

Technology and Learning Focus Group Report

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Part C: Summary Statement (Strengths, Challenges, Opportunities)

Introduction

Information Technology flows through all aspects of campus life. At the same time, NDSU has remained flexible in adopting new technology. A real strength has been our history of supporting academic uses of technology. For example, during the late seventies, NDSU became the host site for academic computing throughout the Higher Education Computing Network (HECN). This forward thinking continues with our Internet2 participation and many of the other technologies mentioned in Part B of this document. Our status as a sparsely populated, rural state enhances our collaboration with others in the state (e.g, STAGEnet consists of higher education, K-12, state government, and county governments). Within NDSU our diverse academic programs also ensure that we remain flexible – “one size does not fit all” when applying IT or learning solutions. This report divides into two sections; looking first at technology from a off-campus or continuing education perspective in Part A and then enumerating various technology initiatives in Part B.

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Part A: The Best Practices and Protocols

1. Institutional Context and Commitment

Electronically offered programs both support and extend the roles of educational institutions. Increasingly they are integral to academic organization, with growing implications for institutional infrastructure.

1a. In its content, purposes, organization, and enrollment history if applicable, the program is consistent with the institution's role and mission.

- What is the evidence that the program is consistent with the role and mission of the institution including its goals with regard to student access?

The use of technology and learning at NDSU is broadly consistent with role and mission as evidenced by our current mission, values, and vision statements, the most current of which are located at <http://www.ndsu.nodak.edu/about/mission/>.

- Is the institution fulfilling its stated role as it offers the program to students at a distance, or is the role being changed?

The NDSU mission extends outside the borders of North Dakota to include regional, national, and international communities and assumes a coordinating role in the state's academic computing activity. As a land-grant institution, NDSU's mission is appropriately broad and committed to outreach in a variety of contexts.

1b. It is recognized that a healthy institution's purposes change over time. The institution is aware of accreditation requirements and complies with them. Each accrediting commission has established definitions of what activities constitute a substantive change that will trigger prior review and approval processes. The appropriate accreditation commission should be notified and consulted whether an electronically offered program represents a major change. The offering of distributed programs can affect the institution's educational goals, intended student population, curriculum, modes or venue of instruction, and can thus have an impact on both the institution and its accreditation status.

- Does the program represent a change to the institution's stated mission and objectives?

The use of technology to deliver instruction, research, or service does not represent a change in either NDSU's mission or objectives. Rather it is a tool that enables and enhances all that we do.

- Does the program take the college or university beyond its “institutional boundaries,” e.g., students to be served, geographic service area, locus of instruction, curriculum to be offered, or comparable formally stated definitions of institutional purpose?

Technology-enabled learning is not outside institutional boundaries as defined in law, regulation, or policy. Such activities do not conflict with the laws of the State of North Dakota (*Constitution of the State of North Dakota*, Article VII <http://www.state.nd.us/lr/cencode/Const.pdf>, *North Dakota Century Code*, Chapter 15-12 <http://www.state.nd.us/lr/cencode/T15C12.pdf>), governance and regulation by the North Central Association - Higher Learning Commission (<http://www.ncahigherlearningcommission.org> also see 1996 re-accreditation), the North Dakota Board of Higher Education (http://www.ndus.edu/policies_procedures/default.asp), or NDSU policy (<http://www.ndsu.edu/ndsu/deott/bulletin/cat0204/index.htm>).

- Is the change truly significant?

The inclusion of technology as a delivery mechanism for instruction does not represent a significant change in accreditation status because NCA - HLC approved offering distance delivery of existing degree programs and related courses within the state and within the region after the last site-visit in 1996 (Accreditation report, 1996) and because distance learning is consistent with the current mission, goals, values, and vision statements.

1c. The institution’s budgets and policy statements reflect its commitment to the students for whom its electronically offered programs are designed.

- How is the student assured that the program will be sustained long enough for the cohort to complete it?

As with any NDSU program, students are assured their program will be sustained long enough for cohorts to complete it.

- How are electronically offered programs included in the institution's overall budget structure?

The majority of electronically offered programs are budgeted at the departmental and/or college levels. Examples include the College of Human Development and Education, which houses three such programs--Family Financial Planning, a consortial master’s degree in the Department of Child Development and Family Science delivered online; Educational Leadership, also a consortial master’s degree in the School of Education delivered via interactive video; and Counselor Education, a master’s degree in the School of Education also delivered via interactive video—and the College of Arts Humanities and Social Sciences, which houses master’s and PhD programs in Communication in development for online delivery. Additional programs are in various stages of adaptation for electronic deliveries. In terms of infrastructure support, NDSU administration appropriates funds for salaries, operating, and equipment. The Provost annually commits funds for the online course

management system currently in use (Blackboard). In addition, the University administration provides supplemental funds as needed. NCA listed the Library among "concerns" in the 1996 site visit: "An inadequate proportion of the institutional budget is committed to library acquisitions and services."

Currently, funding is available allowing the Library to maintain collections and services. Complete budget information for the Libraries is located at: <http://www.lib.ndsu.nodak.edu/collections/collmgmnt/statistical.php>. The Online Dakota Information Network (ODIN) also allows the University System's institutions to share resources for the benefit of all (<http://www.odin.ndak.edu/webpals/home.html>).

- What are the institution's policies concerning the establishment, organization, funding, and management of electronically offered programs? Do they reflect ongoing commitment to such programs? (See also item **1e** below.)

Policies concerning electronically offered instruction are not separately identified from existing policies governing any other type of instruction. Admission for international students is handled through the Office of International Programs (<http://www.ndsu.edu/International/index.shtml>). Degree approval is a function of the Academic Affairs process at departmental, college, and University Senate levels and sanctioned by the State Board for Higher Education (http://www.ndus.edu/policies_procedures/sbhe_policies/policy.asp?ref=2369). Specific policies governing distance learning at the State Board for Higher Education level are in place (http://www.ndus.edu/policies_procedures/sbhe_policies/policy.asp?ref=2378).

1d. The institution assures adequacy of technical and physical plant facilities including appropriate staffing and technical assistance, to support its electronically offered programs.

NDSU might improve the integration of technology and learning by investigating the establishment of a position to handle the coordination of IT efforts (e.g. a Chief Information Officer (CIO)). Further discussion is needed on this topic.

Context is provided for specific IT planning and operations through the IT vision statement (<http://www.ndsu.edu/its/about/vision.shtml>).

- Do technical and physical plant facilities accommodate the curricular commitments reviewed below, e.g., instructor and student interaction (**2e**), and appropriateness to the curriculum (**2a**)?

The Computer Information Technology Planning and Goals (CITPG) Committee of University Senate bylaws indicate the institution's commitment to quality in technology-related activities (<http://www.ndsu.nodak.edu/ndsu/cpg/about/bylaws02.htm>).

- Whether facilities are provided directly by the institution or through contractual arrangements, what are the provisions for reliability, privacy, safety and security?

North Dakota is one of a very few states where all public higher education institutions share information technology services. It has proven to be a very successful model because it provides a significant level of computing and networking capabilities and support for students, faculty, and staff in the North Dakota University System (NDUS) while holding down costs. The Higher Education Computer Network (HECN,

http://www.ndus.nodak.edu/NDUS_Tech_Info/services/display.asp?categoryID=5)

also coordinates with the Information Technology Department (ITD, <http://www.state.nd.us/itd/>) of North Dakota state government in use of the state network and works collaboratively toward a shared NDUS, state government and K-12 enterprise resource planning initiative called ConnectND

(<http://www.nodak.edu/connectnd/>).

- Does the institution's budget plan provide for appropriate updating of the technologies employed?

HECN services are provided by Information Technology Services staff located at North Dakota State University (NDSU), Information Technology Systems and Services staff located at the University of North Dakota (UND), a financial systems director located at NDSU, and a student information systems director and staff located at UND. A number of committees composed of NDUS staff and users meet regularly to guide HECN services and support. STAGEnet collaborations

(<http://www.stagenet.nd.gov>) also extend the services and functions available to all.

The students are also assessed a technology fee that directly supports them and their use of technologies (<http://www.ndsu.nodak.edu/tfac/about/#top>).

The Experiment Stations and Extension Service provide additional resources and services to the institution in support of the land grant mission. The Library also reports expenditures, new acquisitions, special needs, etc.

(<http://www.lib.ndsu.nodak.edu/services/index.php>).

- Is the staffing structure appropriate (and fully qualified) to support the programs now operational and envisioned in the near term?

Information Technology Services (ITS) employs technical people in Network Services, a 24x7 Help Desk (that works with UND on the NDUS Help Desk), LAN support, security, and workstations. NDSU is regarded as a leader, not only in the state, but in the region. As an Internet2 university, NDSU enjoys fast, reliable access to other Internet2 institutions. ITS staff actively collaborate with colleagues in the NDUS, STAGEnet, and the Interactive Video Network (IVN). In addition, four full-time individuals and student assistants comprise the Libraries' IT department (<http://www.lib.ndsu.nodak.edu/>).

1e. The internal organizational structure which enables the development, coordination, support, and oversight of electronically offered programs will vary from institution to institution. Ordinarily, however, this will include the capability to:

- ❖ Facilitate the associated instructional and technical support relationships.
- ❖ Provide (or draw upon) the required information technologies and related support services.
- ❖ Develop and implement a marketing plan that takes into account the target student population, the technologies available, and the factors required to meet institutional goals.
- ❖ Provide training and support to participating instructors and students.
- ❖ Assure compliance with copyright law.
- ❖ Contract for products and outsourced services.
- ❖ Assess and assign priorities to potential future projects.
- ❖ Assure that electronically offered programs and courses meet institution-wide standards, both to provide consistent quality and to provide a coherent framework for students who may enroll in both electronically offered and traditional on-campus courses.
- ❖ Maintain appropriate academic oversight.
- ❖ Maintain consistency with the institution's academic planning and oversight functions, to assure congruence with the institution's mission and allocation of required resources.
- ❖ Assure the integrity of student work and faculty instruction.

Organizational structure varies greatly, but it is fundamental to the success of an institution's programs. The points above can be evaluated by variations of the following procedure and inquiries:

- Is there a clear, well-understood process by which an electronically offered program evolves from conception to administrative authorization to implementation? How is the need for the program determined? How is it assigned a priority among the other potential programs? Has the development of the program incorporated appropriate internal consultation and integration with existing planning efforts

University Senate approves all courses on campus regardless of delivery method. The decision for establishing an electronically delivered course or program takes place at the departmental level.

The expansion of STAGEnet significantly improves the infrastructure available to individual instructors and their students.

- Track the history of a representative project from idea through implementation, noting the links among the participants including those responsible for curriculum, those responsible for deciding to offer the program electronically, those responsible for program/course design, those responsible for the technologies applied, those responsible for faculty and student support, those responsible for marketing, those responsible for legal issues, those responsible for budgeting, those responsible for administrative and student services, and those responsible for program evaluation. Does this review reveal a coherent set of relationships?

Yes. A good example is the Educational Leadership program jointly offered by the Tri-College University (NDSU, Concordia, MSUM) and University of North Dakota (UND). Complete documentation is available at the NDSU School of Education.

- In the institution's organizational documentation, is there a clear and integral relationship between those responsible for electronically offered programs and the mainstream academic structure?

Yes. To the extent possible electronic delivered programs are handled through the normal academic structure, however some idiosyncrasies remain. This is especially apparent in the administrative side where there is no good way to enroll, track, or

otherwise administer distance education students except through various “shadow databases”. For example, the Library is unable to use the normal databases when authenticating distance education students and often must call individual offices for current information.

- How is the organizational structure reflected in the institution’s overall budget?
- How are the integrity, reliability, and security of outsourced services assured?
- Are training and technical support programs considered adequate by those for whom they are intended?
- What are the policies and procedures concerning compliance with copyright law?
- How does program evaluation relate to this organizational and decision-making structure?

1f. In its articulation and transfer policies the institution judges courses and programs on their learning outcomes, and the resources brought to bear for their achievement, not on modes of delivery.

- What are the institution’s policies concerning articulation and transfer? What are decisions regarding transfer of academic credit based upon?

The North Dakota University System (NDUS) General Education Requirements Transfer Agreement (GERTA), appears on p. 25 and p. 191 in 2002-2004 Bulletin as well as in State Board policy

http://www.ndus.edu/policies_procedures/sbhe_policies/policy.asp?ref=2377.

The North Dakota University System Online (NDUSO) is a consortium of all 11 North Dakota University System campuses to offer online courses leading to Associates Degrees and a variety of certificates. This entity is seeking separate accreditation by NCA <http://www.nduso.org>

Tri-College University Consortium (TCU) consists of North Dakota State University (NDSU), Minnesota State University-Moorhead (MSUM), and Concordia College and is administered by Dr. Nathan Davis-Provost <http://www.tri-college.org/index2.htm>

The Great Plains Interactive Distance Education Alliance (GPIDEA) is an alliance of 10 land-grant institutions for the purpose of jointly offering Master's degrees online in Family Financial Planning, Gerontology, and Youth Development to date. The alliance was formed from a FIPSE grant to establish models for consortia to form and function effectively. Copies of the memoranda of agreement are available from Dean's Office, College of Human Development and Education as well as Division of Distance and Continuing Education. Additional information is available at <http://www.gpidea.org/>.

- Is the institution internally consistent in its handling of articulation and transfer issues, or do different divisions have different policies and procedures?

1g. The institution strives to assure a consistent and coherent technical framework for students and faculty. When a change in technologies is necessary, it is introduced in a way that minimizes the impact on students and faculty.

- When a student or instructor proceeds from one course or program to another, is it necessary to learn another software program or set of technical procedures?

Although there may be a few courses using other course management programs or even basic html web pages, the campus standard that is fully supported is Blackboard.

NDSU communicates changes in software, hardware, and other technical systems using a variety of media and means, including the campus in-house weekly newsletter *It's Happening at State* (<http://www.ndsu.nodak.edu/ndsu/news/state/ihas>), the Information Technology Services web site, *ITS News* (<http://www.ndsu.edu/its>), *ITS News Flash* pdf files

(http://www.ndsu.nodak.edu/its/about/pubs_policies/index.shtml), and the *Outage Notification List* (<http://listserv.nodak.edu/archives/its-notify.html>).

The NDSU Extension Service established an Information Technology Committee and has proposed policies (<http://www.ag.ndsu.nodak.edu/policy/AITAG.htm>). In addition the College of Agriculture IT committee also established baselines for hardware and software which can be found at:

<http://www.ag.ndsu.nodak.edu/policy/hardware.htm> and

<http://www.ag.ndsu.nodak.edu/policy/software.htm>

The IT Baseline Concept can be found electronically at:

<http://www.ag.ndsu.nodak.edu/policy/baseline.htm>. The NDSU Agriculture IT Baseline, Software Baseline and Hardware Baseline recommendations have been shared with the NDSU University IT Committee.

- When new software or systems are adopted, what programs/processes are used to acquaint instructors and students with them?

Support, orientation, and training are available to acquaint faculty

<http://www.ndsu.nodak.edu/its/blackboard/faculty.shtml> and students

<http://www.ndsu.nodak.edu/its/blackboard/students.shtml> to changes in the course

management system—Blackboard. For training on technology issues other than Blackboard, a Technology Learning Center has been developed for students

<http://www.ndsu.nodak.edu/tlc>, and a formal training program is available for faculty and staff [http://alice.cc.ndsu.nodak.edu/cgi-](http://alice.cc.ndsu.nodak.edu/cgi-bin/seminar/ListSeminars.pl?Type=general)

[bin/seminar/ListSeminars.pl?Type=general](http://www.ndsu.nodak.edu/lunchbox), including a Technology Lunchbox Series <http://www.ndsu.nodak.edu/lunchbox>.

NDSU provides software training for the NDSU campus as well as the North Dakota University System. This area is expanding with the creation of the Web and Technology Education Center (WTEC) and expects to include accessibility training. Currently, training is not offered to distance students but is planned for the future.

The President's Office sponsors a Development Grant Program to assist faculty and staff with professional development.

1h. The institution provides students with reasonable technical support for each educational technology hardware, software, and delivery system required in a program.

- Is a help desk function realistically available to students during hours when it is likely to be needed?

Yes. During the academic year, the Help Desk is available Monday through Friday 8 AM to 9 PM, Saturday 1 PM to 5 PM, Sunday 2 PM to 10 PM, and closed holidays. During breaks, hours are Monday through Friday 8 AM to 9 PM. During the summer months, hours are Monday through Friday 7:30 AM to 9 PM. Web site for the Help Desk is <http://www.ndsu.edu/its/about/people/helpdesk.shtml>. ITS has statistics showing usage after these hours are minimal.

- Is help available for all hardware, software, and delivery systems specified by the institution as required for the program?

The Help Docs index page provides students with a full range of hardware, software, cluster, and course delivery information

http://www.ndsu.edu/its/help/help_index.shtml. In addition, students can receive technical assistance directly from the Division of Distance and Continuing Education (<http://www.ndsu.edu/DCE>) for courses administered through that unit and from the North Dakota Interactive Video Network for questions related to video conferencing (<http://www.ndivn.nodak.edu>). The Library supports off-campus students in need of access to library resources (http://www.lib.ndsu.edu/newsite_bk/Services/dist-ed-services.html). In addition, the Agriculture Communications department provides technical assistance and training for College of Agriculture faculty and staff.

- Does the help desk involve person-to-person contact for the student? By what means, e.g., email, phone, fax?

The Help Desk is available to students in person (IACC 228), by phone (701-231-8685, Option 1), or e-mail (ndsu.helpdesk@ndsu.nodak.edu).

- Is there a well-designed FAQ (Frequently Asked Questions) service, online and/or by phone menu or on-demand fax?

Although it is not called an FAQ page, the Help Desk provides a web site with critical questions and answers related to a variety of technology usage issues

<http://www.ndsu.edu/its/help/help.shtml>. In addition, the Help Desk publishes its phone inquiries by term <http://www.ndsu.edu/its/metrics/metrics.htm> and "problem ticket" statistics by month

<http://www.ndsu.nodak.edu/its/remedystats/remedystats03.htm>.

1i. The selection of technologies is based on appropriateness for the students and the curriculum. It is recognized that availability, cost, and other issues are often involved, but

program documentation should include specific consideration of the match between technology and program.

- How were the technologies chosen for this institution's programs?

Needs are met as the budget allows. Faculty and staff are surveyed through a collaborative effort by ITS and Agricultural Communications. Hardware and software standards and committees have been established. On an annual basis, the University Senate standing committee on Computer Information Technology Planning and Goals (CITPG) and Information Technology Services (ITS) gather and assess student, staff, and faculty needs for software installed in campus computer clusters (<http://www.ndsu.nodak.edu/its/index.php?ArtID=289> and see also http://www.ndsu.nodak.edu/its/clusters_equip/support.shtml). ITS cluster/lab computers are replaced on a 3-year cycle.

- Are the technologies judged to be appropriate (or inappropriate) to the program(s) in which they are used?

Faculty in departments adapt courses or course materials for electronic access by students based on need if they believe the delivery type is appropriate for the curriculum in question. Support structures within the university are available to assist faculty in determining appropriateness of various technologies.

- Are the intended students likely to find their technology costs reasonable?

The Technology Fee Advisory Committee (TFAC) makes recommendations to the Provost regarding improvements in technology-related capabilities (<http://www.ndsu.nodak.edu/tfac>).

- What provisions have been made to assure a robust and secure technical infrastructure, providing maximum reliability for students and faculty?

ITS participates in the Information Technology Plan (NDSU 03-05 Plan Version S-6, http://www.ndsu.edu/its/about/documents/Information_Technology_Plan.doc), the Information Technology Plan University Systems 03-05 Plan Version B-2 (NDUS IT Plan, <http://www.state.nd.us/itd/planning/doc/2002-plans/215.pdf>), and the Statewide Information Technology Plan (<http://www.state.nd.us/itd/planning/doc/2002/fullplan.pdf>).

ITS has implemented a comprehensive centralized backup solution for all servers, an expanded storage infrastructure including SAN, a major upgrade of core network switching equipment, a plan to convert all campus buildings to switched 10/100 to the desktop, an innovative bandwidth management system for regulating usage by students living in residence halls, a second computer room in R1 mirroring data from multiple servers, a backup server and tape library relocated to R1, motor-generator backed power for both IACC and R1 computer rooms and networking equipment, SiteScope to centrally monitor system services and networking. In addition, ITS is contemplating high-availability for file/print services (clustering/mirroring).

- Given the rapid pace of change in modern information technology, what policies or procedures are in place to keep the infrastructure reasonably up-to-date?

The above reference addresses keeping infrastructure up to date.

1j. The institution seeks to understand the legal and regulatory requirements of the jurisdictions in which it operates, e.g., requirements for service to those with disabilities, copyright law, state and national requirements for institutions offering educational programs, international restrictions such as export of sensitive information or technologies, etc.

- Does institutional documentation indicate an awareness of these requirements and that it has made an appropriate response to them?

Services for those with disabilities are identified by the Library (<http://www.lib.ndsu.nodak.edu/services/Disabled.php>) and by ITS Web Development (http://www.ndsu.edu/wwwdev/web_team/resources/site.shtml). Every effort is made to bring electronic content into Bobby standards for those with disabilities (<http://bobby.watchfire.com/bobby/html/en/index.jsp>).

The North Dakota University System (NDUS) has a policy that NDSU supports and publicizes (<http://www.ndsu.edu/policy/710.htm>) regarding acceptable computer use and copyright policy. ITS monitors activity regarding the use of NDSU networks to illegally disseminate copyrighted materials. ITS also provides Digital Millennium Copyright Act (DMCA) coordination for the University System.

The office of the General Counsel provides information related to copyright and intellectual property (http://www.ndsu.nodak.edu/ndsu/ochoa/general_counsel/copycert.html and http://www.ndsu.nodak.edu/ndsu/ochoa/general_counsel/intellectual.htm). In addition, the Library assures copyright compliance in all of its activities. Interlibrary Loan pays royalties to the Copyright Clearance Center as needed. Items are not placed on Reserve without adequate copyright assurances. The Library strictly adheres to all contractual agreements with vendors (database producers, aggregators, publishers, etc.). The campus attorney reviews and approves all contracts for signature.

2. Curriculum and Instruction

Methods change, but standards of quality endure. The important issues are not technical but curriculum-driven and pedagogical. Decisions about such matters are made by qualified professionals and focus on learning outcomes for an increasingly diverse student population.

2a. As with all curriculum development and review, the institution assures that each program of study results in collegiate level learning outcomes appropriate to the rigor and breadth of the degree or certificate awarded by the institution, that the electronically offered

degree or certificate program is coherent and complete, and that such programs leading to undergraduate degrees include general education requirements.

- What process resulted in the decision to offer the program?

Departmental faculty and administration responded to identified needs and explored the potential for technology to overcome distance barriers. Two graduate programs were adapted several years ago for delivery via statewide interactive video network. An additional graduate program is currently being adapted for online delivery. At present there are no undergraduate programs ready for distance delivery. There are, however, various courses and in some cases sequences of courses currently being offered using a number of differing technologies.

Normal course approval processes apply, regardless of delivery method (http://www.ndsu.edu/ndsu/deott/academic_affairs). Existing credit courses need no additional approval to be delivered by distance alone or in cases where technologies such as Blackboard are used to enhance existing courses.

The only exceptions to the above approval process are courses numbered 600 (any prefix), which are administered by Continuing Education. These courses are NOT degree applicable and follow a different approval path, regardless of delivery mechanisms. Department chairs, College deans, and the Graduate dean approve all courses bearing the number 600 based on a course proposal, syllabus, and qualifications of instructor.

- By what process was the program developed? Were academically qualified persons responsible for curricular decisions?

See preceding item and 2b below.

- How were "learning outcomes appropriate to the rigor and breadth of the degree or certificate awarded" established? Does the program design involve the demonstration of such skills as analysis, comprehension, communication, and effective research?

Learning outcomes are established at the department level, and courses support the overall expectations a department has for its program completers. Course adaptation for distance delivery includes consideration of overall progress toward departmental expectations for student success. General education courses fall under the campus general education committee's rubric for student achievement.

- Is the program "coherent and complete?"

The few programs already adapted for distance delivery thus far and those in development are already coherent and complete via traditional means. Adaptation to distance delivery includes attention to these significant concerns.

- Are related instructional materials appropriate and readily accessible to students?

The Library supports resource materials in print and electronic formats; the Bookstore facilitates purchase of online materials if appropriate. Courses delivered online generally include online materials that students can download. Courses delivered through interactive video generally include access to materials either online or via mail/fax delivery to the student or instructional site.

2b. Academically qualified persons participate fully in the decisions concerning program curricula and program oversight. It is recognized that traditional faculty roles may be unbundled and/or supplemented as electronically offered programs are developed and presented, but the substance of the program, including its presentation, management, and assessment are the responsibility of people with appropriate academic qualifications.

- What were the academic qualifications of those responsible for curricular decisions, assessment, and program oversight?

All curricular decisions, assessment, and oversight begin with department-level faculty, committees, and administration. As noted above, an exception to the normal approval process exists for courses numbered 600 (any prefix) administered by Continuing Education. These courses are NOT degree applicable and "academically qualified persons" may be individuals other than those within a department. A nomination to teach process for such individuals requires an examination and approval of credentials performed by Department chairs, College deans, and the Graduate dean.

- What are the academic qualifications of those presenting and managing the program?

Qualifications of faculty adapting courses or course materials for technology-based delivery are the same as for traditional course deliveries. Additional training in specific technological skills as well as instructional design is available for faculty.

- If the principal instructor is assisted by tutors or student mentors, what are their qualifications?

Instructional assistants have qualifications appropriate by unit standards for the instructional content; such decisions are not based on technological skill.

- Are these qualifications considered appropriate to the responsibilities of these persons?

Departments determine who is qualified to teach any course, and such decisions are made regardless of delivery mechanism.

2c. In designing an electronically offered degree or certificate program, the institution provides a coherent plan for the student to access all courses necessary to complete the program, or clearly notifies students of requirements not included in the electronic offering. Hybrid programs or courses, mixing electronic and on-campus elements, are designed to assure that all students have access to appropriate services. (See also 2d below, concerning program elements from consortia or contract services.)

- How are students notified of program requirements?

Courses and course materials are generally available in a variety of formats for the greatest possible access, and such options are generally made known to students through the course syllabus. Programs generally use department-level contacts for notifying students at the point of acceptance/entry. Websites, brochures, and other public domain means of communication are also used.

- If the institution relies on other providers to offer program-related courses, what is the process by which students learn of these courses?

Students are kept apprised of course offerings via published term schedule, institutional web pages, various communiqués from departments, and consortial published matter where appropriate.

- Is the total program realistically available to students for whom it is intended? For example, is the chosen technology likely to be accessible by the target student population? Can target students meet the parameters of program scheduling?

Course adaptations typically respond to identified needs; students express an interest or need, which may include a particular type of technology. Ongoing assessments will endeavor to collect information about the utility of the delivery method selected.

2d. Although important elements of a program may be supplied by consortial partners or outsourced to other organizations, including contractors who may not be accredited, the responsibility for performance remains with the institution awarding the degree or certificate. It is the institution in which the student is enrolled, not its suppliers or partners, that has a contract with the student. Therefore, the criteria for selecting consortial partners and contractors, and the means to monitor and evaluate their work, are important aspects of the program plan. In considering consortial agreements, attention is given to issues such as assuring that enhancing service to students is a primary consideration and that incentives do not compromise the integrity of the institution or of the educational program. Consideration is also given to the effect of administrative arrangements and cost-sharing on an institution's decision-making regarding curriculum. Current examples of consortial and contractual relationships include:

- ❖ Faculty qualifications and support.
- ❖ Course material:
 - ❖ Courses or course elements acquired or licensed from other institutions.
 - Courses or course elements provided by partner institutions in a consortium.
 - Curricular elements from recognized industry sources, e.g., Microsoft or Novell certification programs.
 - Commercially produced course materials ranging from textbooks to packaged courses or course elements.
- ❖ Course management and delivery:
 - WebCT, Blackboard, College, etc.

- ❖ Library-related services:
 - Remote access to library services, resources, and policies.
 - Provision of library resources and services, e.g., online reference services, document delivery, print resources, etc.
- ❖ Bookstore services.
- ❖ Services providing information to students concerning the institution and its programs and courses.
- ❖ Technical services:
 - Server capacity.
 - Technical support services, including help desk services for students and faculty.
- ❖ Administrative services:
 - Registration, student records, etc.
- ❖ Services related to orientation, advising, counseling, or tutoring.
- ❖ Online payment arrangements.
- ❖ Student privacy considerations.

Evaluation of contract services and consortial arrangements requires a review of pertinent formal agreements. Note, for example:

- Are performance expectations defined in contracts and agreements? Are conditions for contract termination defined?

Several kinds of consortial arrangements currently exist, for example—the Great Plains Interactive Distance Education Alliance (<http://www.gpidea.org>)

- Are there adequate quality control and curriculum oversight provisions in agreements concerning courseware?
- Are there appropriate system reliability and emergency backup guarantees in agreements concerning technology services?
- What are the provisions for protection of confidentiality and privacy in services involving personal information?

Confidentiality, privacy, and security of information must subscribe to a variety of federal and state laws/policies--for example, the Health Insurance Portability and Privacy Act (HIPAA) of 1996 (<http://www.hipaa.org>), the Family Education Rights and Privacy Act (FERPA) of 1974 with amendments (<http://www.ed.gov/offices/OII/fpc/ferpa>), the *North Dakota Century Code* Chapter 44-04 (the "Open Records" laws, <http://www.state.nd.us/lr/cencode/T44C04.pdf>).

For example, previously NDSU routinely used student ID and Social Security numbers for various services. This is no longer done.

All ITS staff and students as well as those in a variety of other units sign a confidentiality agreement regarding personal information they may encounter in the context of their job duties.

Students can limit access to personal information.

- What are the assurances concerning qualifications and training of persons involved in contact with students? These services may range from help desk to tutoring or counseling.

All ITS staff are carefully evaluated before they are hired. Student employees have a yearly training program and are mentored and monitored by full-time staff.

- Consortial agreements introduce additional elements to be evaluated:
 - How are curriculum-related decisions made by the consortium, noting the requirement that “Academically qualified persons participate fully in the decisions regarding program curricula and program oversight?”
 - Is the institution fully engaged in the consortial process, recognizing the decision-making responsibilities of shared ownership?
 - What are the financial arrangements among the parties to the consortial agreement? What are the implications of these arrangements for institutional participation and management?
 - What entity awards the certificates and degrees resulting from the consortial program?
 - What articulation and transfer arrangements are applicable to courses offered via the consortium?
 - Did these arrangements involve specific curricular decisions by the academic structures of the participating institutions? Were they prescribed in a state or system decision?
 - To what extent are the administrative and student services arrangements of the consortium focused on the practical requirements of the student?

Blackboard primarily; eCollege no longer supported through Distance & Continuing Education; a few faculty are apparently still using "home grown" web sites for course enhancements and/or delivery.

NDSU also has an informal agreement with EduTech to provide online courses management software (Blackboard) for K-12 teacher training activities statewide.

Library Consortia; NDSU Libraries participates in several local, regional, and other consortia. The Tri-College University (TCU) Libraries is a well established consortium (over 30 year old) which includes NDSU, Minnesota State University Moorhead (MSUM), and Concordia College. Activities include:

- Shared online catalog, acquisition/serials subsystems
- TCU Film Library (i.e., shared media collection)
- Coordinated purchases (for books, periodicals, databases)

The Library also participates in MINITEX, a regional consortium comprised of all types of libraries in the states of Minnesota, South Dakota, and North Dakota).

Activities include:

- consortial purchases (for databases, eJournals, eBooks)
- Document delivery and interlibrary loan services

The Library participates in other consortia comprised of various groupings of institutions (UND-NDSU, EPSCoR Libraries, ad-hoc western states, etc.)

2e. The importance of appropriate interaction (synchronous or asynchronous) between instructor and students and among students is reflected in the design of the program and its courses, and in the technical facilities and services provided.

- What provisions for instructor-student and student-student interaction are included in the program/course design and the course syllabus? How is appropriate interaction assured?

Course designs vary greatly, but interaction instructor-student and student-student are highly valued across departments. In some respects, students have come to expect they will have ready access and various means for contacting instructors and peers; if they do not, the issue becomes one about which they comment on evaluation forms and anecdotally to staff. In this way, students become a market force that drives quality assurance.

Faculty using Blackboard for online courses or as enhancement for traditional courses can employ tools such as discussion board, group area, and virtual chat to track student-student interaction. Evidence of such interaction is on a course by course basis at the instructor level. Faculty can also elect to use the Personal Response System (PRS) as a tool for student-instructor interaction in the classroom. Both Blackboard and the PRS units can be used for tracking formative and summative assessment.

- Is instructor response to student assignments timely? Does it appear to be appropriately responsive?

Timeliness of faculty responses to students is a variable not easily measured. Students report anecdotally that some faculty are more successful at responding regularly and quickly than others, just as they are in traditional learning settings.

- What technologies are used for program interaction (e.g., email, telephone office hours, phone conferences, voicemail, fax, chat rooms, Web-based discussions, computer conferences and threaded discussions, etc.)?

All of the technologies listed are used in some courses at least some of the time. Generally, courses incorporate more than one methodology for interaction, both synchronous and asynchronous.

- How successful is the program's interactive component, as indicated by student and instructor surveys, comments, or other measures?

The issue of successful interaction is being addressed by the University Senate standing committee on Technology-Enhanced Learning. An online student evaluation of instruction process will be beta tested during the summer of 2003 and go live fall 2003.

3. Faculty Support

As indicated above, faculty roles are becoming increasingly diverse and reorganized. For example, the same person may not perform both the tasks of course development and direct instruction to students. Regardless of who performs which of these tasks, important issues are involved.

3a. In the development of an electronically offered program, the institution and its participating faculty have considered issues of workload, compensation, ownership of intellectual property resulting from the program, and the implications of program participation for the faculty member's professional evaluation processes. This mutual understanding is based on policies and agreements adopted by the parties.

- Have decisions regarding these matters been made in accordance with institutional or system processes customarily used to address comparable issues?

3b. The institution provides an ongoing program of appropriate technical, design, and production support for participating faculty members.

- What support services are available to those responsible for preparing courses or programs to be offered electronically? What support services are available to those faculty members responsible for working directly with students?

Two different delivery methods are offered: (1) online using Blackboard (both on and off campus) and (2) internet-based video conferencing (IVN). A campus Instructional Designer is available as a resource to consult with faculty on the appropriate technologies and to assist with adaptation of the course with a focus on quality for distancedelivery. In addition to initial consultation, this person organizes training seminars on a routine basis.

- Do participating faculty members consider these services to be appropriate and adequate?

Elizabeth will contribute here....

- Does the staff include qualified instructional designers? If so, do they have an appropriate role in program and course development?

NDSU encourages the instructors to incorporate technology into courses. A instructional designer is available but perhaps underutilized. We recommend NDSU take steps in increase to use of instructional design to optimize the use of technology. For example, instructors place PowerPoint presentations on Blackboard without considering the instructional effectiveness.

3c. The institution provides to those responsible for program development the orientation and training to help them become proficient in the uses of the program's technologies, including potential changes in course design and management.

- What orientation and training programs are available? Are there opportunities for ongoing professional development?

See Above.

IVN provides ongoing training for new faculty using its services. Also, specific software training is provided by ITS (CJ and Lorna).

- Is adequate attention paid to pedagogical changes made possible and desirable when information technologies are employed?

Formal training is offered from a variety of sources on campus. Some training is offered informally as faculty take initiative and mentor one another in their own learning circles. However, the institution should consider taking a more active role to assist faculty in using technology effectively and in identifying new approaches and concepts.

- Given the staff available to support electronically offered programs, are the potential changes in course design and management realistically feasible?

At this time, staff is adequate to meet the need. However, if the campus decides to focus more on distance education, more staff will be needed. Both growth and need are anticipated.

- Do those involved consider these orientation and training programs to be appropriate and adequate?

Elizabeth ???

Tammy Cummings???

3d. The institution provides to those responsible for working directly with students the orientation and training to help them become proficient in the uses of the technologies for these purposes, including strategies for effective interaction.

- What orientation and training programs are available? Are there opportunities for ongoing professional development? Do those involved consider these orientation and training programs to be appropriate and adequate?

Personal response systems? (Sudhir Mehta and Nancy Lilleberg)

4. Student Support

Colleges and universities have learned that the twenty-first century student is different, both demographically and geographically, from students of previous generations. These differences affect everything from admissions policy to library services. Reaching these students, and serving them appropriately, are major challenges to today's institutions.

4a. The institution has a commitment – administrative, financial, and technical – to continuation of the program for a period sufficient to enable all admitted students to complete a degree or certificate in a publicized timeframe.

- Do course and program schedules reflect an appropriate commitment to the program's students?

Educational Leadership and Counselor Education publish their course cycle years in advance. Provisions are made for students who might need to adjust their schedule.

Also, on IVN, the addition of over 200 sites has enabled flexibility of locations for both students and faculty.

- Do budget, faculty, and facilities assignments support that commitment?

Interactive video (IVN) programs have first priority in scheduling for the semester. Because NDSU supports a variety of technologies for course delivery, resident classroom use can be maximized. Some academic departments have a commitment to distance education and have faculty who are expected to deliver curriculum in that fashion. [Do faculty in Education & Counselor Ed have de written into their contracts?]

In the spring 2003 North Dakota legislative session, IVN's budget received a substantial cut. Therefore, beginning fall, 2003, IVN is reducing the amount paid to provide technicians in the videoconferencing rooms. That reduction will continue. Therefore, NDSU will need to find other ways to support distance delivered courses. Steps are being taken to train instructors, provide documentation, and provide troubleshooting assistance. Students may be asked to pay an additional amount to support these services.

4b. Prior to admitting a student to the program, the institution:

- ❖ Ascertains by a review of pertinent records and/or personal review that the student is qualified by prior education or equivalent experience to be admitted to that program, including in the case of international students, English language skills.
- ❖ Informs the prospective student concerning required access to technologies used in the program.
- ❖ Informs the prospective student concerning technical competence required of students in the program.
- ❖ Informs the prospective student concerning estimated or average program costs (including costs of information access) and associated payment and refund policies.
- ❖ Informs the prospective student concerning curriculum design and the time frame in which courses are offered, and assists the student in understanding the nature of the learning objectives.
- ❖ Informs the prospective student of library and other learning services available to support learning and the skills necessary to access them.
- ❖ Informs the prospective student concerning the full array of other support services available from the institution.
- ❖ Informs the prospective student about arrangements for interaction with the faculty and fellow students.
- ❖ Assists the prospective student in understanding independent learning expectations as well as the nature and potential challenges of learning in the program's technology-based environment.
- ❖ Informs the prospective student about the estimated time for program completion.

To evaluate this important component of admission and retention, it is appropriate to pursue the following:

- How do potential students learn about the electronically offered program? Is the information provided sufficient, fair, and accurate?

The NDSU Course Bulletin (published every two years) provides overall information are on distance and off-campus offerings. Each semester's Registration Schedule devotes a section to distance education offerings through continuing education, IVN, and late afternoon and evening courses. A separate flyer also lists IVN courses.

Departments provide information to interested students and graduates. As a part of the North Dakota University System, NDSU participates in NDUS Online and the statewide Access database for distance courses (e.g. online, IVN, pre-recorded video tape). This information is also available online.

- How are students informed about technology requirements and required technical competence?

Course syllabi and Blackboard sites list technical requirements and competencies. On IVN, the sites are listed. If a student would like to go to another site, they initiate the discussion with that site. Upon approval from the site administrator, the instructor's approval is also obtained, and the site is added.

- How are students informed about costs and administrative arrangements?

Costs including tuition and other course fees (subject to change) are generally provided in the marketing materials provided to students; as are instructions for obtaining texts and other required materials.

- What information and/or advice do students receive about the nature of learning and the personal discipline required in an anytime/anywhere environment?

Students are told and encouraged to be self-directed and capable of working independently. End dates are critically important in an anytime/anywhere environment.

- What criteria are used to determine the student's eligibility for admission to the program?

Each department determines eligibility for all programs and identifies resources needed to participate. The students then determine their own capacity to participate from a distance.

- What steps are taken to retain students in the program?

Retention efforts are consistent with programs delivered by more traditional means.

- What is the history of student retention in this program?

[ask Counselor Ed and Ed Leadership if they have any documented history]

- 4c. The institution recognizes that appropriate services must be available for students of electronically offered programs, using the working assumption that these students will not be physically present on campus. With variations for specific situations and programs, these services, which are possibly coordinated, may include:
- ❖ Accurate and timely information about the institution, its programs, courses, costs, and related policies and requirements.
 - ❖ Pre-registration advising.
 - ❖ Application for admission.
 - ❖ Placement testing.
 - ❖ Enrollment/registration in programs and courses.
 - ❖ Financial aid, including information about policies and limitations, information about available scholarships, processing of applications, and administration of financial aid and scholarship awards.
 - ❖ Secure payment arrangements.
 - ❖ Academic advising.
 - ❖ Timely intervention regarding student progress.
 - ❖ Tutoring.
 - ❖ Career counseling and placement.
 - ❖ Academic progress information, such as degree completion audits.
 - ❖ Library resources appropriate to the program, including, reference and research assistance; remote access to data bases, online journals and full-text resources; document delivery services; library user and information literacy instruction, reserve materials; and institutional agreements with local libraries.
 - ❖ Training in information literacy including research techniques.
 - ❖ Bookstore services: ordering, secure payment, and prompt delivery of books, course packs, course-related supplies and materials, and institutional memorabilia.
 - ❖ Ongoing technical support, preferably offered during evenings and weekends as well as normal institutional working hours.
 - ❖ Referrals for student learning differences, physical challenges, and personal counseling.
 - ❖ Access to grievance procedures.

Within the context of the program, the requirements of the program's students, and the type of institution, review each of the services and procedures listed above from the standpoint of a student for whom access to the campus is not feasible.

- Are the institution's policies and procedures appropriate and adequate from the standpoint of the distant student?

Currently, students face inadequate payment structures and no secure server for on-line registration. The North Dakota University System administrative database does not offer seamless and efficient procedures and services. A new system (Connect ND) is forthcoming and may offer some alternatives.

- If not all appropriate resources are routinely available at a distance, what arrangements has the institution made to provide them to distant students?

Essential and appropriate resources are available. Library resources are available through various authentication procedures. The IT departments on all the NDUS and Tri-College campuses work together to accommodate student needs.

- Are these services perceived by distant students to be adequate and appropriate?

Currently efforts are underway to survey and evaluate student satisfaction. IVN collects feedback of this nature from students and it is generally favorable. [ask Tammy about compilations]

- Are these services perceived to be adequate and appropriate by those responsible for providing them?

Some areas for improvement are apparent: secure server for registration, authentication procedures, etc.

- What modifications or improvements are planned?

4d. The institution recognizes that a sense of community is important to the success of many students, and that an ongoing, long-term relationship is beneficial to both student and institution. The design and administration of the program takes this factor into account as appropriate, through such actions as encouraging study groups, providing student directories (with the permission of those listed), including off-campus students in institutional publications and events, including these students in definitions of the academic community through such mechanisms as student government representation, invitations to campus events including graduation ceremonies, and similar strategies of inclusion.

- What strategies and practices are implemented by this institution to involve distant students as part of an academic community? By their statements and actions, do administrators and participating faculty members communicate a belief that a sense of academic community is important?

Because of their specific educational goals, many distance students may not have an interest in closely affiliating themselves with the campus. However, NDSU uses cohort groups to provide community and encouragement for members and enhance retention rates. Blackboard chat areas also provide a resource for building a sense of community amongst students.

- How are the learning needs of students enrolled in electronically offered programs identified, addressed, and linked to educational objectives and learning outcomes, particularly within the context of the institution's definition of itself as a learning community.

Once learning objectives for a class are identified by the instructor, if technology enhances or facilitates its outcome it will be used.

- Do representative students feel that they are part of a community, or that they are entirely on their own?

5. Evaluation and Assessment

Both the assessment of student achievement and evaluation of the overall program take on added importance as new techniques evolve. For example, in asynchronous programs the element of seat time is essentially removed from the equation. For these reasons, the institution conducts sustained, evidence-based and participatory inquiry as to whether distance learning programs are achieving objectives. The results of such inquiry are used to guide curriculum design and delivery, pedagogy, and educational processes, and may affect future policy and budgets and perhaps have implications for the institution's roles and mission.

5a. As a component of the institution's overall assessment activities, documented assessment of student achievement is conducted in each course and at the completion of the program, by comparing student performance to the intended learning outcomes.

- How does the institution review the effectiveness of its distance education programs to assure alignment with institutional priorities and educational objectives?
- How does evaluated student performance compare to intended learning outcomes?
- How is student performance evaluated?
- How are assessment activities related to distance learning integrated into the institution's broader program of assessment?

Institutional policies addressing assessment of student learning also apply to distance learning environments. Currently there is no uniform practice in evaluation. Each department or instructor uses its own methods of assessing student achievement. There is no campus-wide attempt to specifically assess the use of technology in learning outcomes. Student learning in distance education is often assessed by less exam-based methods such as projects, portfolios, problem-based learning activities, etc.

5b. When examinations are employed (paper, online, demonstrations of competency, etc.), they take place in circumstances that include firm student identification. The institution otherwise seeks to assure the integrity of student work.

- If proctoring is used, what are the procedures for selecting proctors, establishing student identity, assuring security of test instruments, administering the examinations, and assuring secure and prompt evaluation?
- If other methods are used to identify those who take the examination, how is identification firmly established? How are the conditions of the examination (security, time limits, etc.) controlled?
- Does the institution have in place effective policies and procedures to assure the integrity of student work?

IVN classes currently use an in-room technician to monitor examinations. If problems arise, the technician will consult other ITS staff. As a further safeguard the technician will 'pan' the camera through the classroom during examinations so the instructor also takes part in assuring integrity. Other methods, such as video-taping the student in non-exam based classes (such as speech communication courses) are

used. Blackboard also offers online exam possibilities; these are often weighted to a lesser degree when integrity can't be assured. A 'portfolio' feature imported into Blackboard will be considered for adoption.

5c. Documented procedures assure that security of personal information is protected in the conduct of assessments and evaluations and in the dissemination of results.

- What procedures assure the security of personal information?
- How is personal information protected while providing appropriate dissemination of the evaluation results?

NDSU adheres to FERPA requirements in all its policies and procedures. Blackboard allows only the student to view his or her assessment results; access is controlled by individual password. NDSU requires that all IVN technicians sign a non-disclosure agreement and control the distribution of test results.

5d. Overall program effectiveness is determined by such measures as:

- ❖ The extent to which student learning matches intended outcomes, including for degree programs both the goals of general education and the objectives of the major.
- ❖ The extent to which student intent is met.
- ❖ Student retention rates, including variations over time.
- ❖ Student satisfaction, as measured by regular surveys.
- ❖ Faculty satisfaction, as measured by regular surveys and by formal and informal peer review processes.
- ❖ The extent to which access is provided to students not previously served.
- ❖ Measures of the extent to which library and learning resources are used appropriately by the program's students.
- ❖ Measures of student competence in fundamental skills such as communication, comprehension, and analysis.
- ❖ Cost effectiveness of the program to its students, as compared to campus-based alternatives.

Although not all of these measures will be applicable equally at every institution, appropriate evidence is generally available through:

- Evaluations of student performance (see 5a above).
- Review of student work and archive of student activities, if maintained, in the course of program reviews.
- Results from students' routine end-of-course and -program evaluations.
- Student surveys of overall satisfaction with the experience of electronically offered programs; surveys reflecting student cost trade-offs experienced as they pursued the program.
- Faculty surveys, peer reviews of programs, and discussion groups.
- Documentation concerning access provided to students not previously served, through a combination of enrollment records and student surveys.
- Usage records concerning use of library and learning resources, and instructor assignments that require such usage.
- Assessment of students' fundamental skills in communication, comprehension, and analysis. How have the institution's usual measures of these skills been adapted to assess distant students?
- Documentation of the institution's analyses that relate costs to goals of the program.

Each department assesses program effectiveness through a variety of means including professional accreditation and program reviews. Student Ratings of Instruction (SROIs) are administered at the conclusion of each course. Aggregate data is placed in the instructor's file. IVN also surveys student satisfaction with that delivery method. Departments also survey their program completers regarding satisfaction. Although the library authenticates distance education students, no separate usage statistics are available. Cost analysis studies are also completed on an occasional basis. The addition of over 200 IVN sites has increased the accessibility of learning throughout rural North Dakota. Our status as an Internet2 school has also allowed NDSU to increase learning opportunities for our students (e.g., Arabic language class with Montana State University).

5e. The institution conducts a program of continual self-evaluation directed toward program improvement, targeting more effective uses of technology to improve pedagogy, advances in student achievement of intended outcomes, improved retention rates, effective use of resources, and demonstrated improvements in the institution's service to its internal and external constituencies. The program and its results are reflected in the institution's ongoing self-evaluation process and are used to inform the further plans of the institution and those responsible for its academic programs.

- How is the institution's ongoing program of assessment and improvement developed and conducted?
- Does it cover the essential categories of improved learning outcomes, retention, use of resources, and service to core constituencies?
- Does the program appropriately involve academically qualified persons?
- What are the institution's mechanisms for review and revision of existing programs and courses?
- How does program evaluation affect institutional planning?
- What constituencies are actively involved in the ongoing process of planning for improvement?
- Has the process had measurable results to date?

The Assessment Committee is charged by the University Senate to address all matters concerning assessment of student learning. Furthermore, all programs are periodically reviewed by the Program Review Committee (a standing committee of the University Senate). College level external advisory groups, where they exist, are positioned to provide feedback on improvement of their programs.

Distance learning assessment is handled by each department as part of overall assessment activities. Beta testing of SROIs for distance education courses is scheduled to begin the summer of 2003.

5f. Institutional evaluation of electronically offered programs takes place in the context of the regular evaluation of all academic programs.

- What are the administrative and procedural links between the evaluation of electronically offered programs and the ongoing evaluation of all academic programs?
- How are the respective characteristics of campus-based and electronically offered programs taken into account?

See above. There are no unique policies for electronically delivered programs.

Part B: Institutional Scan of Technology Related to Learning

This section represents our best effort at assembling an inventory of technologies implemented across the campus in support of learning. Some have been referenced in earlier sections of the document, but others have not. Inclusion of the following information was an attempt to provide others with an environmental scan supporting both a broad and deep view of the campus investment in technology.

1. Technology providers/users

-- The Higher Education Computer Network provides core information technology services to the 11 North Dakota University System campuses. (see brochure)

URL: http://www.ndus.nodak.edu/NDUS_Tech_Info/

a) ITS --Sandy Sprafka

-- ITS = Information Technology Services.

-- <http://www.ndsu.nodak.edu/its/>

b) Libraries--Tom Bremer

-- <http://www.lib.ndsu.nodak.edu/>

Although technology is incorporated into nearly every aspect of NDSU Libraries, an especially striking development has been the increasing use of electronic resources, in particular electronic journals (eJournals). At the time of our last accreditation visit, NDSU offered users fewer than 50 eJournal titles and only one major index database incorporating full text articles. Currently NDSU Libraries subscribe to 851 electronic journals (out of approximately 4000 active subscriptions). However, this number is greatly amplified through various consortial purchases, publisher packages, aggregators, and most fruitfully, by harvesting full-text articles from our various indexing databases such as *InfoTrac*, *ABI/INFORM*, *CINAHL*, etc. These efforts push our total to over 6,000 eJournal titles available to our users.

Access to the library's many resources depends upon the users status, where they access the material, and licensing agreements made with the various information providers. Restricted resources, such as most databases and eJournals, are only available to NDSU faculty, students, and staff. A "My Library" log-in capability provides an authentication protocol for off-campus access.

Students, faculty, and staff have fully embraced the shift to electronic formats. Indeed, generally it is the preferred method because of immediacy, ease of use, and the availability of "free" printing (paid by student's Technology Fee). Often it is the most convenient method of accessing the journal collection because most of the pre-2000 print journal collection is in an off-site storage area, accessible only through a "pull service".

Wherever and whenever they are accessed, it is clear the libraries electronic resources have extended the library boundaries beyond its walls and contributed to the swelling information environment available to researchers.

c) Ag. Comm. – David Saxowsky

-- <http://www.ag.ndsu.nodak.edu/agcomm/agcomm.htm>

d) NDSU Research and Technology Park --Kay Sizer

<http://www.ndsuresearchpark.com/>

Located on 40 acres just north of NDSU, the Research and Technology Park is a place where university researchers (including faculty, staff, and students) and private industry can combine their talents to develop new technologies, methods and systems. Since its groundbreaking on May 19, 2001, both educational and business personnel have been excited about the possibilities for collaboration that the Park presents. The Park is in the planning stages of developing an entrepreneurial program to stimulate economic growth in the region. The goal is to turn local ideas, often generated at the university, into high-tech businesses.

The Park's cornerstone private tenant, Phoenix International Corp., Fargo, a John Deere company, occupied the first building built in the Park. Phoenix is a company with strong technological focus and extensive engineering design capabilities.

The Research and Technology Park houses the Center for Nanoscale Science and Engineering. Begun in August 2001, it is one of the most dynamic hubs at NDSU, researching and developing state-of-the art miniaturized electronics and nanotechnology for both federal government and private enterprise. CNSE has received over \$22 million from the Department of Defense (as of 9/2003) to pursue research related to microsensors, wireless communications, spin-based electronics (or "spintronics"), coatings for military ships and aircraft, and other nanostructured protective coatings.

In July 2003, Alien Technology Corporation, a California-based company, announced its decision to build a major high tech manufacturing plant near North Dakota State University's Research and Technology Park. The company chose NDSU because it has a strong working relationship with the university's Center for Nanoscale Science and Engineering.

Also housed in the Research and Technology Park, the Center for Advanced Technology Transfer and Traineeships (CATT) offers technology-based industry traineeships for undergraduate and graduate students through partnerships and linkages with regional industries and companies. In its Bridges to Advanced Technology Based Careers (BATBaC) program, launched in October 2000, undergraduate and graduate students receive training at partnering companies, which co-fund the student training projects.

Another program, Technology Transfer Graduate Traineeships (TTGT), offers graduate traineeships to graduate students who are doing technology-based research on campus. Trainees take CATT technology transfer short courses, establish linkages with one or

more industries or companies that have an interest in their thesis research, and conduct follow-on technology transfer training activities.

The Park is also home to the new Center for High Performance Computing, with initial funding from the General Services Administration in the amount of \$1.5 million. The CHPC is poised to meet the high performance computing needs of NDSU researchers as well those of the federal government and private sector partners.

Research & Technology Park online newsletter =
http://www.ndsuresearchpark.com/news/newsletter/2003_vol1_issue1/index.html

e) RESNET (students in dorms) --John Underwood
-- RESNet = Residence Hall Network Services. Website is
<http://www.ndsu.nodak.edu/resnet/>

f) Extension—Sharon Anderson

<http://www.ext.nodak.edu/>

g) Distance & Continuing Education--Nancy Olson
-- news release = April 01, 2003 - 12:02 "Distance and Continuing Education conferences" planned
http://www.ndsu.edu/university_relations/news/wmview.php?ArtID=946

h) Technology Fee Advisory Committee--Sudhir Mehta
-- Tech. Fee Advisory Committee website is <http://www.ndsu.edu/tfac/>

In the fall of 1995 the ND State Board of Higher Education required all campuses to start collecting a Technology Fee, to be used to pay back a campus networking infrastructure revenue bond over a ten year period and also to fund other needed technology items on the campus. Within constraints set by the state board, each campus determines the amount of the fee collected and the best use of the funds. The Technology Fee Advisory Committee meets periodically during the academic year to discuss and formulate recommendations about supporting projects that improve the information technology capabilities on campus through the appropriate use of the technology fee. Generally the committee seeks proposals twice yearly and solicits technology actions plans that directly benefit and improve the quality of education and campus life of the NDSU student body. After reviewing the proposals, the committee then recommends allocation of funds to Craig Schnell, Provost and Vice President for Academic Affairs.

i) HECN--Sandy Sprafka
-- Higher Ed Computer Network (HECN) = http://www.ndus.edu/NDUS_Tech_Info/

j) Varsity Mart equipment sales--Tom Bremer

k) Edutech (K-12, formerly SENDIT)--Jody French

2. Technology-related projects

a) BRIN--Don Schwert

North Dakota Biomedical Research Infrastructure Network (BRIN)
<http://www.med.und.nodak.edu/brin/>

b) Telepharmacy—Dr. Charles Peterson, Dean of Pharmacy

In its second year of funding by a grant supported by HRSA/Office for the Advancement of Telehealth of HHS, the North Dakota Telepharmacy project is a collaborative and coordinated effort between the NDSU College of Pharmacy, the North Dakota State Board of Pharmacy, and the North Dakota Pharmaceutical Association to implement a state-wide telepharmacy program to restore pharmacy services to small rural communities in North Dakota who have either lost or are about to lose their pharmacy services. There are eighteen rural communities in North Dakota currently involved in this project involving seventeen counties geographically located in western, northcentral, and southeastern regions of the state with a total population of 20,203 rural citizens being positively impacted by this project. Through the use of state-of-the-art technology, smaller rural communities are benefiting through this project by: restoring access to health care to many medically underserved areas of the state; improving economic development in smaller rural communities in North Dakota by building new businesses and added new jobs to the community; improving the chances of recruiting and retaining pharmacists in North Dakota to practice pharmacy in rural communities; and providing exciting new clinical training experiences and sites for NDSU pharmacy students in teaching them how to deliver pharmacy services to smaller rural communities in a unique and innovative way utilizing the latest advances in technology. Thus far, this North Dakota Telepharmacy Project has brought an estimated \$4.5 million in new annual revenue into these smaller rural communities and has added an estimated 25-30 new jobs to the rural North Dakota job marketplace. Future plans are to expand North Dakota's statewide telepharmacy program to restore pharmacy services to other medically underserved areas of the state and to share our knowledge, expertise, and experiences with other states to assist them in implementing a similar program to help address the growing rural health care crisis all across America.

-- news release - "Telepharmacy program receives additional federal funding"

http://www.ndsu.edu/university_relations/news/wmview.php?ArtID=1009

-- news release - January 07, 2003 - 13:16 "Peterson is scheduled presenter at national telehealth meeting"

http://www.ndsu.edu/university_relations/news/wmview.php?ArtID=804

-- news release - January 08, 2002 - 15:03 NDSU to develop national model for 'telepharmacy' services to rural areas

http://www.ndsu.edu/university_relations/news/wmview.php?ArtID=309

- c) REC videoconferencing project--Dave Saxowsky
-- Video-conferencing - Teaching Through Technology
<http://www.ag.ndsu.nodak.edu/agcomm/agcomm.htm>
North Dakota's Video-Conferencing Program NDSU Agriculture, various K-12 schools and the higher education system have been using various types of video-conferencing for more than 10 years. But most of these systems relied on "dedicated phone lines." This website describes a newer, Internet-based video-conferencing system which is less expensive and more accessible than alternative technologies. Internet-based video-conferencing will not replace existing systems, but complement others in helping North Dakotans use information technology in their professional and personal activities.
- d) Center for Nanoscale Science & Engineering (CNSE)—Dr. Greg McCarthy, Director
-- <http://www.ndsu.edu/cnse/>
-- news release - September 24, 2002 - 11:58 "Center for Nanoscale Science and Engineering groundbreaking held"
http://www.ndsu.edu/university_relations/news/wmview.php?ArtID=669
- See story above, NDSU Research and Technology Park
- e) Virtual Ed. project (virtual cells, virtual field trips, virtual museums)--Brian Slator, Jeff Clark
Dr. Brian Slator, North Dakota State University Computer Science Professor, received a ND EPSCoR Seed Grant to help launch his interactive, educational software-development career. Slator uses a field-trip approach in his software programs that provide students with exciting role-based learning experiences. Game titles include Virtual Cell World, Dollar Bay, and Geology Explorer. With Geology Explorer, students collect virtual data and perform virtual experiments. Given his success with seed grant funds, Dr. Slator and his colleagues successfully competed for a \$1.94M grant from the National Science Foundation to continue instructional software development.
- f) Internet2--Sandy Sprafka
-- <http://www.internet2.edu/>
NDSU is a member of Internet2 and, with UND, has sponsored the other 9 NDUS institutions through the Sponsored Education Group Participant (SEGP) program.
- Some of the projects are at http://segp.nodak.edu/nd_projects.htm
- NDSU provides Internet2 seminars for the NDUS, has been active in several projects (The Megaconference, Virtual Cell, ...), has several on the SEGP Steering Committee, and Bonnie Neas on the SEGP Executive Committee.
- Internet 2 University Members
<http://members.internet2.edu/university/universities.cfm>

-- Example of project using Internet 2 - "NDSU researchers collaborate with 'The Archaeology Channel' " =

http://www.ndsu.edu/university_relations/news/wmview.php?ArtID=786

-- news release - December 10, 2002 - 11:49 "NDSU featured on Internet2 site"

http://www.ndsu.edu/university_relations/news/wmview.php?ArtID=794

g) SEGP--Sandy Sprafka

K-12 networks, community college networks, and similar groups of educational organizations who need stable, high-bandwidth capabilities for educational projects should consider using Internet2. To obtain access to Internet2, the group needs to find a University Primary Participant to sponsor them. The Internet2 project that sponsors K-20 groups is called SEGP (Sponsored Education Group Participant). The project encourages and facilitates collaboration among Internet2 members, Sponsored Individual Institutions (SIIs) and other SEGPs. For SEGP goals, a list of the SEGP participants, Frequently Asked Questions (an FAQ) , and an application form, go to:

www.internet2.edu/k20/abouttheinitiative/.

The SEGP Primer is at <http://segp.nodak.edu>.

h) Megaconference--Sandy Sprafka <http://www.mega-net.net>

NDSU has been a key player in all the Megaconferences. By year, the activities were:

-- 1999: made a presentation

-- 2000: Sandy Sprafka presented with Rick Walker, MSUM on the Virtual Classroom

-- 2001: Sandy was Master of Ceremonies, participated on the planning committee, arranged for presenters, and hosted the tenor for the Virtual Barbershop Quartet

-- 2002: Sandy shared Master of Ceremonies duties.

i) Access grid--Jim Senechal

-- Access Grid <http://www.ndsu.nodak.edu/accessgrid/>

j) Red River Watershed Project--Nancy Olson

k) Sen. Dorgan Technology Conferences--Bonnie Neas

-- Annual Upper Great Plains Technology Conference & Trade Show

<http://www.uppergreatplains technology.com/index.htm>

l) Evolution--Alan White

m) STAGEnet--Tammy Cummings/John Grosen

n) Web radio--Sandy Sprafka

July, 2001 Dr. Tom Riley, Dean of Arts, Humanities & Social Sciences wanted to provide an opportunity for Communications students to gain experience in broadcasting. He contacted Jim Ross and the Web Radio project was initiated. This pilot project is broadcasting the Women's Volleyball games to see if people are interested in listening to a web-based radio station and what effect this will have on the campus network. Upon completion, the project will be evaluated to determine satisfaction of the listeners, reliability and quality of the product, and extensibility of the radio station concept.

The Web Radio project has two goals: 1) To broadcast the Women's home Volleyball games over the Internet using streaming audio. 2) To analyze the data collected to determine how to plan for and manage streaming requests from across campus.

A team was assembled consisting of people with varying expertise: volleyball, streaming audio, networking, broadcasting, and the web. The project team consists of:

Zaundra Bina, Women's Volleyball Coach
Clark Coffman, ITS UNIX Administrator
Bruce Curtis, ITS Network Consultant
Felix Guerrero, Multimedia Technologist
Chris Harnack, Student Broadcaster
Doug Hindman, Communications Professor
Marty Hoag, ITS Technical Support
Nancy Lilleberg, ITS Multimedia Coordinator
Eric Parsons, ITS WWW Development Specialist
Tom Riley, Dean Arts, Humanities & Social Sciences
Jim Ross, Associate Director Learning Technologies
Jeff Schwartz, Women's Sports Information Director
Don Simon, SENDIT/Information Specialist
Sandy Sprafka, Digital Conferencing Administrator
Joel Writer, Digital Conferencing Specialist

- o) Virtual Conference--Willy / Bill Perrizo
 - Virtual Seminars on Genomics and Bioinformatics = http://www.ndsu.edu/virtual_genomics/seminars.htm
 - news release - September 21, 2002 - 10:15 NDSU to host second 'virtual conference' http://www.ndsu.edu/university_relations/news/wmview.php?ArtID=632

3. Technologies

- a) Web--Ludvik Herrera
 - Web Advisory Board website is <http://www.ndsu.nodak.edu/wab/>
 - http://www.ndsu.edu/wwwdev/web_team/home.shtml
- b) Data mining--Bill Perrizo
- c) Supercomputing--Greg Wettstein, Bonnie Neas ,

The new Center for High Performance Computing is initially housed in the Research 1 building of the NDSU Research and Technology Park but will relocate to the Research 2 building when construction of that building is completed. With initial funding from the General Services Administration in the amount of \$1.5 million, the CHPC is poised to meet the high performance computing needs of NDSU researchers as well those of the federal government and private sector partners.

-- Center for High Performance Computing
<http://www.ndsu.nodak.edu/chpc/>

d) GIS/GPS--Jon Nowatski

e) Blackboard--Elizabeth Smith

-- <http://blackboard.ndsu.nodak.edu>
-- <http://www.ndsu.nodak.edu/its/blackboard/faculty.shtml>
-- <http://www.ndsu.nodak.edu/its/blackboard/students.shtml>

The current version of Blackboard (5.5) will be used for Fall 2003. A plan for upgrading to Blackboard 6 will be developed during Summer/Fall 2003.

f) Streaming--Brian Jambor/Bruce Sundeen

g) E-mail

-- <http://enroll.ndak.edu/>
-- <http://webmail.ndsu.nodak.edu/>
-- <http://listserv.ndak.edu/>

4. Technology issues

a) ConnectND (Jean Ostrom Blonigen)

<http://www.ndak.edu/connectnd/repository/news/ebulletin-05-2003.pdf>

The Connect ND project is the implementation of PeopleSoft's ERP (Enterprise Resource Planning) system that will replace North Dakota's current administrative computer systems. The ERP system will serve as the administrative systems for the entire enterprise from students to employees to financial management.

All of North Dakota State Government, including the North Dakota University System (thus, including NDSU), is involved in this project. The project has been organized by module (functional area) into three state groups (Financial, Human Resources Management System, Student Administration, and Technical).

Under the leadership of a State Executive Steering Committee (co-chaired by Donna Thigpen, President, Bismarck State College, and Rod Backman, Director, Office of Management and Budget) and with the help of the implementation partner, MAXIMUS,

the project is being implemented using a five-phased approach including Initiation, Design, Development, Migration, and Post Production.

Implementation has begun at the Mayville State University and Valley City State University pilot sites. In addition, the Office of Management and Budget, the state's pilot site, has begun implementation. The entire statewide implementation for the remaining agencies and institutions is scheduled to be complete by the third quarter of 2004. At NDSU, implementation is scheduled to begin (?), to be completed by (?).

- b) Online security (HIPAA, telepharmacy)--Dick Jacobson/Denis Isrow
<http://www.ndsu.nodak.edu/itsrmg/index.html>

- c) Bandwidth (KAZAA use)--Bruce Curtis/John Grosen
<http://www.ndsu.edu/resnet/bandwidth.php>. Also, see email by Rosi Kloberdanz, ITS Director, sent to NDSU-Staff listserv on 5/7/03 regarding illegal trafficking of copyrighted music, movies, software and other files on campus (based on letter to Pres. Chapman)
-- <http://www.ndsu.nodak.edu/its/bandwidth/>
-- Letter to President Chapman
http://www.ndsu.nodak.edu/its/about/pubs_policies/riaa-letter.pdf
-- Open letter from the North Dakota University System IT Security Officer
http://www.ndsu.nodak.edu/its/about/pubs_policies/riaa-info.htm

- d) Intellectual property--Rick Johnson/Valrey Kettner/Dale Zetocha
-- Research Foundation
http://www.ndsu.nodak.edu/ndsu/research_foundation/resfdn.html
-- Intellectual property policy
http://www.ndsu.nodak.edu/ndsu/research_foundation/patent_pol.html
-- Also see NDSU Policy Manual
Section 341: Patents <http://www.ndsu.edu/policy/341.htm>
and
Section 340: Copyrights <http://www.ndsu.edu/policy/340.htm>
-- New intellectual property policy is currently being drafted. Reference: SBHE Policy Manual, Section 611.2 (SBHE policy is overarching; NDSU's policy must meet SBHE's); NDSU's new policy is proposed for Policy Manual Section 190.

- e) Identify authentication -- John Grosen/Nem Schlecht

- f) SPAM filters--John Grosen

- g) Recycling of equipment--Brian Abraham
-- http://www.ndsu.nodak.edu/its/depts/clusters/recycling_equipment.shtml

- h) hardware/software standards--CITPG
-- Computer & Information Technologies Planning & Goals (CITPG) Committee
-- <http://www.ndsu.nodak.edu/ndsu/cpg/>

-- <http://www.ndsu.nodak.edu/ndsu/latimer/desktop/index.html>

i) Legal issues--Rick Johnson

5. Technology strategic plans

a) System IT plan/policies--NDUS

--ND University System IT Plan

<http://www.state.nd.us/itd/planning/doc/2002-plans/215.pdf>

-- ND Statewide Technology Plan

<http://www.state.nd.us/itd/planning/doc/2002/fullplan.pdf>

b) Campus IT plan/policies--Sandy Sprafka

-- http://www.ndsu.nodak.edu/its/about/projects_plans.shtml

--NDSU Information Technology Visions NDSU IT Plan

http://www.ndsu.edu/its/about/documents/Information_Technology_Plan.doc

c) Campus IT survey--Sandy Sprafka

-- Overview: http://www.ndsu.nodak.edu/its/about/department_visits/overview.shtml

-- Detail: http://www.ndsu.nodak.edu/its/about/department_visits/dept_visits.shtml

d) Department/unit technology plans--Tom Bremer

-- ITS Department Visits

http://www.ndsu.nodak.edu/its/about/department_visits/dept_visits.shtml

e) NDSU policy development--CITPG/TEL

f) "45 mile goal" for North Dakota--Legislative Roundtable/Nancy Olson

6. Technology professional development/training

a) ITS Training Group.

The training group provides training on various end user software packages. The software includes, but is not limited to: PageMaker, PhotoShop, Elements, Word, Excel, Access, PowerPoint, DreamWeaver, Contribute, PageCenter, Eudora, Corporate Time, Web Graphics, File Management, Acrobat, and other requested software training. The schedule and descriptions of training offered, along with the ability to sign up for a session, is posted on the ITS web page each semester at:

<http://www.ndsu.nodak.edu/its/training/training.shtml>

b) Help Desk--John Underwood

-- http://www.ndsu.edu/its/help/who_can_help.shtml

c) Staff training/workshops--CJ Johnson/Lorna Olsen

-- http://www.ndsu.edu/its/help/who_can_help.shtml

d) Blackboard--Elizabeth Smith

-- <http://www.ndsu.nodak.edu/its/blackboard/training.shtml>

e) Ag. computing classes--Dave Saxowsky

-- http://www.ndsu.edu/its/help/who_can_help.shtml

f) Formative assessment--Sudhir Mehta

Bush grant proposal of 1999 addresses development of faculty in a variety of teaching methodologies, including technological. Support documents already in Office of Accreditation and Assessment

<http://www.ndsu.edu/ndsu/accreditation/assessment/bushgrant/index.shtml>

g) Clusters/ACM support--Brian Abraham

-- http://www.ndsu.edu/its/help/who_can_help.shtml

7. Technology tools/services

a) Personal response devices--Nancy Lilleberg

-- <http://www.ndsu.edu/prs>

b) Blackboard--Elizabeth Smith

-- <http://blackboard.ndsu.nodak.edu>

-- <http://www.ndsu.nodak.edu/its/blackboard/faculty.shtml>

-- <http://www.ndsu.nodak.edu/its/blackboard/students.shtml>

c) IVN--Cheryl Thompson/Tammy Cummings

-- <http://www.ndsu.nodak.edu/ivn/>

d) Center for High Performance Computing--Bonnie Neas

-- <http://www.ndsu.nodak.edu/chpc/>

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e) Group Decision Center--Sharon Cobb

-- <http://www.ndsu.nodak.edu/gdc/>

f) E-card (Bison Card) services--

-- http://www.ndsu.nodak.edu/physical_plant/telecommunications/bisonlines/

g) Network infrastructure--John Grosen

h) Distance Education--Nancy Olson

-- <http://www.ndsu.nodak.edu/DCE/>

-- news release = "Distance and Continuing Education conferences planned"
http://www.ndsu.edu/university_relations/news/wmview.php?ArtID=946

-- August 19, 2002 - 14:47 "Distance and continuing education sponsors stepfamilies conference"

http://www.ndsu.edu/university_relations/news/wmview.php?ArtID=599

i) TLC

<http://www.ndsu.edu/tlc>

j) Service Center

-- should the TLC, the Service Center and the SPONGE project be listed?

k) SPONGE

<http://www.ndsu.edu/sponge>

l) WTEC

-- How about WTEC? It should be solidly on its feet by mid summer...

-- This is an example of classroom technology: News release January 08, 2002 - 16:20

"Laser, optics teaching lab established."

http://www.ndsu.edu/university_relations/news/wmview.php?ArtID=324

A new interdisciplinary laser and optics teaching laboratory has been established at North Dakota State University through a \$74,000 National Science Foundation grant.