

**U.S. DEPARTMENT OF COMMERCE
National Telecommunications & Information Administration**

Evaluation of the
Telecommunications and Information Infrastructure Assistance Program

Case Study Report

**Distance Learning and Literacy Networks in
Louisiana; Loyola, University
94079**

New Orleans, Louisiana

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PREFACE

On behalf of the National Telecommunications and Information (NTIA), I am pleased to share the following report that is one of a series of case studies conducted on grants awarded by the Telecommunications and Information Infrastructure Assistance Program (TIIAP) in 1994 and 1995. The case studies are part of the program's evaluation effort designed to gain knowledge about the effects and lessons of TIIAP-funded projects. NTIA contracted Westat, a research and consulting firm, to perform an independent evaluation of the program's first two years of grants. The evaluation consisted of a mail survey of 206 grant recipient organizations and in-depth case studies of selected projects. In February, 1999, the Commerce Department released Westat's evaluation report.

The projects selected for the case studies cover a broad range of program types and sizes, planning grants as well as demonstration grants, and they show varying degrees of implementation, sustainability, and replication. Westat selected the projects to represent a cross-section of all projects funded in the program's first two years. Specific selection criteria included geographic region, target population, project application area, project category, and size of award. To conduct each case study, Westat reviewed all project files, including progress reports and the final report, and conducted site visits. The site visits consisted of project demonstrations and interviews with project staff, representatives of partner organizations, and project end users.

NTIA thanks the case study participants for their time and their willingness to share not only their successes but their difficulties, too. Most of all, we applaud their pioneering efforts to bring the benefits of advanced telecommunications and information technologies to communities in need. We are excited about the case studies and lessons they contain. It is through the dissemination of these lessons that we extend the benefits of TIIAP-funded projects nationwide.

We hope you find this case study report valuable and encourage you to read other TIIAP case studies. You may obtain additional case studies and other TIIAP publications, including the final Westat evaluation report, through the NTIA web site (www.ntia.doc.gov) or by calling the TIIAP office at (202) 482-2048. We also are interested in your feedback. If you have comments on this case study or suggestions on how TIIAP can better provide information on the results and lessons of its grants, please contact Francine E. Jefferson, Ph.D. at (202) 482-2048 or by email at fjefferson@ntia.doc.gov.

Larry Irving
Assistant Secretary for Communications and Information

TIAP CASE STUDY

Distance Learning and Literacy Networks in Louisiana: Loyola University

A. EXECUTIVE SUMMARY

The 1994 demonstration project at Loyola University City College in New Orleans was designed to extend education and university services to underserved areas in Louisiana using advanced telecommunications technologies. To this end, the project had two primary goals:

1. To improve literacy services at 10 regional literacy coalition sites serving rural Louisiana; and
2. To contribute to the improvement of the quality of health care in rural communities of Louisiana.

The original proposal was developed with the expectation that the Bell South Foundation would contribute a major portion of the matching funds. When the foundation decided not to make any major awards for 1995, the project team had to downscale the project's scope, secure alternate funding, and revise the budget. As a consequence of this setback, grant activities were delayed, with approval from NTIA, until June 1996.

The literacy component of the project was pursued in partnership with the Louisiana Coalition for Literacy (LCL), a statewide umbrella organization supported by Louisiana to improve the level of functional literacy and lifelong learning among disadvantaged populations throughout the state. A computer conferencing network was created to increase the efficacy of literacy providers serving rural parishes by linking them with each other and with literacy resources at Loyola University New Orleans. The electronic network established important communications linkages among literacy providers in 10 of the 23 public and private-sector literacy sites that participate in the coalition. It further enabled the sites to access up-to-date information on literacy methodology, grant information, and model programs. The end users of project resources for this component of the project were literacy coalition staff in the 10 sites receiving computers and Internet connections. The indirect beneficiaries were the clients in the adult literacy sites.

Several difficulties arose during the implementation phase of this component of the project. The original Internet service provider, AOL, had a hard time providing access in some of the rural areas and could not provide access to the library at Loyola University, which relied on a Gopher connection. A more serious concern had to do with a lack of leadership with respect to whether the computers were to be used for administrative or instructional purposes. LCL decided in the middle of the grant period to remove computers from sites where the computers were used for administrative purposes and install them in sites where they would be used for instruction. No apparent attempt was made to assist or encourage the original project sites to use the equipment for instructional purposes, causing some distress at those sites losing equipment.

Despite these problems, the literacy component of the project met with a fair amount of success. The project established an infrastructure that is immediately useful for literacy providers and that positions them for access to additional resources in the future. The computer equipment and Internet connections provided literacy centers throughout the state with opportunities to communicate and share ideas via e-mail, access literacy information through the Internet and the Loyola University Library, and incorporate computer literacy activities into their programs. And the relationship that developed during the grant period

between Loyola University and the LCL provided a strong foundation for future collaborative activities. Nevertheless, evaluation data suggest that the literacy sites could do much more to fully realize the benefits of the computer and telecommunications resources provided by the grant.

Our Lady of the Lake Regional Medical Center in Baton Rouge was the main partner for the component of the project striving to achieve the second goal. This component of the demonstration project was designed to incorporate two-way audio and video conferencing into an already existing distance learning program. The proposed end users of project resources were the nearly 100 registered nurses enrolled in Loyola's off-campus Bachelor of Science in Nursing (BSN) program at 10 rural sites in southern Louisiana. At the time of the grant, approximately 90 percent of the off-campus BSN students attended school on a part-time basis while working full-time in their regional hospitals.

Project funds were used to expand the university's distance learning program for nurses by building a video classroom at Our Lady of Lakes Regional Medical Center; thereby enabling live interactive distance learning and distance conferencing with two existing video classrooms on the Loyola campus. Each of the three video classrooms was set up with approximately 40 seats in a traditional classroom style with the addition of three cameras, four monitors, two speakers, drop microphones, and a document block for displaying visual aids on camera. The instructor wore a cordless microphone, and student questions/answers were picked up with the drop microphones. Classes utilizing the interactive technology were held one evening each week during the fall 1995, spring 1996 and summer 1996 semesters.

To further increase the level of interaction between students and faculty involved in the interactive courses, a computer, modem, and printer were placed in each of the 10 hospital sites housing Loyola's off-campus BSN programs. These sites are located in parishes throughout central and southeast Louisiana that have been federally designated as "medically underserved." The computer workstations are available to all of the approximately 100 off-campus BSN students enrolled each semester, not just the 10-20 enrolled in the interactive video courses, thereby developing computer literacy and Internet research skills for all off-campus students as well as providing access to e-mail and other computer-related software. Each enrolled student was allotted 10 hours per month prepaid connect time with a local Internet service provider.

The TIIAP project allowed Loyola University City College to experiment with new technologies in its off-campus programs for nursing students. However, the benefits of the new technologies fell far short of the project team's expectations. To the surprise of project staff, students in the off-campus nursing program rarely used the computers that were installed at the hospital sites, largely because they were already overextended with job, school, and family responsibilities, and it was difficult for them to fit computer time into their schedules. Furthermore, the 44 off-campus nursing students who participated in the interactive courses in Baton Rouge found the equipment distracting and alienating. They preferred the flexibility afforded by the video classes to the inconvenience of the interactive classes. The eight faculty members who taught the interactive video courses generally agreed that the interactive technology was of limited value. Although some faculty enjoyed teaching with the interactive format, most strongly felt that the 2-second communication delay between sites and poor audio and video quality precluded effective communications with off-campus students. Due to the difficulties associated with this component of the project, there were no formal plans, at the time of the site visit, to continue using the computer equipment installed at the hospital sites or the interactive video classroom that was developed in Baton Rouge.

B. OVERVIEW

Purpose and General Approach

The 1994 demonstration project at Loyola University City College in New Orleans was designed to extend education and university services to underserved areas using advanced telecommunications technologies. To this end, the project had two primary goals:

- To improve literacy services at 10 regional literacy coalition sites serving rural Louisiana; and
- To contribute to the improvement of the quality of health care in rural communities of Louisiana.

Grant funding provided equipment, training, personnel, and technology access to enable the college to achieve these goals. Because project activities associated with each of the two goals are unrelated, site visit findings will be treated separately throughout the remainder of this report.

Goal 1. To improve the literacy services at 10 regional literacy coalition sites serving rural Louisiana

In partnership with the Louisiana Coalition for Literacy, a computer conferencing network was created to increase the efficacy of literacy providers serving rural parishes by linking them with each other and with the resources of the Lindy Boggs National Center for Community Literacy at Loyola University New Orleans.¹ This electronic network would establish vital communications linkages among literacy providers in 10 of the 23 public and private-sector literacy sites that participate in the coalition. It would further enable the sites to access up-to-date information on literacy methodology, grant information, and model programs.

Equipment purchased for this component of the project included 10 computers, modems, and printers. Project funds also paid for each literacy site to receive 10 hours per month Internet connect time. Internet service was provided by a local Internet service provider (ISP).

The proposed end users of project resources were literacy coalition staff in the 10 sites receiving computers and Internet connections. In nearly every case, the primary staff member at each site was a Vista volunteer from the AmeriCorps national service program on assignment for a 1-year period. The indirect beneficiaries were to be the student clients in the literacy sites, i.e., adults and out-of-school persons age 16 and above.

¹ The Lindy Boggs National Center for Community Literacy, located in the J. Edgar and Louise S. Monroe Library at Loyola University New Orleans was established to nurture collaboration and partnerships between universities and urban communities, especially public housing communities, and to demonstrate through applied programs of service-learning and service-research the relevance of knowledge and the role of universities in helping to enhance literacy in the community.

Goal 2. To contribute to the improvement of the quality of health care in rural communities of Louisiana

The demonstration project was also designed to incorporate two-way audio and video conferencing into an already existing distance learning program. Project funds were used to expand the university's distance learning program by building a video classroom at Our Lady of Lakes Hospital in Baton Rouge, thereby enabling live interactive distance learning and distance conferencing with two existing video classrooms on the Loyola campus. Each of the three video classrooms are set up with approximately 40 seats in a traditional classroom style with the addition of three cameras, four monitors, two speakers, drop microphones, and a document block for displaying visual aids on camera. The instructor wears a cordless microphone and student questions/answers are picked up with the drop microphones. No training was provided to the eight faculty members who conducted the interactive courses because the project was on a tight implementation schedule and all but one of the instructors were experienced in teaching extension courses for Loyola University City College using video technology. Classes utilizing the interactive technology were held during the evening on a weekly basis. Lecture and discussion were the most commonly used teaching methods, although small group activities were occasionally used in some classes. Course assignments varied from research papers to objective tests. Faculty also encouraged extension students to use e-mail to contact them. A technician at Loyola University New Orleans operated both the on- and off-site cameras.

To further increase the level of interaction between students and faculty involved in the interactive courses, a computer, modem, and printer were placed in each of the 10 hospital sites housing Loyola's off-campus BSN programs. These sites are located in parishes throughout central and southeast Louisiana that have been federally designated as "medically underserved." The computer workstations are available to all off-campus BSN students, not just those enrolled in the interactive video courses, thereby developing the students' computer literacy and Internet research skills, as well as providing access to e-mail and other computer-related software. Each enrolled student was allotted 10 hours per month prepaid connect time with a local ISP.

The proposed end users of project resources for this component of the project were the nearly 100 registered nurses enrolled in Loyola's off-campus BSN program at 10 rural sites in southern Louisiana. At the time of the grant, approximately 90 percent of the off-campus BSN students attended school on a part-time basis while working full-time in their regional hospital. Approximately 95 percent of the students were female, and many were married with children. These students are considered by Off-Campus Learning Program (OCLP) administrators to be the "best students we have probably because they're more motivated and assume more responsibility for their own learning." The graduation rate for the off-campus students is the same as that for the on-campus students, and the retention rate is unusually high for an evening program. Students typically take from 3 to 12 credits per semester, and most complete the 129-credit BSN program in 6-7 years.

Description of Grant Recipients and Project Partners

Grant Recipient. The project was coordinated from Loyola University City College in New Orleans. Loyola University is a comprehensive university comprising 5 colleges with approximately 5,000 students. City College is dedicated to serving the educational needs and interests of adult learners who are able to attend college only in the evening. It differs from many other evening divisions in that it has its own full-time tenure track faculty as opposed to being simply an administrative unit dedicated to the coordination of evening and weekend classes.

In the fall of 1990, City College established the OCLP to provide courses for students who live outside of New Orleans or Baton Rouge by using videotape technology. Each semester several classes required by the BSN program were videotaped live in Loyola's state-of-the-art video classroom in New Orleans and sent to 10 participating hospital sites where students could view the tapes at their convenience in groups or individually. OCLP students submitted papers and completed the same assignments as on-campus students. Access to faculty and advisors was provided through a toll-free number and individual appointments. Exams were given at the off-campus sites by proctors.

Loyola University contributed nearly \$120,000 for the time and effort expended by the following project staff during the 1.5 years of the grant period:

- The previous Dean of City College served as the original project director. When she left Loyola University in summer 1995, the new Dean of City College took over the project. The project director reported spending approximately 20 percent of his time on project-related activities.
- The OCLP librarian worked approximately 2,000 hours developing project training materials and conducting training activities associated with using library resources.
- The OCLP technician worked approximately 2,000 hours on the project providing technical support for the literacy sites and helped operate the teleconferencing equipment for the interactive courses.
- The OCLP coordinator reported spending approximately 20 percent of her time assisting the project director on project-related activities.
- Eight Loyola City College faculty members taught the interactive nursing courses although the project did not add any significant burden to their regular teaching responsibilities.

The assistant OCLP Coordinator and members of Loyola's main library were also involved in conducting training activities associated with the grant, although they were not formally considered project staff.

The grant provided for three additional temporary personnel—two part time and one full time—as well as temporarily increasing two part-time personnel to full-time status. In a matter of weeks, the distance learning program jumped from one full-time employee and one part-time employee to four full-time employees and one part time employee.

Project Partners

Goal 1. The primary partner for this component of the project was the Louisiana Coalition for Literacy (LCL), a statewide umbrella organization supported by Louisiana to improve the level of functional literacy and lifelong learning among disadvantaged populations throughout the state. The LCL has a membership base open to individuals and organizations that are interested in family literacy, adult basic education, English as a second language, literacy in the criminal justice system, and workplace literacy programs. Benefits of membership include opportunities to share ideas and pool resources within a

network of literacy providers, to vote for an elected board, and to host Vista volunteers from the AmeriCorps national service program.²

Although Loyola University had no formal relationships with LCL prior to the TIIAP project, the partnership was initiated by project staff because LCL's activities fit in well with the adult education mission of Loyola City College and Loyola University's commitment to improve literacy throughout the state.

Goal 2. Our Lady of the Lake Regional Medical Center in Baton Rouge was the main partner for this component of the project. Our Lady of the Lake, the largest hospital in Louisiana, provided and housed the teleconferencing equipment for the interactive classroom that was created in Baton Rouge. The medical center also contributed for the time and effort expended by the technical administrator in Baton Rouge. The technical administrator was responsible for selecting and installing equipment³ for the network, installing ISDN telephone lines in the interactive classroom, and overseeing technical operations in Baton Rouge.

Project Costs

Total project cost: \$445,351

Amount of federal contribution: \$222,675

The main sources of matching money for the TIIAP project were \$177,994 contributed by Loyola University and \$54,682 contributed by Our Lady of the Lake Hospital.

C. PROJECT CONTEXT

Community Description

Goal 1. According to the 1990 census, Louisiana had nearly a million citizens at least 16 years old who were neither enrolled in school nor had a GED or high school diploma. Of that number, less than 5 percent were enrolled in state adult education programs during the 1993/94 school year. Although Louisiana has nearly a million undereducated citizens, fewer than 5 percent of them are getting help from the state's adult education programs.

Goal 2. Job security is a growing issue for many nurses in remote areas because of the competition with larger hospitals. Many of these hospitals are downsizing and over the past years have been cutting back on educational benefits provided to staff. For these reasons, nursing jobs in Louisiana are very vulnerable for those nurses without a BSN degree. Consequently, there is a great demand for RN-to-BSN programs, particularly in rural areas with limited access to education opportunities. The OCLP program and Loyola University City College has served approximately 700 students since it began in 1990. The student body of the OCLP nursing program reflects the community at large and is about 25 percent African American.

² The Louisiana Literacy Coalition received a 6-year grant from the Corporation for National Service to place Vista volunteers in selected sites for 1-year assignments.

³ Equipment purchased for the interactive video classroom included an AT&T System 1000 M50 video teleconferencing unit with a 27" monitor, control keypad and camera.

Status of Telecommunications/Information Infrastructure Environment Prior to the TIIAP Project

Goal 1. Prior to the TIIAP grant, computers were available in only a few of the state's larger and better funded sites such as that in Huoma. These computers were stand-alone workstations used for literacy training rather than administrative functions. None of the computers had Internet capabilities.

Goal 2. Prior to the TIIAP grant, Loyola's Bachelor of Science in Nursing (BSN) distance education program offered courses using videotape technology. No campus visits were required; class sessions were videotaped live in New Orleans and shipped after each class to students at the 10 off-campus sites. Extension students would view the videotapes each week and keep the same schedule of classes as on-campus students except that they were 1 week behind due to the videotaping and shipping process. A site facilitator would arrange for students to view the unedited class videos and act as a proctor for exams and other academic requirements. An 800 number was available for students to contact their instructor as well as to be in contact with university services. A full-time librarian was hired specifically to assist students with library searches.

OCLP staff considered this delivery system to be quite effective. Faculty reported no significant difference in the academic achievement of extension students and on-campus students, although it is not clear whether this was due to the efficacy of the delivery system or, as anecdotal evidence suggests, the high level of motivation observed among the extension students.

D. PROJECT IMPLEMENTATION

Activities/Milestones that Occurred Prior to the TIIAP Grant Period

In 1994, the Dean of Loyola University City College decided to apply for a TIIAP grant to improve and enhance the instructional capabilities of OCLP at a time when the program was becoming firmly established as a critical program within the college. The idea to develop a network for literacy providers arose in recognition of Loyola University's commitment to literacy, as demonstrated by the university's \$10 million grant to create the prestigious Lindy Boggs National Center for Community Literacy. After the LCL accepted the invitation to serve as a partner in the project, they were given the freedom to select which literacy sites would participate in the network and how the computer equipment would be used.

The decision to incorporate interactive video technologies into the off-campus BSN program was made to take advantage of the unique relationships that had developed among Loyola University, the 10 hospitals serving as off-campus program sites, and Our Lady of the Lake Regional Medical Center. The City College Dean had been working closely with Our Lady of the Lake Regional Medical Center as they worked to develop a BSN program of their own.

Activities/Milestones that Occurred During the TIIAP Grant Period

The original grant period began in October 1994 and continued until March 1996.

October 1994 through July 1995. Loyola University was notified of the TIIAP award in October 1994. However, grant activities were delayed when the Bell South Foundation backed out of their agreement to provide matching funds for the grant. Consequently, the project team requested an extension to locate an alternate source for the required matching funds and revise the project's scope and budget. The extension was granted in June 1995 and moved the end date back to October 1996. Due to these unexpected complications, grant activities did not officially begin until June 1995, when a flurry of activity took place. The evaluation plan was finalized. Computer and teleconferencing equipment was ordered and received. ISDN lines were ordered and installed. Training materials were developed. And a vendor for Internet access, America Online (AOL), was selected.

August 1995 through January 1996. The primary activities during this quarter involved setting up the interactive videoconferencing and computer networks, conducting training activities for the off-campus nursing students and literacy providers, and initiating data collection for the project's evaluation.

Three interactive courses using the video teleconferencing system were offered in the fall 1995 semester. Computers for student nurses were placed at 10 hospital sites in south Louisiana and additional computers were installed at 10 literacy centers throughout the state. Internet connections and e-mail accounts were established for the computers at each of the hospital and literacy sites.

A workshop was conducted on the Loyola campus to train one staff member from each of the 10 literacy sites on the use of computers and on access to the Loyola library and to the Internet. The training sessions were planned and conducted by the OCLP technical director and the Loyola Extension librarian with logistical support from the assistant OCLP coordinator. Ongoing technical assistance was provided via phone throughout the remainder of the grant period. Similar training sessions for the nursing students and facilitators were conducted at each of the off-campus learning sites.

Surveys of end users were administered and computer usage logs were collected from the literacy providers.

February 1996 through May 1996. Three new interactive courses were taught during the spring 1996 semester, and both the off-campus BSN students and literacy providers continued to use their respective computer networks to access campus resources, the Internet, and other computer-based services. Evaluation activities also continued.

June 1996 through August 1996. The final two interactive courses were taught during the summer 1996 semester, and both the off-campus BSN students and literacy providers continued to use their respective computer networks. Evaluation activities also continued.

September 1996 through December 1996. Although no interactive courses were taught during the fall 1996 semester, both the off-campus BSN students and literacy providers continued to use their respective computer networks. Evaluation data obtained via the surveys and usage logs were analyzed, and a focus group with the faculty who taught the interactive courses was conducted. A paper about the project was prepared and submitted for presentation at two professional meetings.

Steps Taken to Sustain Project Activities beyond the TIIAP Grant Period

Goal 1. The LCL was expected to assume responsibility for sustaining the network of literacy providers. However, the LCL developed no clear plan for doing so. Consequently, individual sites have assumed responsibility for funding their own Internet connections.

Goal 2. Because, as will be explained further in the next section, the interactive video component was considered a failed experiment, no effort was made to continue to utilize the interactive technologies for instructional purposes. And because the computer workstations at the hospital sites received little use, no effort was made to continue to offer Internet access at the sites. City College officials are considering plans to charge students a technology fee to pay for the technological infrastructure on campus. It had not been decided at the time of the site visit whether off-campus students would be charged the technology fee and whether the fee would be used to provide students with Internet and e-mail accounts.

OCLP has actively pursued grants, however, that will expand the telecommunications capabilities of the college. One grant provided a technical person who is working with faculty to develop a web page for each course offered through the college. Another grant from the Board of Regents, which is still pending, will assist in the development of Internet-based courses for off-campus students.

Activities/Milestones that Occurred Following the TIIAP Grant Period

Since the grant period ended in December 1996, four computer stations were removed from hospital sites where they were receiving very little use and were given to the LCL where there was a greater need. In addition to placing these four additional computers in selected literacy sites, LCL administrators have relocated several of the computer workstations to sites where they would be used for instructional rather than administrative purposes. Ford, Bacon and Davis, Inc., donated additional computers to the LCL so they could further expand the technological capabilities of the literacy providers.

Internet access was terminated at each of the implementation sites for both the hospital and literacy sites after the grant period ended. Individual sites were thereafter responsible for funding their own Internet connections. It was unclear how many of the remaining implementation sites had managed to secure funding to continue to provide Internet services. The local community, Houma, a literacy site we visited, provided funding for their Internet access.

Loyola University City College has moved away from providing distance learning opportunities for students via interactive video technologies. In an attempt to avoid many of the difficulties that emerged with the interactive courses, the college began offering online courses in the fall 1996 semester. Since then, three online courses have been offered each semester in which 10-20 students per course are enrolled. (The high demand for the online courses was not expected.) Although the online courses were reported to be extremely time consuming for the faculty, most instructors reported getting to know their off-campus students better via the online format than via the interactive video format.

Our Lady of Lake Regional Medical Center has continued to use the video teleconferencing equipment to provide continuing education opportunities for its doctors and nurses. They also use the equipment to conference with other hospitals throughout the nation.

Issues

Goal 1. Several issues arose in connection with providing Internet services for the 10 literacy sites. The main difficulties had to do with obtaining Internet connections in the most remote areas served by the project. When project staff initially looked into providing Internet access to rural areas in Louisiana, they contacted AOL because the company appeared to have the broadest coverage in the state and it had a good reputation for customer service. As it turned out, AOL had a difficult time providing access in some of the rural areas and was unwilling to meet several important needs of the project. For example, AOL could not provide access to Loyola's library, which relied on a Gopher connection. After the first quarter of the project, AOL was replaced by Communiqué, a regional ISP that offered less expensive rates for the rural sites. In a related issue, many end users in the literacy sites expressed frustration with the restrictions for online time.

A more serious concern had to do with a lack of leadership with respect to whether the computers were to be used for administrative or instructional purposes. The LCL's original intention was that the equipment be used exclusively for administrative purposes. At some point in the middle of the project, a vague policy was formed to remove computers from sites where they were used for administration and move them to sites where they would be used for instruction. The idea to assist or encourage the original project sites to use the equipment for instructional purposes had not been considered, and staff in those sites in which computer equipment was removed were justifiably distressed by the loss of equipment.

Goal 2. To the surprise of project staff, students in the off-campus nursing program rarely used the computers that were installed at the hospital sites. The following were among nursing students' many reasons for not using the computers:

- Because most of the nursing students were working full time at the hospitals, they had little desire to stay after work to use the computers. Furthermore, it was possible that they might be asked to work overtime if they remained at the hospital.
- Many hospital sites placed restrictions on the hours that the computers were available for use. Often the hours were incompatible with the students' work hours.
- In some cases, the computers on site were incompatible with a student's home computer.

Project planners had very little time to plan or experiment with the interactive video equipment used to teach the off-campus nursing courses. Ordering delays and delays in the installation of the necessary phone and ISDN lines put the video teleconferencing system behind schedule. Consequently, the equipment didn't arrive until the day before the first interactive video courses were scheduled to begin and many problems with the system had to be corrected "live" as the courses were being conducted, frustrating both faculty and students. Even though the equipment was installed and the courses began on schedule, a longer lead time would have allowed the instructors and technicians involved with the interactive courses to work out bugs in the system and get a feel for the new technology ahead of time rather than learning on the fly.

Although the interactive teleconferencing equipment was intended to create an environment for both on- and off-campus students to feel included in the class, the faculty members teaching the interactive courses and the students attending the courses expressed many difficulties with the technology. One difficulty stemmed from the imposing technical presence that the equipment created in the classroom. Of greater concern, the instructors reported that they couldn't see the faces of the extension students very well and the extension students reported that they couldn't see the blackboard and other visual aids very well. It

was also mentioned that some off-campus students were camera shy. They did not like to have the camera focused on them when asking questions. The most difficult aspect of using the video conferencing equipment was adjusting to the system's inherent delay in transmitting the data across ISDN lines. Not only did the 2-second delay make real-time discussions between the two sites awkward, but it served as a major obstacle in creating an environment for both groups of students to feel included in the class. The director of the nursing program at Loyola thought it was difficult to turn away from a full classroom of on-campus students to address a handful of students in the Baton Rouge facility. The students at the remote site were aware that they were being ignored and found it difficult to pay attention to the class. Furthermore, the teleconferencing equipment routinely failed in the middle of a live class session, leading to disruptive "dead times" until the problems could be worked out. Despite these problems, it is likely that the interactive courses would have been more successful if the faculty had received some training to help them modify their instructional practices in ways that would engage students and draw them into the lesson rather than assuming that the technology would magically give students in distant locations the impression that would feel like they were in the same classroom.

The nurses' schedules' also presented a problem for the live interactive courses. Many of the nurses preferred watching videotaped courses because it added more flexibility to their schedules. The live classroom forced the nurses to attend class at a given time. They were willing to give up the live interaction with the faculty for the flexibility of the videotape.

For these reasons, and also because of the high costs associated with transmitting the course across ISDN lines, the live video-conferencing course was discontinued after the grant period ended. Only one of the eight instructors for the interactive video courses was disappointed when the interactive format was dropped from the OCLP program. This instructor felt that the interactive technology enabled him to understand and know his off-campus students better. His appreciation for the technology probably stemmed from his unique practice of incorporating discussion time into each class session and his expectation that each student must contribute to the discussion. He acknowledged the difficulties associated with the technology but felt the increased opportunity for off-campus students to interact with him and with the on-campus students more than compensated for any inconveniences.

Comparison Between Project as Originally Proposed and What Actually Happened

The original proposal was developed with the expectation that the Bell South Foundation would contribute a major portion of the matching funds. When the foundation decided not to make any major awards for 1995, the project team had to downscale the project's scope, secure alternate funding, and revise the budget. Specifically, the number of literacy sites dropped from 18 to 10 and the number of interactive classrooms dropped from 3 to 1.

Unrelated to the situation involving Bell South, plans to incorporate audio-conferencing equipment into the off-campus BSN program for nursing students were dropped due to a lack of phone line availability.

As discussed previously, the computer equipment at the literacy sites was originally intended to be used for administrative and networking purposes, but ended up being used for direct instruction of literacy students.

Problems

The loss of Bell South as a partner was a serious, but not insurmountable, setback for the project and has already been discussed. A second problem had to do with AOL, the commercial vendor initially chosen to provide access to the Internet at the various project sites. The customer assistance provided by AOL was reported to be unsatisfactory in many respects. AOL also could not provide local telephone access numbers for some OCLP sites located in rural areas, thereby shortchanging the total number of hours available to end users in those areas. The project ended up using Communiqué to provide Internet access. Communiqué turned out to be more accommodating and affordable because they provided an 800 number for rural sites where a local number was unavailable.

E. PROJECT ACCOMPLISHMENTS AND IMPACT⁴

The TIAP project allowed Loyola University City College to experiment with new technologies in its off-campus programs for nursing students. However, the benefits of the new technologies fell far short of the project team's expectations. The literacy component of the project met with greater success. The project has put in place an infrastructure that is both immediately useful for literacy providers and positions them for access to additional resources in the future. The computer equipment and Internet connections provided literacy centers throughout the state with opportunities to communicate and share ideas via e-mail, access literacy information through the Internet and the Loyola University Library, and incorporate computer literacy activities into their programs. Nevertheless, evaluation data suggest that the literacy sites could do much more to fully realize the benefits of the computer and telecommunications resources provided by the grant.

Technology-Related Accomplishments

Goal 1. Computer equipment, Internet connections, and e-mail accounts were provided for staff at 10 literacy sites throughout the state:

- Alexandria;
- Baton Rouge;
- Houma;
- Lake Charles;
- Monroe;
- New Orleans (2 sites);
- New Iberia;
- Ruston; and

⁴ As will be discussed further in section F, evaluation activities were poorly implemented and reported. Consequently, quantitative evaluation results are, for the most part, presented as broad trends rather than specific frequencies or percentages.

- Shreveport.

The computer equipment was not heavily used in the majority of literacy sites. Of the nine Literacy sites that regularly kept records of computer usage,

- Two sites used the computer 1-5 hours per week on average;
- Five sites used the computer 10-20 hours per week on average; and
- Two sites used the computer 20-50 hours per week on average.

According to the results of a survey of literacy providers from each of the 10 project sites, the training activities conducted at Loyola University provided adequate instruction in the use of e-mail and the Internet. Respondents reported that they were able to share resources with other regional literacy centers in the coalition and locate literacy resources using the Internet. However, nearly half of the literacy providers requested an additional workshop to help them use the network to its fullest potential. Also, many respondents were dissatisfied with the limited online time that was provided by the grant (10 hours per month).

Goal 2. Video-conferencing equipment compatible with equipment housed at Loyola University was installed at Our Lady of the Lake Regional Medical Center in Baton Rouge. Loyola University offered eight courses utilizing the equipment and personnel provided by the grant. Three interactive video courses were offered in the fall and spring semesters and two courses were offered in the summer. Interactive classes were held in the evening on a weekly basis. Each class had students enrolled in both the on-campus and Baton Rouge interactive video classrooms. Class size in New Orleans averaged 19.5 students plus an average of 5.5 students in extension. The following courses were offered:

Fall 1995

- Religion & Culture
- English Composition
- Introduction to Nursing Research

Spring 1996

- Music Appreciation
- Introduction to Philosophy
- Foundations of Religious Studies

Summer 1996

- World Civilizations
- Sociology of Youth and Adolescence

All courses were applicable toward the BSN degree at Loyola University.

In addition, 10 computers were distributed to 10 hospital sites throughout the state. Internet access and e-mail accounts were also provided to the nearly 100 nursing students associated with the project sites. Reliable usage statistics were unavailable, however; one site reported that the computer was in use more than 20-50 hours per week on average.

Impact of the Project on Direct End Users

Goal 1. For this component of the project, the end users of project resources were the literacy providers at the 10 regional literacy centers. The computers, printers, and modems that were installed at the regional sites were reportedly very beneficial to the literacy providers who used the equipment. As reflected in the usage logs and questionnaires submitted by staff at the literacy sites, the computer services provided through the TIIAP grant provided the most benefit by enabling literacy providers at the various sites to network with others via e-mail. Networking also occurred on a nationwide basis through Internet discussion groups that focussed on literacy issues. Non-Internet services were also consistently reported to be useful to the literacy providers. For example, site directors used spreadsheets to keep records of students and tutors, word processors to create brochures and write solicitation letters, and office management software for keeping financial records.

Usage of the World Wide Web and other Internet services to access literacy resources in a timely fashion rose steadily throughout the project period as the relevant skills of the literacy providers increased; however, these services were still used less frequently and by fewer sites than the services mentioned above. This situation is unfortunate because those literacy providers who became adept at navigating the Internet were pleasantly surprised at the variety of high-quality educational software and other literacy materials that were available on the Internet. At least one literacy site also discovered that they could use the Internet as a source of information about grant opportunities and legislative development, which may help fund their literacy programs. File transfer protocol was not considered to be of much use in any of the sites, and very few literacy providers learned how to use the Loyola Library catalogue or Gopher.

Although the literacy sites submitted usage logs on an inconsistent basis,⁵ the available usage statistics are presented in Table 1.

⁵ Usage logs were requested from each of the 10 literacy sites on a monthly basis throughout the grant period. The reported response rates for the usage logs varied from 33 to 60 percent for a given quarter.

Table 1. Usage of computers at literacy sites by service types

Service type	Number times accessed September-December 1995	Number times accessed January-May, 1996	Number times accessed June-August, 1996	Total number times accessed September 1995-August 1996
E-mail.....	173	489	112	774
Non-Internet.....	148	316	65	529
Other Internet.....	49	140	37	223
WWW	46	104	15	168
Gopher.....	40	39	7	81
FTP	4	12	2	23
Library	4	5	0	9
Total.....	464	1,105	238	1,807

Some literacy sites have allowed literacy students to use the computers for learning purposes by making use of literacy software programs. The LCL president believes that those students who utilize the more basic literacy software programs are able to increase their reading level by as much as four grade levels in 1 year.

A few literacy sites have expanded the services they provide by offering computer literacy classes using the computer equipment provided by the TIIAP grant. For example, the Vista volunteer working at a literacy site in Bonita began offering a program called Literacy in Technology (LIT). LIT is designed to improve computer literacy for people with varying levels of experience using computer technology. Because only two computer stations are available at the site, a maximum of four students can attend the class at one time. The project coordinator from Bonita related an interesting success story from the LIT program. A woman who had become adept with Microsoft Excel as a result of participating in the LIT program received a well-paying job in Texas as an Excel programmer. Providing students with access to computers is considered to be vital to literacy education because the vast majority of jobs utilize computers in some fashion. It was also reported that those students who are parents want to learn to use a computer because their children are learning to use computers in school and they don't want to be left behind as their children progress.

Goal 2. The approximately 100 nursing students enrolled in Loyola University's off-campus RN-to-BSN program each semester were the intended end users of computer equipment installed at the 10 hospital sites throughout southern Louisiana. The placement of computers at the hospital sites can be considered an important first step in improving instructional support for these off-campus students. However, the computer equipment received minimal use, less than an hour per week per student on average. The reasons given by off-campus students for not using the computer stations include:

- Internet access was never available in some sites and quickly discontinued in others;
- Students didn't understand how to use the computers;
- Students weren't aware that the computers were available for use;
- The hours when the computers were available for use conflicted with the students' work schedule;

- Students own their own computers and prefer working at home;
- Students don't have time to use the computers at the hospital because they are busy working and are unwilling to stay after work to use the computers because they may get called in to work overtime.

The first four barriers listed above could easily have been avoided by the project team with careful planning and training. The final two barriers are beyond the project's control and suggest that the needs of the off-campus nursing students were not adequately assessed prior to designing the project. In addition, the instructors teaching the off-campus nursing courses rarely sought ways to utilize the computer resources provided by the grant. Internet research assignments and e-mail, for example, were requirements for the interactive Composition course. However, the instructors teaching the interactive video courses typically did not alter their instructional approaches at all, therefore students had little incentive for students to learn to use these resources.

Nevertheless, those students who did make use of the computer equipment at the project sites reported that the word processing software greatly improved their ability to write essays. E-mail and Internet resources were rarely used. Although most students believed that the e-mail system had the potential for making contact with instructors easy and beneficial, many students did not feel properly trained to use the system and few reported that the use of e-mail enhanced their learning experience. Similarly, although most students thought that the Internet had the potential for making research easier and more beneficial, many did not feel properly trained in its use and few actually conducted any online research via the Internet.

Only 6 of the 10 site facilitators at the hospital sites felt that the computers were being used enough to continue housing them. Consequently, four computer stations were given back to Loyola University (who immediately turned them over to the LCL). Surveys completed by the site facilitators at each site corroborated student reports that the computers were used primarily for word processing and that the training provided in the use of e-mail, the Internet, or the Loyola Library catalogue was inadequate.

End users of the teleconferencing equipment installed at Our Lady of the Lake Regional Medical Center in Baton Rouge includes the 44 off-campus nursing students who were enrolled in the eight interactive video courses, the eight faculty who taught the courses, and the technical staff at Loyola University who operated the cameras, microphones, and monitors in the interactive classrooms. The on-campus students attending the nursing courses in the interactive classrooms at Loyola can also be considered end users.

The on-campus students reported little difficulty in adapting to the technology in the classroom. They generally agreed that taking a course in the interactive video classroom was not distracting to them and that the instructors did not favor the off-campus students over the on-campus students. Nearly all of the on-campus students would take another course offered in the same environment. These findings suggest that the equipment placement and operation in the video classroom do not hinder the teaching environment for on-campus students; however, no attempt was made to determine whether the on-campus students gained anything from the opportunities afforded by the interactive technology to interact with off-campus students.

The off-campus nursing students in Baton Rouge were less accepting than their on-campus peers of the interactive class environment. The project clearly provided another course-taking option for nurses in the college's BSN program. And the technology allowed the students to communicate immediately with

faculty and on-campus students. However, survey responses suggested that these benefits did not outweigh the inconvenience of attending classes on a present schedule. Furthermore, the off-campus students found the interactive video equipment distracting and problematic. For example, it was difficult to see the chalkboard on the monitor or items projected by the document camera. Sound quality was also a problem. And even though most off-campus students felt that their instructor attempted to engage them in the lessons, they still did not feel they were truly part of the class. The two-second delay made interactions with the main campus awkward and seeing themselves on camera was intimidating. Despite such indications of dissatisfaction and feelings of alienation, and despite the fact that they preferred the flexibility afforded by the OCLP video classes to the inconvenience of the interactive classes, most off-campus students were satisfied with their interactive class and would enroll in one again if the opportunity arose.

The eight faculty members who taught the interactive video courses had different opinions about the value of the technology for this group of students. Some faculty liked teaching with the interactive format, but most were very vocally against the distorted classroom configuration that it engendered. Even though most of the instructors teaching the interactive courses reported that off-campus student academic performance was equivalent to that of on-campus students, several were not comfortable teaching in the interactive classroom and wouldn't do so again unless the technology advanced to allow instantaneous communication with off-campus students. As discussed previously, the 2-second communication delay and poor audio and video quality precluded effective communications with off-campus students. Furthermore, the instructors reported that teaching the interactive class required more faculty time than a regular on-campus class.

One professor conducted an interesting experiment and taught a class session from the Baton Rouge site so that the New Orleans students were in the distant classroom setting. This professor observed that the students in the distant classroom automatically go into a passive mode. He speculated that this was because students watching a television screen are conditioned to expect fast paced action and commanding special effects.

In terms of strengths, a few of the instructors felt they got to know off-campus student better via the interactive technology than they do when the students take courses using video tapes. They considered it a plus that students could ask questions during the class session rather than having to ask them at a later time via telephone. Seeing the faces of the off-campus students was also seen as contributing to the establishment of a stronger connection between student and instructor. Faculty generally agreed that testing this type of system was a good idea and that the videotape system will soon become dated technology.

Impact of the Project on Other Beneficiaries and the Overall Community

Goal 1. Both the director and the volunteer coordinator of the LCL believe that the TIIAP-funded computer equipment has had a tremendous impact on the communities in which they were placed. The computers installed at the literacy sites were reported to have created greater community awareness about the literacy services offered at the regional sites because it made the creation of newsletters and promotional materials easier and more affordable and also improved the quality of the materials. However, no data were available to support the assertions about community impact.

Goal 2. The TIIAP project has the potential to improve the quality of health care throughout southern Louisiana, according to the director of Loyola's Department of Nursing, because it represents the beginning enhancement of computer sophistication of RNs in a significant number of the region's hospitals.

Impact of the Project on Grant Recipient and Project Partners

Goal 1. The relationship that developed during the grant period between Loyola University and the LCL provided a strong foundation for future collaborative activities. The LCL director, for example, has been invited to serve on the Board for the Lindy Boggs National Center for Community Literacy.

Goal 2. The TIIAP grant was reported to have given OCLP staff at Loyola University invaluable insights into the benefits and liabilities of interactive video instruction and computer networking. They learned first hand that distance education technology will never be able to reproduce the on-campus classroom environment and that each distance education technology will have its own strengths and weaknesses.

In purely material terms, however, Our Lady of the Lake Regional Medical Center probably benefited more from the TIIAP grant than did Loyola University. The teleconferencing equipment installed at Our Lady of the Lake will continue to be used to allow the medical center to participate in teleconferences with hospitals throughout the nation.

And as with the literacy component of the project, the long-term relationship between the grant recipient, Loyola University, and the primary partner, Our Lady of the Lake Regional Medical Center, is an important outcome of the project. The staff of Loyola's off-campus nursing program have been instrumental in helping Our Lady of Lakes to develop its own fully certified RN-to-BSN program.

Project Goals Not Met

In general, project accomplishments appear to have met the rather broadly stated goals set forth in the grant proposal. Although some unexpected negative findings occurred regarding the interactive video courses and the computer equipment installed at hospital sites, project staff were satisfied to have had an opportunity to experiment with new distance learning technologies and learn from the experience.

Impact of TIIAP Support on the Initiative

Goal 1. Although some literacy sites have been successful in obtaining funding for computer equipment beyond what the TIIAP grant provided, the need for computer technology in the literacy sites is far greater than the TIIAP grant was able to provide. Therefore TIIAP support was considered to be vital to the improvement of services in those literacy sites that received computer equipment through the project.

Goal 2. As has been stated elsewhere, the TIIAP award provided OCLP staff with a valuable opportunity to learn about the students they serve and how alternative distance learning technologies can meet their needs. The opportunity was greatly appreciated because private institutions such as Loyola University rarely enjoy the luxury of making mistakes and taking risks.

F. EVALUATION AND DISSEMINATION

Evaluation

An adjunct faculty member who instructs evaluation methodology courses at Loyola University designed a formative evaluation to collect information to help guide program decisionmakers as they strive to improve their programs. The intent of the evaluation was, therefore, “to inform rather than prove or disprove the effects of the grants.”

The evaluation was marred by low return rates on the surveys and inconsistent reporting of equipment usage. Poor response rates were attributed by project staff to the remoteness of the project sites, although it was also suggested that the low return rates might indicate dissatisfaction by the end users. Nevertheless, because the data obtained were fairly consistent, project staff treated it as representative.

Of greater concern, the evaluation rarely strayed beyond assessments of user satisfaction. There was little effort made to assess how the infusion of new technology influenced the learning taking place at the hospital and literacy sites. The project evaluator attributed the narrow scope of issues being addressed in the evaluation to a lack of time to develop a more comprehensive design.

Evaluation data were used to guide several programmatic decisions at Loyola University City College. Based on survey results showing the low computer usage at the hospital sites and high demand for computer equipment at the literacy sites, four computers were removed from hospital sites and donated to literacy sites in late 1997. And student and faculty dissatisfaction with the interactive video courses led OCLP administrators to discontinue offering interactive courses in Baton Rouge.

Goal 1. The literacy component of the project was designed to be evaluated using a user satisfaction survey that was completed by literacy personnel during each quarter of the project period. The survey used an intensity scale to assess:

- The extent to which the computers at the sites were being utilized;
- Interest in continuing to use the computers at the sites;
- Perceived usefulness of the computer in improving communication with Literacy Coalition members, Loyola University, and other literacy organizations throughout the nation; and
- Usefulness of various computer features (e-mail, FTP, Internet, word processing, World Wide Web, Gopher, Loyola Library catalogue).

Seven of the 10 questionnaires were returned from the literacy sites in fall 1995. In spring 1996, nine were returned. Only one of the 10 sites completed a quarterly survey in summer 1996.

Site activity monitoring reports that were originally to be collected from each site on a weekly basis to determine the type and frequency of computer usage ended up being collected monthly. Again, the literacy sites inconsistently cooperated with the evaluation effort. For example, during the project’s first full month of operation (September 1995), only one site filed a usage report. During the second month, October 1995, reports from just six sites were received by the project evaluator. Only 10 of the 30 usage reports were returned for the summer of 1996 (June through August). Furthermore, the reports that were

completed were not always reliable. One site, for example, skewed the fall 1995 data by providing time estimates that did not differentiate between Internet and non-Internet activities as they were directed to do.

Loyola University librarians were interviewed mid-way through the grant period and at the end of the grant period to determine the ways in which literacy center personnel utilize their services. Field observations that were planned to determine if the computers were installed and being utilized as intended at the 10 literacy sites did not take place.

Goal 2. The off-campus nursing education component of the project was evaluated by asking the involved faculty and students to assess the use of computer and video-conferencing resources, and to identify the barriers to use and the relative effectiveness of the new technologies.

Post-course questionnaires were sent to the eight instructors teaching interactive classes to solicit their views on how the new technologies provided through the grant affected distance education instruction. Seven were returned. A group interview was also conducted with the interactive instructors at the end of the grant period to discuss the strengths, weaknesses, and ways to improve the interactive video instruction.

Post-course questionnaires were also given to the on-campus and off-campus students participating in the interactive classes to assess satisfaction and efficacy as compared to the previously used distance learning delivery system. Of the 148 questionnaires given to on-campus students during the three semesters, 93 were received, providing a return rate of 63 percent. Of the 41 surveys distributed to off-campus students, 17 were returned for a return rate of 41 percent. Informal interviews that were planned with students during breaks in instruction did not take place.

End of semester questionnaires were sent to those students at the 10 OCLP sites using the computer networking system after each of the three semesters in the project period. Of the 230 questionnaires sent out, 73 (32 percent) were returned. The survey used an intensity scale to assess:

- The extent to which the computers at the sites were being utilized;
- Interest in continuing to use the computers at the sites;
- Perceived usefulness of the computer in improving communication with OCLP faculty or other students; and
- Usefulness of various computer features (e-mail, FTP, Internet, word processing, World Wide Web, Gopher, Loyola Library catalogue).

Facilitators at each of the 10 hospital sites were also surveyed to assess student usage. Seven of the 10 site facilitators completed and returned the survey. Plans to have the site facilitators complete weekly activity reports to record computer usage were dropped.

End-of-grant-program interviews were conducted with the video instruction technical personnel and the OCLP program coordinator to evaluate how administrative and technical processes might be altered to enhance the efficacy of interactive video instruction.

Finally, the project director conducted a field observation to ensure that the interactive instructional equipment was installed and being utilized according to plan. Planned field observations to determine whether computers at the 10 hospital sites were installed and being utilized as intended did not take place.

Dissemination

The results of the project's evaluation activities were intended to be disseminated to other educators through reports and educational conferences on distance learning and on literacy. No formal dissemination has taken place with respect to the literacy component of the project; however, the LCL has encouraged staff from the various project sites to informally share their experiences during award ceremonies and other coalition-sponsored events. Findings from the off-campus nursing education portion of the project, particularly the interactive classroom activities, were disseminated more formally. A paper titled "Moving into Interactive Video Instruction: Lessons for Faculty and Administration" was presented at two conferences:

- The Annual Meeting of the Association of Jesuit Colleges and University Deans of Continuing Education at St. Louis University (November 1996).
- The Eastern Adult, Continuing Education Research Conference at Pennsylvania State University (October 1996; proceedings published on CD-ROM).

The paper discussed the results of the TIIAP-funded project to "incorporate two way audio and video into an already existing distance learning program." Approximately 30-35 people attended the presentation at the Eastern Adult, Continuing Education Conference, most of whom were state, private, and military personnel. Participants were reported to be most interested in learning how the video system works, hearing about TIIAP, and obtaining technical advice on upgrading existing network connections, such as from a T1 line to a T3.

Potential for the Project to Serve as a Model

The Association of Jesuit Colleges and University Deans of Continuing Education decided to apply for a planning grant from the NTIA PTFP program in 1998. The proposal is designed to establish a collaborative telecommunications network for 28 Jesuit colleges around the country. Loyola University's previous experience with TIIAP was an impetus for the group to apply for the grant, and the university has taken a lead role in developing the proposal.

G. LESSONS LEARNED

Goal 1. The big lesson learned in the literacy sites was that computer technology can serve important educational functions by providing literacy students with access to the computers. The computers assigned to the literacy sites were originally intended to be used for administrative purposes and not available to literacy learners. However, the value of computer experience to literacy students became quickly apparent as literacy providers discovered the wealth of software and other computer-based literacy resources that were available.

Goal 2. The lessons learned from the health education component of the project apply primarily to the off-campus BSN program at Loyola University City College. For example, it was anticipated that the computer workstations installed at hospital sites would be enthusiastically embraced by the off-campus

nursing students, but it turned out that students had little desire to stay at the hospital after work and miss time with their families and risk being called in to work an extra hospital shift.

Nevertheless, Loyola University's TIAP experience does have some implications for other institutions that are already involved in distance education and are considering the use of additional or alternative delivery systems. OCLP has long known that distance education requires significant administrative support. But the staff were surprised at the additional burden that the interactive courses created. A separate administrative system had to be set up to accommodate interactive class testing and evaluation dates. And a number of technical problems emerged during project start-up, many of which could have been avoided if there had been a longer lead time between the receipt and installation of equipment and the actual start-up of classes. In fact, administrative staff recommend allowing at least one semester for experimentation with new equipment before formally introducing classes utilizing the technology.

Aside from providing an opportunity to work out the technical glitches associated with any new technology a longer lead time would help the faculty and technical staff who would be working with the technology become more comfortable with using it. Project staff assumed that because the instructors teaching the interactive video courses had previously taught courses that were recorded on videotape, they would easily adapt to the interactive instructional environment and wouldn't require any additional training or assistance. As it turned out, having the instructors attempt to ignore the cameras and microphone and simply teach exacerbated the technological intrusion. Faculty members rely on feedback from students and other educators as to how they project themselves live and on a video monitor. Simple things like the instructor's sound level and use of chalkboard and document camera need to be monitored. Moreover, the camera operators need to have an educational sense of what is going on in the classroom. Many of the difficulties associated with the interactive technology may have been avoided by training faculty to modify instruction for the new technology. Several companies offer training to help faculty use new instructional technologies.

It was also discovered that the interactive classroom experience can be alienating for the students. Many students in the interactive courses felt "out of touch" with the on-campus class. They didn't feel comfortable asking questions during class because it was disconcerting to have everyone in the class focus their attention on a full-screen close-up of themselves. Additionally, the 2-second delay in the sound system engenders a more deliberate and forced style of communication than does normal conversation. One instructor suggested that the interactive environment puts students in a passive mode of learning because it takes extra effort to turn the microphone on and ask a question from the remote site. This instructor traveled to the external site in Baton Rouge and taught one of the class sessions from there. He found that the on-campus students reported the same feelings of passivity and the same uncomfortable lack of spontaneity.

There are many things that may have helped further alleviate some of the above-mentioned problems but were never attempted. For example, to encourage camera-shy students to actively participate in discussions, the camera need not zoom in on students who comment or ask questions. Similarly, fax machines or Internet-based chat lines could be employed to allow students to comment and ask questions spontaneously and anonymously. The interactive classroom setup also might work better if the instructor did not have any students in the on-campus classroom and could focus exclusively on the students in the remote classroom. However, these possibilities remain unexplored at Loyola University.

In the final analysis, project staff learned that it is more important to determine the needs of the students being served in a given distance learning situation and carefully tailor the innovation to meet those

needs rather than attempting to duplicate or approximate the classroom experience. They discovered that students who had previously enjoyed the flexibility of checking out pre-recorded videotapes of class sessions were unwilling to give up that flexibility for increased interaction with the course instructors. The interactive classroom setup may, however, have been more successful with a group of 20- to 24-year old students rather than working adults or with students who had never experienced video-based distance learning. But no matter who the target audience is, project staff strongly suggest moving into distance education technology with a pedagogical mindset rather than letting the romance of the technology overshadow the needs of the student population being served.

H. FUTURE PLANS

Goal 1. Loyola University has left it to the LCL to decide what they want to do with the computer equipment provided by the project. The director of the LCL hopes to expand upon the project by moving several computers to small remote areas where students who are in the most need of literacy assistance can be helped. There will be some future interaction between the LCL and Loyola University as a result of the LCL president being asked to join the Board of Trustees for the Lindy Boggs National Center for Community Literacy.

Goal 2. At the time of the site visit in February 1998, there were no plans to formally utilize the computer equipment that remains at six hospital sites or the interactive video classroom that was developed in Baton Rouge. Project staff are, however, considering the following initiatives to build on the work initiated through TIIAP:

- Faculty workshops on distance education technology will be scheduled. Both technical and pedagogical implications for the use of different types of instructional technology will be explored.
- OCLP faculty and administration will strategize on how to enhance the computer skills of all distance education students in the BSN program. Eight laptop computers have been obtained via the Louisiana Educational Quality Support Fund (LEQSF) to help BSN off-campus students learn to use nursing-oriented software in their professional practice.
- The video conferencing equipment will be tested for non-classroom uses such as Internet access training, library training, academic advising, and student services support.
- The video conferencing equipment may be tested again in a classroom setting taking advantage of the lessons learned from this project. For example, they may offer a combination video/interactive course that requires students to submit assignments via e-mail.

OCLP staff expressed great interest in continuing to experimenting with new distance learning models by developing Internet-based courses that would bring instruction into the homes of off-campus students. The OCLP Dean had taught several Internet courses and was impressed with how well he got to know his students—even better than in traditional on campus situations. In anticipation of greater reliance on the Internet for off-campus programming, the OCLP technical director is working with faculty to install web pages for each course.

An important factor in how (or whether) the technology provided through the TIIAP grant will be used in the future is identifying a source of funding for the costs associated with maintaining and operating

the networked equipment and the T3 backbone. It cost over \$1200 just for the ISDN lines and phone lines associated with a single course. OCLP staff are currently deciding whether to charge OCLP students a technology fee for the provision of computer and telecommunications services or whether to ask the University to provide funding. OCLP is also pursuing a grant from the Board of Regents to pay for a server and software to enable a computer science professor to offer six courses each semester via the Internet.