that the commitment to instructional technology is an enduring one. Technology-enhanced instruction is not a passing fad but a major transformation in the delivery of instruction, one that requires a maintenance of effort, a capacity to build on an ever-increasing store of knowledge about systems and strategies, and a consistently high priority.

Recommendation 1: The University should ensure -- and should encourage individual campuses to ensure -- that faculty development for work with instructional technology takes place in a context that includes ongoing technical support, easily available consultation on teaching/learning questions, and accessible, up-to-date hardware and software.

Rationale: Faculty support must go beyond one-shot workshops. While these can serve as important catalysts, they are not sufficient. The design, development, and evaluation tasks associated with technology-enhanced instruction are complex and extend over long periods of time; support must be available and reliable across such periods.

Recommendation 2: The University should do all it can (and encourage campuses to do all they can) to make training and faculty development as available and efficient as possible. A variety of approaches should be incorporated in University-wide and campus plans to foster the use of instructional technology, including use of web-based tutorials, computer-based training models, and instructional materials and models provided by organizations and programs like MERLOT and PT³.

Rationale: Efficiency is no less important to sustainability than enduring commitment; no one is well-served by having to reinvent the wheel. Following the lead taken by the Council of Chief Librarians, the University should explore the utility of available tutorials and software in helping faculty and staff as well as students reach desired information and technology competencies.

Recommendation 3: Assessment of technology-enhanced instruction and its effectiveness should hew closely to what is appropriate for traditional classroom-based instruction; gauging its effectiveness should be a matter of reflection and study, careful not to be reductive or shortsighted. At the same time, the tools of technology should be evaluated on an ongoing basis for their ability to serve faculty and student needs.

Rationale: We believe that teaching and learning can be productively assessed, especially with carefully developed models, but technology-enhanced instruction is, by definition, experimental and subject to rapid change. The University must be wary of adopting assessments of such instruction that are prescriptive, narrowly focused, or close off consideration of long-range outcomes. While we adopt an openness about ends of such instruction, the technical means should be subject to constant scrutiny. This ongoing, formative assessment should shape appropriate expectations for the outcomes of technology-enhanced instruction.

Recommendation 4: An advisory group, broadly representative, should be created to oversee the implementation of these recommendations about technology-enhanced instruction.

Rationale: Guiding the use of technological resources in support of instruction must be an ongoing process, not the work of a short-lived task force. What's more, it requires a breadth of experience and knowledge only a group can provide. Such sharing of knowledge and decision-making is potentially the greatest strength of a multi-campus system.

POLICY RECOMMENDATIONS

FACULTY WORKLOAD AND SUPPORT

The University and each college should support and recognize work with instructional technology according to established processes. Until now, such work has too often been characterized by ad hoc arrangements, without the means or mechanisms to give it due credit or assure its continuation.

Recommendation 1: Online and technology-enhanced courses should be subject to the same college practices, University bylaws, and collective bargaining agreements as other courses. Until there is much more information on technology-enhanced instruction than exists at present, emerging differences in forms of instruction should be documented rather than mandated.

Rationale: Technology-enhanced teaching should not be separated from the normal processes of the colleges. However, each college must understand the need for appropriate development and support, and each faculty member must understand the preparation and involvement necessary to teach online. As we gather information and insights on the best ways to proceed with technology-enhanced instruction, the critical consideration must be to do what is pedagogically appropriate.

Recommendation 2: Capable teaching with technology and also research and academic publication in various forms of digital media should be encouraged, considered part of the academic personnel review process, and appropriately rewarded.

Rationale: Quality instruction and scholarship have always been integral to the University's and each college's mission. Academic departments should be encouraged to develop and follow a set of general guidelines regarding the academic contributions of technology-enhanced teaching and

publication. Both should be rewarded at all levels, including provisions for taking them into account in tenure and promotion review.

Recommendation 3: Each college's academic administration should reassess support for adjunct faculty interested in technology-enhanced instruction in light of the need to offer more of such instruction.

Rationale: Extending student access to technology-enhanced instruction will often mean extending access to professional development and support for such instruction to adjunct faculty. Colleges -- either within their central administrations or at the level of academic departments -- should develop guidelines for determining how to bring adjunct faculty into technology-enhanced instruction.

ACCESS

The University and each college -- and, indeed, each faculty member -- should commit to assuring students the greatest possible access to technology-enhanced instruction. It is crucial to understand that access to such instruction entails access to up-to-date software as well as powerful hardware, adequate bandwidth as well as connectivity, effective training as well as interest, adaptive technologies for the disabled as well as general considerations of compatibility.

Recommendation 1: The University and each college should make access a prime consideration in the development of any planning for the use of instructional technology.

Rationale: Our institutional commitment to access to instruction in general is long-standing; as we expand into technology-enhanced teaching, that commitment should be extended to such instruction. Critical to the successful use of instructional technology, access tends to be distributed unequally, so effective planning must make facilitating access a guiding concern, and gauging success will in large part be gauging the extent to which access -- broadly defined -- has been provided.

Recommendation 2: The University should use its bargaining power as well as its capacity to set institutional policies to create conditions that improve access for our students.

Rationale: The University's size should help us leverage favorable treatment for our students. In addition to negotiating discounts, we can address access issues by including the cost of technology in baseline financial aid budgets and by seeking partnerships with community-based organizations (schools, libraries, community centers) to provide our students with access to facilities and training opportunities.

Recommendation 3: The University, each of its campuses, and every faculty member individually should make every effort to ensure that computer-based resources are accessible to those with disabilities.

Rationale: Technology-enhanced instruction can improve access for disabled students, but it can also create obstacles for them. We are mandated by law to address the needs of students with disabilities. In so doing, we should draw on such resources as the University's centers for assistive technology -- some, like those at Brooklyn, Lehman, and Staten Island, focusing on the deaf/hearing-impaired; some, like the CUNY Assistive Technology Satellite Center at Queens College, on those with motor disabilities; some, like Baruch's Computer Center for Visually Impaired People, on the blind or visually impaired.

INTELLECTUAL PROPERTY

The University (and each college) should ensure that standing provisions of academic freedom and faculty prerogatives as well as copyright law extend to work produced and/or used in technology-enhanced teaching.

Recommendation 1: As per current agreement, the University should continue to acknowledge that materials created by CUNY faculty and staff for technology-enhanced teaching are the property of their creators -- except when prior agreements (due to investment of significant resources by the University) dictate otherwise. Any change should be addressed by existing governance processes in matters of academic use and by collective bargaining in terms of the commercial use of such materials.

Rationale: We should treat materials produced for technology-enhanced teaching as we do materials produced for any instruction. Such material may involve major investments by the University, and some may have substantial commercial value. If adjustments in existing policy seek to balance the University's contribution to the production of such material with revenue generated by its commercial exploitation, those adjustments must be made through the appropriate avenues -- governance and collective bargaining.

Recommendation 2: Working within intellectual property law -- helping to obtain permission to use materials protected by such law as well as helping faculty and staff to understand it -- the University should also push for legal standards that facilitate the appropriate use of intellectual property in academic contexts generally and technology-enhanced contexts in particular, and it should set the appropriate example by facilitating access to materials developed within CUNY by other CUNY faculty and staff.

Rationale: Since emerging technologies may make existing laws and practices ambiguous while making it easier to use another's intellectual property without due attribution or license, the University should do all it can to prevent abuses and confusion, yet it is also in a position to facilitate appropriate use by leveraging the acquisition of permissions and licenses and also the development of policy, regulation and law.

Recommendation 3: The University should ensure that academic freedom and opposition to censorship apply the use of and access to the technology-enhanced instruction and attendant resources.

Rationale: It is central to the University's mission to produce and disseminate knowledge and ideas. Helping to address that mission, technology-enhanced teaching should not occasion any change in it or the academic freedom exercised in carrying it out; on the contrary, the University must be vigilant in guaranteeing that the use of new, often limited resources will not curtail freedoms or impose unwonted forms of censorship.

RESOURCE MANAGEMENT RECOMMENDATIONS

BUDGET

Budgetary resources devoted to instructional technology must be increased. Technology is expensive and rapidly changing; if CUNY is to keep up, and especially if it is to excel, we must see greater investment in academic technology. Because, as a matter of principle, we believe that this must not happen at the expense of other educational resources, increased investment will require strategic planning informed by abiding commitments and clear priorities.

Recommendation 1: The University should project and allocate regular and increased support for instructional technology within the annual CUNY budget.

Rationale: Useful as funding from grants and donations can be -- and these are currently the principal sources of funding for much if not most of the work with instructional technology throughout the University -- they produce islands of innovation and excellence rather than

systemic, lasting advances. Increased funding for technology must become an integral and prioritized focus of the University's fiscal planning and spending.

Recommendation 2: A standards committee should be created to determine and recommend to the campuses a sense of minimal technological resources that must be made available; these should include but not be limited to a proposed replacement cycle for faculty and student equipment, a target ratio of full-time enrollments to technologically-equipped classrooms and also a target ratio of full-time enrollments to computers for general use and access.

Rationale: Budgeting for technology must also be a part of the ongoing operations budget for each campus; the campuses need minimum standards and guidelines to inform these budget decisions.

Recommendation 3: Funding for site licenses should be increased, and, to ensure strategic spending and deployment, decisions about site licenses should be coordinated both between central and campus organizations and among the individual campuses.

Rationale: With the ever-increasing expectations of the technology users in CUNY, University-wide volume leveraging is increasingly necessary. A clear structure that allows information to flow freely from the campuses to central and vice versa needs to be established to achieve synergies and efficiencies. Individual campuses may achieve cost savings through combined purchases.

Recommendation 4: In addition to increasing funding, the University should seek ways of regularizing funding streams to support academic technology, including (but by no means limited to) the use of student technology fees. These funding streams must apply equitably to both senior and community colleges, because all colleges have comparable needs. And since technological resources -- and our use of them -- change so rapidly, academic technology must be defined broadly to allow use of the funds for hardware, software, support staff, and other technological resources.

Rationale: Students come to our campuses with increased expectations regarding the use of technology. These expectations can best be met if there is reliable funding dedicated to meeting those expectations as they change. Colleges need to be able to use the funds where their technology needs are greatest.

PERSONNEL

Then number of personnel available to support the use of instructional technology must also be increased. Hard to get and to keep, such highly skilled personnel are crucial to the use of instructional technology; the reliability and efficacy of instructional technology, our very access to it, must depend on them, and the rapid growth in the use of such technology means we have too few at present.

Recommendation 1: The University should fund more full-time lines for support of instructional technology, ensuring that, over a three-year period, each campus receive at least two new lines.

Rationale: A shortage of full-time support staff is a major problem across the University, particularly in the area of instructional technology as the campuses become more reliant on web-based instruction requiring access 24 hours a day 7 days a week. Part-time staff can be (and are being) used to address this problem, but the backbone of any support must be full-timers who ensure expertise, provide training, and control operations on a continuous basis.

Recommendation 2: Colleges should create full-time instructional technology specialist position(s).

Rationale: The rapid advancement and complexity of hardware and software systems for instructional applications has accelerated the increased demand on support for teaching with

instructional technology. Colleges should have such personnel, not just working as faculty consultants and introducing technology into classrooms, but also coordinating campus, inter-campus, and CUNY-wide efforts to promote instructional technology and distance education.

Recommendation 3: The University should give campuses more options in defining technology-related positions, notably by giving both academic and administrative departments and programs more flexibility in the recruitment, appointment, and appropriate promotion of personnel in the Computer Lab Technician, Higher Education Officer, and Information Systems Specialist positions.

Rationale: The Information Systems Series does not extend to academic departments; this exemplifies how full-time lines for technology-related positions can be characterized by restrictions that make the hiring process difficult, classifications cumbersome, and reward structures inappropriate. More flexibility is essential in addressing the need for more full-time support staff.

INFRASTRUCTURE

The University should do all it can to ensure the compatibility and quality of technology platforms and networks; systems integration promises increased efficiency, while high quality is necessary for realizing the potential of instructional technology.

Recommendation 1: Intercampus and intracampus networks should provide high-speed connectivity, supported by the necessary network management tools and staff and delivered to desktop components sufficiently equipped to take full advantage of such connectivity.

Rationale: The standalone workstation is a relic of the past; technology is now about connectivity (including wireless connectivity): information retrieval, communication, data transfer and access, all of which workstations need the capacity to deliver, just as networks do -- ideally, at all hours. In instructional technology, moreover, data transfer often takes the form of streaming audio/video and multimedia packages, for which high power and connectivity are not just desirable but necessary.

Recommendation 2: The University needs to go beyond supporting minimal standards (See Budget Recommendation #2) to support intermediate and advanced computing and networking applications appropriate for a research university.

Rationale: In many fields, applications important to instruction require more than standard computing and connectivity; these include computer graphics and animation, visualization, video networking, remote control of experimental and data collection devices, and computer simulations. Such applications can strain the resources of individual campuses, and should not require cuts in basic services, but they may be managed centrally or as collaborative projects among campuses.

Recommendation 3: The University should provide support for and coordination of the integration of systems currently running on multiple platforms (e.g., SIMS and CUPS on the IBM mainframe, UNIX-based systems such as Blackboard, e-mail servers).

Rationale: Data integration is a powerful, logical trend, but "legacy" systems created for specific purposes tend to keep data discrete, locked in old systems and configurations. We need to make data more exportable (so that, for instance, SIMS data can be used in online courses and web-accessible course schedules, CUPS data can be used to create student e-mail accounts, etc.). The point is not to "free" the data for data integration's sake but to ensure that students' needs are addressed by facilitating registration for online courses, cross-campus enrollments, integrated work in continuing education, and so on.