

**BROOKLYN COLLEGE
INFORMATION TECHNOLOGY ASSESSMENT PLAN**

**PROGRESS REPORT
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Introduction

The Brooklyn College 2005-2010 Strategic Plan prioritized the continuing enhancement of information technology. The Strategic Plan specified two major IT goals:

- Brooklyn College will continue to develop and apply technology initiatives that respond to the College's needs and aspirations, and
- Brooklyn College will continue to promote the further development of instructional technology programs and the infrastructure that supports it.

A comprehensive IT assessment strategy was developed to ensure the meeting of these goals. The Strategic Plan identified four major organizations at Brooklyn College that either determine IT policy or deliver critical IT services:

- The Teaching and Learning Technology Roundtable (TLTR)
- The Center for Teaching (CFT)
- The Brooklyn College Library/Academic Information Technologies (Library/AIT)
- Information Technology Services (ITS)

Assessment efforts by each of these organizations have continued as changes in the availability and quality of IT services have taken place. These efforts were elaborated on and codified in the March 2007 Brooklyn College Information Technology Plan. Specific targets for achieving an effective, cohesive IT program that serves the needs of and is transparent to the entire college community were established. In addition, strategies for assessment were detailed. Four areas have been selected for this initial phase of IT assessment:

- Public Computing Labs
- Faculty Training and Development in the Use of Technology for Teaching, Learning and Research
- Facilitate Classroom Instruction Using Technology Tools
- Online Services

The College has continually implemented new technologies and expanded existing technologies. Assessment efforts have measured the impact of these changes on the learning environment. Where possible, our assessment efforts have informed subsequent changes in the provision of information technology. What follows is a review of recent assessment initiatives addressing the delivery of IT services at Brooklyn College, and a review of the results of these initiatives in terms of the goals of the 2005-2010 Strategic Plan and the 2007 IT Plan.

IT Assessment Efforts at Brooklyn College

The purpose of IT assessment is to document in measurable terms our experience in providing IT services, with the ultimate goal of advancing the knowledge, skills, and abilities of Brooklyn College students. In recent years, Brooklyn College has instituted a wide variety of assessment measures to help achieve the goals established in its strategic plans. In addition, departments involved in the delivery of IT services have implemented their own assessment measures. A review of the measures that were most important for informing the IT plan discussion is presented here.

College-Wide Surveys

National Survey of Student Engagement

The National Survey of Student Engagement (NSSE) is a questionnaire introduced in 1998, and administered annually nationwide, that addresses student academic and social involvement in the college experience. NSSE is a useful tool for measuring learning outcomes. Brooklyn College has participated in NSSE in 2000, 2003, and 2007.

Noel-Levitz Student Satisfaction Inventory and Institutional Priorities Survey

The Noel-Levitz Student Satisfaction Inventory (SSI) is a questionnaire developed by Noel-Levitz, a private firm specializing in college assessment. The questionnaire was administered to a sample of 2,146 students in spring 2002. Administration took place in classrooms, which were selected to include a representative selection of classes offered at Brooklyn College. The questionnaire seeks responses from students about satisfaction with a variety of services on campus, including library and computer services. An additional questionnaire, the Institutional Priorities Survey (IPS), was administered to faculty, who were asked to indicate what responses they expected students to provide to the same items.

CUNY Student Experience Survey

The CUNY Student Experience Survey (SES) is a questionnaire administered by the Office of Institutional Research and Assessment at CUNY. This questionnaire has been administered four times, always during the spring semester: 2002, 2004, 2006, and 2008. The sample size was typically close to 200 students, and only undergraduates were included. Brooklyn College IR officials have assisted in creating items for the questionnaire. The SES addressed a variety of issues, including student engagement, external factors, and satisfaction with services offered on campus. Several questions dealt with library services.

Department-Specific Assessments (Including Focus Groups)

ITS Public Computing Labs Satisfaction Survey

In 2007 and 2008, ITS created and administered a questionnaire to users of the ITS public computing labs, located in the WEB building. Respondents indicated their frequency of use and satisfaction with the public computing lab. The questionnaire was used to inform decision-making about the services offered and the effectiveness of the computing platforms. In 2007 and 2008, the student users were polled online and in person as part of ITS's annual lab assessment. IN 2008 a survey of faculty instructors using the facility was added.

Faculty Training and Development Lab User Feedback

The Faculty Training and Development Lab provides special training and assistance to faculty members who want to use computers in classroom instruction. This includes on-site training as well as ad hoc assistance with problems. Faculty who request staff technical support can choose to provide comments using e-mail. Managers use these comments, as well as other observations, to

assign and train staff to work more effectively with faculty members.

Faculty Smart Classroom Survey

In 2008, ITS began an annual administration of an online questionnaire of Brooklyn College faculty who were currently teaching a course in a “smart” classroom. 89 faculty members responded to the questionnaire. The questionnaire dealt with numerous aspects of faculty experiences with smart classrooms, in order to assess their use of and satisfaction with smart classroom technology, as well as to gauge faculty interest in various possible functional and service improvements

AIT Surveys of Students and Faculty

In the Spring 2004 and Spring 2005 semesters, AIT administered questionnaires to students and faculty to determine the quality of student services provided. The survey was administered as a respondent self-selected questionnaire. Approximately 500 library users responded to each questionnaire. As a result of these surveys, more computers were acquired and made available to library users. The library website was prioritized, and redesigned to improve its efficiency and convenience of use. Further, these questionnaires provided a background for assessing the results of the later Brooklyn College Library Experience Survey.

Library Research Instruction: Faculty Satisfaction Questionnaire

For the last three years, the library has been administering a faculty satisfaction questionnaire for faculty whose classes had received library research instruction. All faculty with e-mail addresses known to the library were contacted. Of these, about 50% chose to respond. The results of the questionnaire were uniformly positive. Although this was good news for the delivery of library research instruction, library administrators expressed concern that opportunities for improvement were difficult to discern from the lack of critical responses. The library is developing a new version of the questionnaire with items that might more effectively elicit criticism. Further, the questionnaires will be made available on the web site to students and faculty. Lastly, the library is considering assessment tools to measure research instruction outcomes.

AIT Training Drop-In Instruction Assessment

AIT has been supervising the quality of computer lab training to get a sense of the effectiveness of this training. AIT managers periodically visit technical training sessions to assess the quality of the training provided. AIT staff are provided with an evaluation and advice on improving the quality of their training techniques. This has been the standard practice for AIT continuously for more than a decade.

Brooklyn College Library Experience Survey

The Brooklyn College Library Experience Survey (LES) was administered in January 2007 and March 2008. Approximately 300 library users participated in each administration. The questionnaire was created to obtain information for librarians and library managers on student, faculty, and staff experiences with the library. An emphasis was placed on technology issues, but the questionnaire also dealt with non-technology issues, such as satisfaction with the provision of service. Notice to participate in the questionnaire was placed on the home page of the Library web site. Because the sample was self-selected, randomness cannot be presumed.

LibQual+ Survey

LibQual+ is a standardized questionnaire used by many libraries nationwide. It addresses a broad overview of library services, but a number of items are specifically concerned with technology. This questionnaire was selected by CUNY administration, thus providing an opportunity to make comparisons between CUNY college libraries. It was administered to a selection of library users in April 2005.

Library Café Workshop Evaluations

The library café provides a major service to Brooklyn College. A workshop is provided to students, faculty, and staff to help them learn how to take advantage of this service. After each workshop, a questionnaire is administered to participants, which provides an opportunity to obtain feedback from the students about the quality of the workshop.

WebCentral Portal: Feedback Survey

Two versions of the WebCentral portal have been used since its introduction in 2003. Starting in 2005, an online feedback survey was provided to users. The survey contains closed-ended items using a Likert scale format, as well as a small number of open-ended comments items. Results of this survey at the time of the first portal played a key role in shaping the second. This survey has been periodically updated to address new issues relating to the portal.

WebCentral Portal: Focus Groups

Focus Groups played an instrumental role in the formation of the WebCentral Portal. Focus groups provided an opportunity for more in depth questioning and discussion related to the services provided by the portal. New focus groups may be convened in advance of the third version of the portal, which is currently in planning.

Utilization Data

Faculty Council Report on Computer Utilization

The Faculty Council Report on Computer Utilization was the product of an ongoing series of meetings between the Faculty Council, ITS, and the Library/AIT. The Faculty Council discussed and assessed aspects of library and AIT service delivery, culminating in a set of recommendations and criticisms. These are then considered by management officials at the library and AIT. As a result of these recommendations, Linux-based computers were installed in the AIT student labs.

Library and Library Café Utilization Data

In Spring 2008, ITS and AIT installed tracking software in public use computers in the library and library café. This software tracks all students who sign up for a computer between 8:00 am and midnight. Usage is tabulated, and records of usage are studied to identify trends and developments. The tracking software only identifies usage of library café computers, and therefore underreports the number of students working with their own laptop computers in the library café. This activity has been ongoing since the opening of the library café. The results of the utilization data have been used to justify continued provision of resources to maintain the library café. At present time, there are no plans to change this assessment method.

Library Electronic Resources Utilization Data

Various vendors, including EZproxy, have developed software that tabulates usage of electronic resources at the library. This software also provides statistics documenting which journals and books are most likely to be sought by library users when doing research. The use of electronic resources utilization data has been ongoing since the library renovations were completed in 2001-02. The findings indicated that some journals expected to be popular were not; while others were more popular than expected. The results were used to justify the expenditure of resources and guide promotion and publicity efforts.

Management Tools

Full-Day Library/AIT Management Retreats

Each year, a full-day retreat for management officials of the library and AIT is convened. A second full-day retreat is convened exclusively for AIT management. The full-day retreats provide an opportunity for in-depth discussions about issues facing the library and the AIT. Further, these retreats provide library and AIT employees with the opportunity to assess their own work and to discuss work-related issues and problems. These meetings have been instrumental in determining long range goals and policies.

Library/AIT Annual Report

Each year, the library and AIT create a report summarizing the year's activities and statistics for the prior year, looking also at trends over a series of years. Feedback from administrators and faculty regarding library services influence library policy and procurement.

Public Computing Labs

More than 800 computers are available to students at four major locations on campus: the ITS Public Computing Lab, the Library, the Learning Center, and the Library Café. The 2007 IT Plan established several objectives for Public Computing Labs:

- Maintain labs for optimum availability.
- Meet Utilization Demands: Hours, Staffing, Workstations.
- Maintain Current Technology.

Maintain labs for optimum availability. In surveys, Brooklyn College students report growing satisfaction with their access to computers at Brooklyn College. The need for additional computers on campus was underscored by the results of the April 2005 LibQual+ survey, in which student demand for additional computers was a key finding. In the 2002 Student Experience Survey, only 11% of students indicated that they were very satisfied with the availability of computers on campus. Since that time, Brooklyn College increased the number of computers available on campus by:

- Opening the library café, a computer lab open to students 24 hours per day and 7 days per week. There are now 80 computers available to students in the library café.
- Increasing the number of computers available in the ITS/Web Building. There are now up to 489 computers available here.
- Increasing the number of computers available in the Library. After Library and AIT administrative retreats in 2007 and 2008, survey research and ad hoc observations led administrators to conclude that more computers were needed. There are now 311 computers available at three locations in the library.
- The learning center now has 40 computers available to students.

As of 2009, the number of computers available in public computing labs across Brooklyn College now exceeds 800. More students now report that when they need to use a computer on campus, they can find one. In the 2008 Student Experience Survey, 29% indicated that they were satisfied or very satisfied, an 18% increase since 2002.

In ad hoc comments, as well as the open-ended comment sections of the 2007 and 2008 library experience surveys, students expressed a need to print more of their work in public computing labs. In 2007, a printing management system that had previously been implemented only in the ITS WEB Labs since the year 2001 was expanded to the Library, the Library Café, and the Learning Center. Students can now use their free printing quota and at these facilities and can add funds both in-person and via the web using PayPal or credit cards

Students use the public computing labs not just to work on computers, but also to meet with other students to discuss assignments. Anecdotal observations of the popular group study rooms in the library suggest that there would be student interest in them in the ITS WEB building as well. As a result, in 2008, ITS began constructing enclosed group study facilities in addition to their existing study lounge areas.

Meet Utilization Demands: Hours, Staffing, Workstations. The level of demand for public computing labs is high, and increasing. According to the Student Experience Survey, the percentage of students indicating that they often or very often use a computer at school to do a class assignment increased from 36% in 2002 to 47% in 2008 according to the CUNY Student Experience Survey. This represents a 9% increase over that time. According to the same survey, the percentage of students indicating that they often or very often used a computer in a computer lab increased by 24% between 2002 and 2008, from 36% to 60%. In addition, the percentage of students indicating that they often or very often use a computer in class increased from 10% in

2002 to 13% in 2008 according to the CUNY Student Experience Survey. This represents a 3% increase over that time.

ITS and AIT have responded by significantly increasing the number of public use computers available to students on campus. In 2004, there were 226 computers available at the library. The number of computers available at the library has increased by 38% since then, to its current total of 311. The number of computers available at the library café has increased by 60% since 2004, from 50 to 80. Overall, since 2004, the number of publicly available computers has increased by 16% since 2004, from 705 to 820.

Brooklyn College has also worked to increase the hours in which students, faculty, and administration have access to computers. In recent years, ITS substantially increased the number of hours in which the WEB building is available to students:

- In 2007, the building was open 8-11 Monday through Thursday, and 9-5 on Friday through Sunday, for a total of 84 hours per week.
- In Fall 2007, these hours were increased to 8-12 Monday through Thursday, and 8am-2am during finals.
- Finally, in fall 2008, the hours were increased to 8-12 seven days a week, for a total of 112 hours per week, a 33.33% increase since early 2007. The extended hours during finals remain in place.

Students, faculty, and staff use computers available to them in the library. AIT utilization data indicates that there were 13,656 unique users of the 311 public computers in the library in fall 2008. The majority of library users use library computers to do academic work (72%, according to the Fall 2007 Library Experience Survey).

In the 2004 Student Experience Survey, 14% of students indicated that they were either satisfied or very satisfied with computer lab hours. Since then, the library café was opened; the hours of the ITS/Web Building were extended, and the hours when the library was opened were extended. As a result, the percent of students indicating that they were satisfied or very satisfied with computer lab hours on the 2008 Student Experience Survey increased to 27%.

Results of the 2007 and 2008 administrations of the Library Experience Survey indicated a need for more public use computers. Library computer utilization indicated that, despite the demand suggested by the survey, computers were often available in different locations in the library. AIT responded, first by providing more computers; and second, by improving signage, so that library users would be better able to locate publicly available computers.

AIT provides instruction to students, faculty, and staff for the use of available technology. “Drop-in” personal training and assistance is available to individual library users during library hours. AIT has been supervising the quality of computer lab training to get a sense of the effectiveness of this training. AIT managers periodically visit technical training sessions to assess the quality of the training provided. AIT staff are provided with an evaluation and advice on improving the quality of their training techniques. This has been the standard practice for AIT continuously for more than a decade. Through staff observations, talented trainers were identified and assigned. On the basis of these ad hoc assessments, a standard staff evaluation rating form has been created.

According to the Fall 2007 Library Experience Survey, 76.7% of all library users have had instruction at the library in how to use a library for research. Of those, 89.2% indicated that the instruction was helpful. Surveys indicate that student satisfaction with the Brooklyn College library has been very high, and is improving. The percentage of students indicating that they are

satisfied or very satisfied with library facilities increased from 52% in 2002 to 78% in 2008 according to the CUNY Student Experience Survey. This represents a 26% increase over that time. The percentage of students indicating that they are satisfied or very satisfied with library services increased by 22%, from 54% in 2002 to 76% in 2008.

The library café was established in 2002 as a public computing lab available to users during late hours. There are 80 computers available to users of the library café. AIT has installed tracking software that counts the number of users of library café computers between 8:00 am and midnight. In fall 2008, there were 8,770 unique users of these computers. In other words, more than half of Brooklyn College students used a library café computer at least once. Some additional students may also visit the library café to use their own laptops, meet with classmates, or use computers during hours where tracking does not take place. Overall student usage may be undercounted somewhat as a result. The results of the utilization data have been used to justify continued provision of resources to maintain the library café. At present time, there are no plans to change this assessment method.

Maintain Current Technology. Computers are continuously updated to include the latest technology to meet the demands of the students. For the 2007 ITS Customer Satisfaction Survey, students suggested the following improvements to the available technology in computer labs:

- Free printing (95% indicated that this is very useful or most useful)
- Lab Staff Support (73.4% indicated that this is very useful or most useful)
- Graphics tools (Scanners, Adobe Acrobat, and Macromedia) (72.5% indicated that this is very useful or most useful)
- Wi-Fi Wireless Access (63.6% indicated that this is very useful or most useful)
- Digital Help (Remote electronic assistance service) (58.9% indicated that this is very useful or most useful)
- Apple Mac workstations (55.6% indicated that this is very useful or most useful)

Since 2007, students have been issued accounts, with a certain amount of free printing available each semester. Lab staff support has increased. Graphics tools have been added to computers. Students now have Wi-Fi access in most public assembly areas on campus, including all major computing labs, the cafeteria, the Student Center, the Quadrangle, and the entire library. Students can contact ITS during extensive hours of availability and can have their laptops or handheld devices configured to access the secure BC WIFI network at the WEB lab. The number of Mac computers available on campus has increased. At the Web Building, the number of Mac computers available has doubled since 2004, from 11 to 22. AIT has also installed Mac computers since that time. ITS, also in response to user and faculty feedback, installed Linux and Vista computers, and re-purposed a specialized Unix classroom to be both Unix and Windows capable.

Results of the 2007 and 2008 administrations of the library experience survey led to a number of additional services for library computer users:

- More students indicated that they were using flash drives. As a consequence, the library now sells flash drives to meet user demand.
- The majority of respondents indicated that it would be desirable to receive information about library events via text message, cell phone, e-mail.
- Few students access library resources exclusively from “remote” locations (i.e., home or elsewhere off campus), so on-site services remain paramount.

Brooklyn College adheres to an impressive replacement cycle for its public use computers. In the more popular computer labs (the library café and high-use areas of the library and WEB

building), new computers are installed every 18-24 months. These regular computer upgrades allow Brooklyn College computing to keep up with continual advancement in processing speed and available RAM, among other important capabilities.

Summary. Satisfaction with public computing labs is high and is increasing. The 2007 ITS public computing labs customer satisfaction survey showed that 38.9% of all lab users use the labs daily. 67.6% use the labs at least one a week. This shows that those who use the labs are frequent users. The 2007 ITS public computing labs customer satisfaction survey showed that 69.7% of all lab users are very satisfied with the lab. 91.7% are at least somewhat satisfied. 100% of respondents said that they would recommend the lab to other students. According to the Student Experience Survey, the percentage of students indicating that they are satisfied or very satisfied with campus computing in general has increased by 12% between 2002 and 2008, from 64% in 2002 to 76% in 2008.

Faculty Training and Development in Use of Technology for Teaching, Learning, and Research

Faculty members have access to technology that can be used to improve teaching and research. A number of new technologies have been implemented at Brooklyn College in recent years that can be used in the process of teaching. Further, numerous technologies have been provided to assist faculty research. The IT Plan established several objectives for Faculty Training and Development in the Use of Technology:

- Develop and support technology-based faculty and student research activities.
- Faculty will Learn and Adopt Best Practices in technology-mediated instruction, cooperative learning, and building learning communities through technology.
- Faculty will learn software applications, functions, and pedagogical approaches appropriate to teaching in their respective fields.
- Develop a programmatic approach to building online course sequences, degree and certificate programs; provide faculty with training and development opportunities in best practices and approaches to teaching of fully and partially online courses.

Develop and support technology-based faculty and student research activities.

New technologies have been utilized to allow students and faculty to conduct their research more quickly and more efficiently. Computer labs have been provided specifically for faculty to help them do their work. According to the 2008 faculty satisfaction survey, 90.4% of faculty members indicated that they are at least somewhat satisfied with the ITS public computing lab. According to the 2008 faculty satisfaction survey, 100% of faculty members indicated that they are at least somewhat satisfied with lab staff support at the ITS public computing lab.

In a faculty survey of satisfaction with the computer labs, 90% of faculty indicated that they were satisfied or very satisfied with the labs. For those that were dissatisfied, the inability to print was cited as the greatest problem. At the time, only students had a free printing allocation; now, faculty who teach in the labs are also eligible for a free printing quota. Faculty members also indicated that the rooms did not allow convenient storage for their belongings. ITS provided lockers that faculty could store belongings while working at the labs.

The college guarantees that all full time faculty are provided with a computer. These computers are upgraded on a three-year replacement cycle (i.e., after three years, faculty have the option to request an upgrade). The faculty training and development lab, established in 1994, provides special training and assistance to faculty members who want to use computers in classroom instruction. This includes on-site training as well as ad hoc assistance with problems.

For many years, faculty who request staff technical support have provided comments to AIT management by e-mail. Managers have used these comments, as well as other observations, to train staff to work more effectively with faculty members. Evaluations provided a basis for decisions about staff members' future employment and salary with AIT. AIT recently created a standard training evaluation form based on the content of past e-mail comments, and this has recently been put into use.

- Annual retreats held by Library and AIT officials (separately and together) provide an opportunity for administrators to share ideas, opinions, and impressions of customers. Recent meetings led to the introduction of new technologies for research at Brooklyn College:
- EZ Proxy allows BC students and faculty to have access to library resources for free from anywhere. Students can get access to electronic journals, books, and databases at any time.

- The library/AIT decided to implement its “ask a librarian” online reference help service, which allows users to get reference help 24 hours a day, seven days a week.
- An e-mail suggestion box was made available to library website visitors.
- In 2005, Refworks, a bibliographic software that allows researchers to download citations from databases. This was implemented as a result of direct faculty requests. Monthly workshops have been offered to students and faculty ever since to help them learn to use these tools.
- In 2007, an MLA citation workshop was added in response to student comments from the suggestion box.
- Library Electronic Resources Utilization Data: Various statistics provided by different vendors. Includes internet hits, downloads, JSTOR usage, e-library. This provided an estimate of existing demand, which influenced the decision to subscribe to some journals, and not others.

The Faculty Council meets regularly to discuss a variety of issues concerning faculty, including IT services. In 2007, the Faculty Council worked with ITS and the Library/AIT to create a report on computer utilization at Brooklyn College. The report recommended improvements in search technology and diversity of operating systems. As a result of these recommendations, Linux-based Macintosh computers were installed in the faculty lab.

Faculty will Learn and Adopt Best Practices in technology-mediated instruction, cooperative learning, and building learning communities through technology.

Technology can be a powerful pedagogical tool in the classroom. Increasingly, faculty members are relying on technology-mediated instruction to communicate with students about course work. Faculty members have the ability to assign computer-based course work with the understanding that students have the resources available on campus to complete that work. Simultaneously, student confidence in using technology to complete their assignments has grown.

Students are relying more on computer technology to do their course work. The percentage of students indicating that they often or very often use a computer at school to do a class assignment increased from 36% in 2002 to 47% in 2008 according to the CUNY Student Experience Survey, a 9% increase. The percentage of students indicating that they often or very often search online for information for a class assignment increased from 47% in 2002 to 66% in 2008 according to the CUNY Student Experience Survey, a 19% increase. According to the Fall 2007 Library Experience Survey, 38.7% of all library users start with a library database when doing research. According to the 2007 NSSE, the percentage of first year students who indicated that they very often used an electronic medium to discuss or complete an assignment increased from 16% in 2003 to 20% in 2007. For seniors, the increase was up to 21% in 2003 from 16% in 2007.

E-mail has become an important way for students to communicate with faculty. As faculty members have become more comfortable with using e-mail as a tool, its use at Brooklyn College has grown. According to NSSE, the percentage of first year students who indicated that they communicated with their instructors very often via e-mail increased from 18% in 2003 to 29% in 2007. For seniors, there was a 7% increase, from 23% in 2003 to 30% in 2007. The percentage of students indicating that they often or very often communicate with a professor using e-mail increased by 22%, from 23% in 2002 to 55% in 2008, according to the CUNY Student Experience Survey.

More students are reporting that they are learning advanced computer skills in their classes. According to the 2007 National Survey of Student Engagement, there was a 19% increase in the

percentage of students who indicated that Brooklyn College contributed to students' knowledge, skills, and development in using computing and information technology. In 2003, 25% of first year students felt that Brooklyn College did this very much; in 2007, 44% did so. Among seniors, in 2003, 26% that Brooklyn College did this very much; in 2007, 46% did so, a 20% increase.

Faculty will learn software applications, functions, and pedagogical approaches appropriate to teaching in their respective fields.

AIT offers extensive technical training for use in classroom instruction. The Center for Teaching offers pedagogical workshops to help faculty incorporate these tools in their teaching. The College provides a faculty drop-in center in the faculty training and development lab. Faculty, including adjunct faculty, can use this center to train, discuss issues, and construct course materials on a drop-in basis.

As a result of these services, faculty is using more advanced technology to teach their classes. The percentage of students indicating that they often or very often use a computer in class increased from 10% in 2002 to 13% in 2008 according to the CUNY Student Experience Survey. This represents a 3% increase over that time. According to the National Survey of Student Engagement, the percentage of first year students who indicated that computers were emphasized very much in academic work increased from 37% in 2003 to 44% in 2007. For seniors, there was a 5% increase, from 41% in 2003 to 46% in 2007.

Develop a programmatic approach to building online course sequences, degree and certificate programs; provide faculty with training and development opportunities in best practices and approaches to teaching of fully and partially online courses.

More online learning opportunities have been made available to Brooklyn College students in the past ten years. The percentage of students indicating that they often or very often participate in an online class discussion increased from 8% in 2002 to 11% in 2008 according to the CUNY Student Experience Survey. This represents a 3% increase over that time. In 2004, 44% of students indicated that they often or very often looked at the web site for a course they were taking, a 13% increase from 2002 (due to a CUNY decision, this question has not been asked on more recent versions of the exam). Blackboard has also provided a useful interface for online access to course materials.

Although Brooklyn College has a collection of courses that are entirely or partially online, to date the College does not offer a coordinated online degree program. This objective remains an important goal for Brooklyn College in the future.

Facilitate Classroom Instruction Using Technology Tools

Faculty have more options than ever before for using technology in the classroom. The introduction of smart classrooms, and the increasing variety of such classrooms, has provided faculty with options for better presentation of material and use of interactive tools. In addition to smart classrooms, faculty can request carts. The IT Plan established several goals for facilitating Classroom Instruction Using Technology Tools:

- Maintain Labs and Smart Classrooms for Optimum Availability, Reliability, and Effectiveness.
- Meet utilization demands in terms of facilities and technologies.
- Provide adequate support and training to faculty using the various facilities and resources.

Maintain Labs and Smart Classrooms for Optimum Availability, Reliability, and Effectiveness.

ITS has played an instrumental role in helping Brooklyn College faculty use technology to teach students effectively. “Smart” classrooms, which are wired to allow computer-based instruction and multimedia technology, have been central to this effort. Presently, 50 classrooms at Brooklyn College have this technology. Similar technology is also available to faculty in the form of 120 mobile carts possessed by the departments. At any given time, more than 175 courses at Brooklyn College can be taught using this technology.

Learning labs provided at the learning center, in the library, and elsewhere on campus have gained support from students. The percentage of students indicating that they are satisfied or very satisfied with learning labs increased from 32% in 2002 to 49% in 2008 according to the CUNY Student Experience Survey. This represents a 17% increase over that time.

Security remains an important part of technology maintenance. ITS has worked to maintain the quality of computer equipment in the computer labs and smart classrooms. Virus, spyware, and other malware protections have been regularly updated. An ad hoc review of security for smart rooms found that 60% were found to be unlocked at least once. An effort was made to publicize the importance of locking doors to prevent theft. ITS has invested in better tools, such as cages and locks, to better secure equipment in smart classrooms.

Meet utilization demands in terms of facilities and technologies.

Demand for smart classrooms often exceeds supply. Some additional facts from this survey:

- The majority of faculty (60.5%) would be willing to move to another building on campus, if it were necessary in order to get a smart classroom.
- Communicating to individual faculty remains a challenge, despite numerous communications via email, letter, and signs. The majority of faculty (62.1%) were not informed by their departments that ITS provides various forms of training and orientation. Most faculty who are new to the facilities, prefer a one-on-one orientation, which ITS provides upon request to dozens of faculty each term. Nearly all faculty felt comfortable with the technology after their initial lesson(s).
- 95% of faculty who received training from ITS rated the quality as good, very good, or excellent.
- The faculty smart survey indicated that faculty considered the printed instructions clear and accurate, although some reported not being able to find those instructions. ITS now regularly inspects each room and replaces missing items.
- 44% of faculty were not aware that ITS has an instructional tech team ready during all class hours to provide technical support, despite numerous signs posted in each room.
- 95% of faculty who received classroom support rated the quality as good, very good, or

excellent.

- 63.6% of faculty who contacted the ITS instructional tech team for assistance during a class session received help within 15 minutes of the call.
- 70.8% of faculty were able to set up the technology tools provided in the smart facility within 5 minutes.
- 94% of faculty would request that their classes be scheduled in one of the college's facilities again.

The faculty smart classroom satisfaction survey also included many open-ended items. Many faculty members cited inadequate air conditioning as a major problem. As a result, air conditioning was installed in 300 additional classrooms. This is especially important for summer courses.

In a faculty computer lab satisfaction survey, 90% of faculty indicated that they were satisfied or very satisfied with the labs. For those that were dissatisfied, the inability to print was cited as the greatest problem. At the time, only students had a free printing allocation; now, faculty receive one as well for us in public computer labs. Faculty members also indicated that the rooms did not allow convenient storage for their belongings. ITS provided lockers that faculty could store belongings while working at the labs.

At times, AIT has been able to provide assistance to faculty and students when constraints existed on the use of technology in the classroom. The listening and speaking language lab maintained by the Modern Language department in Boylan Hall is closed in the evening and on weekends. In 2007, the department began working with AIT to provide language listening in the library. A pilot project provided headphones for this purpose in the New Media Center. Significant utilization of this resource has led to the decision to make the listening labs permanent. Current plans are to provide speaking as well (which will require the soundproofing of rooms). By making this feature available in the library, it is now possible for students to work on their language skills even when the department offices are closed.

Provide adequate support and training to faculty using the various facilities and resources.

For effective instruction in smart classrooms to take place, it is necessary that faculty members know who to contact when problems arise. Efforts on the part of ITS to improve smart classroom faculty assistance has been data driven. The 2008 faculty smart classroom survey showed that 17% of the faculty respondents did not know that it was ITS that maintained the smart classrooms. As a result, ITS made a stronger effort to publicize that they are the administrators or smart classrooms, and that it is ITS who should be contacted if and when problems arise.

ITS had been running seminars, which were not well attended, to help train faculty in the use of smart classrooms. In addition, the 2008 faculty smart classrooms survey showed that almost 20% of the faculty respondents were not aware that ITS provided free training for the use of technology in the smart classrooms. On this basis, and with the low attendance in mind, seminars were discontinued, in place of personal training. Outreach efforts became increasingly direct (not through departments) so as to ensure information about training was received by faculty members.

Brooklyn College has had support staff available during all teaching hours, and has provided one-on-one and group training sessions every term. Clear instructions have been posted for use of information technology resources. An instructional technology support hotline was instituted and maintained. All faculty seeking assistance and training in the use of equipment were able to obtain it within three days of the request. As a result, 70.8% of faculty report that they are ready to teach their classes in smart classrooms with less than five minutes of technology set-up.

Online Services

The use of internet technology to facilitate registration, the sharing of information, and the educational process is an essential part of the IT Plan. There is only one objective for online services: that Brooklyn College will create effective, secure, and user-friendly online applications for students and faculty. Brooklyn College has introduced a number of online services in recent years, including:

- The Brooklyn College Portal
- Degree Progress
- Library Search

The Brooklyn College Portal

In 2004, Brooklyn College introduced a web portal that allowed students to log in and get personal information about their course registration status, read campus news, and conduct general business with Brooklyn College. Brooklyn College remains the only college in the CUNY system with its own portal that offers single sign-on access to multiple services. Over the years, assessment has guided continuing improvements in the quality student service provided by the portal.

The original portal was in place from 2003 to 2007. Prior to its introduction, ITS officials held focus groups to get a sense of how to provide an efficient, user-friendly design. A second version of the portal was implemented in 2007 in response to an online feedback survey, user suggestions obtained by e-mail and telephone, and ad hoc observations of staff. Three observations were particularly important in shaping the second portal:

- The original portal required frequent service interruptions due to server maintenance.
- The arrangement of channels and tab titles on different pages was not intuitive.
- Content within the portal was difficult to maintain.
- The mechanism for resetting passwords was inefficient.

Numerous solutions were employed to solve these problems.

The original portal required frequent service interruptions due to server maintenance. User comments, through e-mail and telephone support line communications, indicated that there were too many times when students could not access the portal. There were a number of technical problems that had to be addressed by administrators each night. When the portal underwent maintenance, it went offline. For the second portal, ITS made a reduction in the need for such maintenance a priority.

The arrangement of channels and tab titles on different pages was not intuitive. E-mails and telephone support line comments from students, faculty, and staff suggested that there were problems with the arrangement of the original portal. Specifically, too many clicks were needed for users to get to the information that they needed most.

ITS tracked the hit counts for each page in the portal, and were able to identify the pages that were visited most frequently. Faculty tended to access their class rosters and the class-wide e-mail mechanism, while students were most likely to access to their schedules, grades, and WebSIMS. When the second portal was designed, links to these pages were made available on the main page, so users would be able to access the information they needed as quickly as possible. In addition, the titles selected for each page were changed to make them more logical.

The mechanism for resetting passwords was inefficient. Online feedback surveys, as well as user comments, indicated that the method of changing one's password was confusing, and may have

affected the willingness of users to rely on the portal for basic information. In the first portal, the password reset function was difficult to find and did not clarify all requirements. For example, students needed to confirm their new password with a pin number, but students at times would forget their pin number, or enter it in the wrong format. For the second portal, the process has been simplified. Clear instructions for using the pin number are now posted, and the steps required to reset pin numbers if needed are provided on the site.

Second Portal. The second portal was implemented in 2007. Significant changes were immediately apparent. First, there was a very significant reduction in the number of calls for assistance made to the telephone support line. During peak periods with the old portal, there were 60-70 calls per day for portal support. With the second portal, the number of such calls declined to 40-50, while overall usage of the portal increased significantly. On a typical day, the number of support line calls rarely exceeds 30. An ongoing feedback survey has been available to users to provide comments about the portal. This survey shows strong positive support for the second portal. This survey has helped to inform possible changes for a third portal, if implemented.

Third Portal. ITS is currently considering the implementation of a third portal upgrade in summer 2009. ITS staff have been visiting computer labs on campus, and asking users informal questions about their level of satisfaction with the quality of the current portal, and what new features or applications might be desirable.

Some changes have already been implemented in response to these recommendations. ITS has created a special welcome tab for new students, allowing them to get quick access to information they are likely to need, such as how to set up a registration appointment, a checklist of things they should know as new students, and important phone numbers and links. Currently, ITS is testing a special welcome tab for new faculty and adjuncts. Links to forms and policies they will need to be aware of would be provided.

A focus group will be convened in the coming months to discuss the current portal and inform the preferences for the new portal. Preferences and criticisms emanating from the informal computer lab user questions will provide the basis for focus group questions. The focus group will in turn influence the content of the third portal.

Degree Progress

The degree progress system allows students online access to a current transcript summary. Students can use this system to plan their course enrollments with an eye toward degree completion. Degree Progress is a product created by a company called Sungard. ITS has attempted to relay preferences and comments to this company in order to guide improvements to the product. The degree progress system was implemented in 2004, and has since undergone two upgrades.

The original version of Degree Progress, delivered by Sungard as Degree Works, had numerous technical problems, and needed regular maintenance. The original Degree Works interface was complicated, often taking many site clicks to reach the information needed. An informal, internal study suggested that it would often take as many as six clicks to get the information needed. Discussions with department chairs also confirmed a demand for more efficient web site organization.

ITS decided to create their own “front end” interface for users, which allowed faster access to needed information. In addition, access to the Degree Progress system was built into the new portal, which allowed for one-click access to the system. Lastly, the impact of site maintenance

was reduced. The Degree Progress system requires ongoing maintenance, as every requirement change needs to be coded into the system. When faculty council makes a new decision or a new version of the bulletin comes out, this needs to be entered into the system. ITS now manages a shadow system that allows maintenance to take place while students continue to use the system.

TAP Audit. Many Brooklyn College students receive state aid in the form of New York State Tuition Assistance Program (TAP) awards. Recent changes in TAP rules require students to take a minimum number of required and elective courses each semester. As a result, CUNY is working with Degree Works to build this into the new version of the system. When available, course required status and TAP eligibility will be built into the Degree Progress system. This will allow advisors to determine in advance if a student's schedule could jeopardize TAP funding.

Student Research and Communication

Online technology has become essential to student research. The Student Experience Survey indicates that the use of online services has increased significantly in recent years:

- There has been a 22% increase in the percentage of students indicating that they often or very often communicate with a professor using e-mail, from 23% in 2002 to 55% in 2008.
- There has been a 19% increase in the percentage of students indicating that they often or very often search online for information for a class assignment, from 47% in 2002 to 66% in 2008.
- There has been an 18% increase in the percentage of students indicating that they often or very often communicate with a classmate about an assignment using e-mail, from 23% in 2002 to 41% in 2008.
- There has been a 3% increase in the percentage of students indicating that they often or very often participate in an online class discussion, from 8% in 2002 to 11% in 2008.

As online technology becomes more important to the academic experience, Brooklyn College will continue to assess the quality of the online services it provides to students, faculty, and staff.

Conclusion

The Brooklyn College Information Technology Assessment Plan has provided a foundation for continuing improvement in the provision of technology for learning to students and faculty. The IT Assessment plan has informed the evaluation of currently available technology as well as the introduction of new technology. The assessment cycle is mature in Public Computer Labs, Smart Classrooms, and Portal Services. Improvements are continually introduced based on a wide variety of assessment results that meet high standards, especially in equipment replacement.

There are two areas that need to be addressed in the coming years. We must align training programs more closely with faculty development efforts, described in college goals and overall college and faculty development efforts. We must also address the building of online course offerings, which was identified as a goal in the 2007 IT Master Plan. Ongoing assessment activities will be used to inform future decision making to help Brooklyn College remain a leader in technology for higher learning.