Distance Learning—Supporting Strategies

by

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Institutional Information

Florida State University, located in the State’s capital of Tallahassee, is a public, fully-accredited, coeducational, research university, one of ten state universities that compose the State University System of Florida. With enrollment of over 30,000 students from all 50 states and over 122 countries, the student body is 75% undergraduates and 25% graduates with 55% women and 45% men. The faculty total over 1,700. With 16 colleges and schools, students take courses of study leading to the baccalaureate degree in 88 fields, to master’s degree in 97 fields, and to the doctorate in 66 fields.

Abstract

From correspondence courses to two-way interactive television, colleges and universities all across America are evaluating new ways to reach out to new constituencies away from the main campus. Within 5 years, most U. S. colleges and universities will use distance-learning technologies and techniques in some of their “traditional” academic programs.

This paper begins with a brief overview of the various methods of delivering distance education. Then the emphasis of the paper is on the SUPPORT of distance education programs, starting with the resistance to change on the part of the faculty. An example of the costs associated with implementing an interactive video system is provided. There is also a section on the support needed for the students and the staff used to develop “webized” distance education courses. Throughout, there are examples of what institutions are doing to make distance learning programs work.

The audience will have an opportunity to discuss distance learning strategies with a 20-year veteran of DL who currently teaches via the web.
Distance Learning—Supporting Strategies

“Helping” Distance Learning Succeed

So much is being written about distance education and distance learning (DL) these days that you would thank that it was the “in” thing! And, perhaps it is. Yet, as a participant in distance learning “thing,” my biggest frustration or concern is in the “support.” Instructors will teach. Students will learn. But, unless both are mightily supported, it is a tough and lonely road.

This paper will emphasize the support issues and provide some thoughts about the distance learning from several institutional perspectives.

As a reference point, I started teaching via interactive TV in the late 1970s at the College Park campus of the University of Maryland and more recently at Florida State University. Although this paper takes another track, I was encouraged to write this paper for CUMREC ’98 as a follow-on to a “distance learning primer” that was recently published by CAUSE.1

The Need for Life-Long Learning

Just when you finish a rung in your educational ladder, it isn’t long before you realize that there is a need for more. The American Council on Education recently made a similar observation.

We are becoming a society in which continuous learning is central to effective participation as citizens and wage-earners. Telecommunications technologies are not only transforming our needs for education and training, but they are expanding our capacity to respond to these needs. Distance learning, with a long history of serving isolated and remote learners, is now emerging as part of mainstream education and training effort to provide learning opportunities that are flexibly responsive to learners’ needs.2

Another impetus for life-long learning was highlighted in Transforming Higher Education: A Vision for Learning in the 21st Century, when Dolence and Norris predict that the necessity for new models of distance learning will expand dramatically in the next century.3 They estimate that the amount of learning required by every information-age worker by the year 2000 will be the equivalent to that currently associated with 30 credit hours of instruction every 7 years. I would translate that to another master’s degree every decade!

This level of new learners would put 1/7th of the workforce in “class” each year. Or, it could add 20 to 28 million more full-time equivalent (FTE) students to our already capacity-strained campuses all across America. Got the picture?

So, let me close out this introduction by saying that we could spend another lifetime conducting research about the viability of distance education and comparing the effectiveness of one delivery system or technology over another. The list of such research has probably “tenured” dozens of professors. The conclusions are usually the same.

The question to be asked is not whether to use the technology, but rather how best to use the technology.4

The Gartner Group is predicting that “by 2002, more than 80 percent of traditional U. S. colleges and universities will use distance-learning technologies and techniques in one or more ‘traditional’ academic programs.”5

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To reinforce this sentiment, The Chronicle of Higher Education recently published an article that said that of the big academic institutions, 80 percent already have distance learning initiatives. Small colleges tend to be lagging behind with only 53 percent of such institutions offering distance learning options.

**Like I Need a Definition!**

You learned readers probably don’t need to have distance learning defined. But, I’ll do it anyhow, because it would be an understatement to say that there are as many definitions of distance learning as there are techniques for teaching. The more formal definition follows:

*Distance education can be broadly defined as the transmission of education or instructional programming to geographically dispersed individuals or groups.*

Given this generalized definition, distance learning has been in existence since the late 19th Century in the form of correspondence courses. However, we should fast-forward a century or so to a definition that acknowledges the role of technology in distance education. For this, consider a definition from Barry Willis’ 1993 book, as a good reference point.

*At its most basic level, distance education takes place when a teacher and student(s) are separated by physical distance, and technology, that is, voice, video, data, and print, is used to bridge the instructional gap.*

Willis goes on to point out that even it is technology that is opening so many new doors in this field, the technology of distance education should remain relatively transparent, allowing the instructor and students to concentrate on the process of teaching and learning. Otherwise, we get into a situation there the tail (insert “technology”) is wagging the dog (insert “effective education”).

**A Good Starting Point**

Before your campus can get a distance learning project off the ground, you will hear those wise old administrators (another class of curmudgeons) saying: Is it as good as traditional methods? What are its costs? What kinds of students benefit? Do instructors have to teach differently?

Yet, we ought to cut them off at the pass and quote them:

*...no matter how it is produced, how it is delivered, whether or not it is interactive, low-tech or high-tech, students learn equally well with each technology and learn as well as their on-campus, face-to-face counterparts, even though students would rather be on campus with the instructor, if that were a real choice.*

So, now that we know that it is OK to do this distance ed stuff, let’s get started. As we began, my theme is “support,”... and away we go!

**Let’s Talk “Support”**

Most distance learners require support and guidance to make the most of their learning experience. Three services have been found to contribute to successful distance programs—(1) timely student feedback; (2) on-site support; and (3) access to library materials. And, the key player or keystone for the DL program appears to be the on-

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8 T. Russell, “Television’s Indelible Impact on Distance Education: What we should have learned from comparative research,” Research in Distance Education, 1992, vol. 3(4), pp. 2-4.
Library resources are very important to distance students and a majority of them indicate that success in the course requires access to library materials.

Remote learning resources is a new term is gaining some acceptance in this field. It has been used to include the traditional distance learning components and systems, such as audio and video, plus the notion of text and file transfer from a remote computer. Over the past decade, important computer networking initiatives and an improvement in the quality of the public telephone system have paved the way for an explosion in databases of information that can be used in the classroom.

Getting “Support,” When It’s Normal to Resist Change

As part of the support issue, those who are championing this adventure into distant education will encounter a resistance to change.

Yet, changes will accelerate, and educators will make some unproductive decisions about technology. Such is to be expected in developing a robust system; if philosophical and technological shifts in education are to survive, the system will have to be tolerant of stumbles. Further, educators cannot wait for developments in technology to stabilize; the wait will be long, indeed. And, improvements in instructional strategies will probably continue to lag behind technological advancements.

It is just as important for the students to be tolerant of our stumbles. Just this semester, after using an electronic (email) merge software package to notify students of their grades at the one-third point of the course, the system produced massive, incorrect grades for the students. It is one of those systems that cranks out the messages “automatically” and you are unaware of the results until the students start giving you feedback. Well, 90 percent of the DL students are tolerant and forgiving. But, the email generated by the minority is enough to give you heartburn. Students expect DL systems to be PERFECT in an age when we are all pioneers.

Although it is true that distance education provides many institutional opportunities, its inherent fluidity tends to create numerous challenges in the process. Nowhere are the challenges more pivotal than in the area of the faculty and their support. Faculty members and administrators must work together in identifying and resolving the issues, policies, and biases that inhibit systematic use of distance education in meeting academic goals. Yet there can be no doubt that the ultimate success or failure of the distance education enterprise is inextricably tied to the enthusiasm and continuing support of the faculty. This support must begin with faculty training, as it is critical to the success of any distance education program. In fact, designing, creating, and implementing effective in-service training of the faculty is the most efficient pathway to the long-term success of distance education.

At Florida State, the President has taken a top-down approach to promoting DL. An agreement was signed with the British Open University to work together in the development and exchange of programs. This initiative has led to considerable interaction with international professionals and a sharing of experiences between the faculties and staffs. Consequently, there are numerous opportunities to attend presentations about DL techniques and methods. However, the most effective interchange occurs between the faculty members and staff at the school or department actually doing the DL programs. We learn more from each other in a 5-minutes hallway chat than a day of training by the University.

Regardless of the noble motivation, change is something we humans resist. Thus, going into a program of teaching at a distance will evoke reactions from the participants in ways that are hard to rationalize. Which is the point: many reactions or responses are not rational. But, we should be prepared for them and ready to work through them. Lack of know-how, loss of control, and loss of privacy are grounds for educators’ reluctance to embrace distant learning programs.

The challenges faced by the distant education instructor are imposing. Willis offers a few guidelines to help face these “opportunities:”

1. Look at the course in a new way.
2. Shift from the role of content provider to content facilitator.
3. Gain comfort and proficiency in using technology as the primary teacher-student link.
4. Learn to teach effectively without the visual control provided by direct eye contact.

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10 Willis, Distance Education: Strategies and Tools, p. 277.
11 Ibid., p. 278.
5. **Develop an understanding and appreciation for the distant students’ lifestyle.**

Let me offer a personal example of how a “normal” course goes from a mid-term, final exam, term paper, and 45 hours of lectures to a distance format. In two courses I designed, 12 short cases were developed to replace some of the “instruction.” First, the entire syllabus goes onto the School’s web site (http://www.fsu.edu/~lis). In living color, the students now deal with a series of menus that allow them to navigate from learning objectives, to assignments, to readings, to discussion groups, and so forth. The various DL sites divided the students, voluntarily, into 4 to 5 person teams and solved the cases collectively. They both find the cases on the site and send their case “solutions” with a click of a button at the bottom of the form. On-line, students take self-assessment type of mini-exams that we call quizlets, one for each of the 14 units in the course. Students also arrange for field trips and report their findings as teams. The course closes with a short philosophy statement on what has changed about their knowledge of the course subject and a short, electronic exam.

**Distance Learning Options**

At this juncture, we need to consider our options in distance learning methodologies.

The lists of distance learning methods, technologies, and delivery systems, or however one might wish to classify them, are many and come in various levels of comprehensiveness. For the purpose of this paper, only a half-a-dozen major options, with some subsets, are offered.

However, using this list, it will be easy for you to see how some of the examples that will be discussed fit into the “big picture” of DL options. Although is probably patently obvious, the technology is moving at such a pace as to make it impossible to say that this is anything more than a snapshot of today’s options.

- “Remote” the Faculty
- Correspondence
- Audio Conference
- Electronic White Boards
- Computer-Networked Interaction
  - Internet Linkages
  - Bulletin Board Systems
  - Webized Courses
- Video-Based Education
  - Videotape (videotaped lectures)
  - Broadcast Video
    - Local Origination Channel TV
    - Private (University) Broadcast
  - One-Way Video/Two-Way Audio
  - Interactive Videoconferencing*

*Interactive videoconferencing is used here to cover to types of systems—2-way, interactive candid classroom systems and 2-way, interactive videoconferencing. In the first instance, the classroom can be in the “studio” quality or a economically-adapted classroom for sending and receiving. Videoconferencing has grown in sophistication and application such that some are actually used as remote sites to send or receive scheduled instruction.

Now, it is time for some real-life experiences and perhaps “lessons learned” on the distance learning scene. The following are a few vignettes of how these approaches are being used down in Florida.

- **“Remote” the Faculty**

  One of the simplest ways to teach in remote locations is to move the faculty to the distant learning site or hire adjunct faculty on location for that purpose. What is the support issue here? A good airline ticket.

  Believe it or not, this is a viable form of distance education. When all costs are included, this is far cheaper than 2-way interactive TV. It is very effective, from a student prospective. The students love having the Prof. come to them.

  On the down side, it is a real drain on the energies of the faculty member to be “on the road” a couple of days a week, not to mention how his/her absence is felt back on campus (an by the spouse, too). The distant sites do not always have the academic support services (for example, library, computer resources, labs, advisement, etc.) of the main
campus. Additionally, there are often fewer quality classrooms and even less in terms of media support than would be found at the main campus.

By the way, given this option, the students will take this as the BEST distance education they can get.

**Video-Based Education**

Some states, like Florida, have spent a considerable amount of money building an infrastructure to promote distance education. There are currently over 100 ITFS (Instructional Television Fixed Service) channels licensed to educational institutions. A satellite network, called SUNSTAR, has placed steerable C and Ku band satellite receiving dishes in 35 sites, including one at each of the 28 community colleges service areas. This network allows the use of interactive videoconferences within 55 miles of every person in the State. As a result of its availability, the community colleges in Florida enroll more than 15,000 students annually in telecourses.

The Instructional Television (ITV) Office in the Florida Department of Education has leased or purchased over 400 series of courseware comprising almost 5,000 programs for use in schools, colleges, and universities.

In 1990, Florida State University’s School of Information Studies began delivering its master’s degree program to students in western Florida through an ITV site in the FSU Panama City Campus. Purchased in 1988, this Compression Labs, Inc. (CLI) system is connected to the main campus with a T-1 commercial circuit shared with a statewide engineering education system (Florida Engineering Education Distance-learning System or FEEDS). Which translates to a 1/4\(\text{th}\) T1 for the signal in one direction. Obviously, this gives some shadowing during rapid movements, it has proven not to be a distraction to learning. Unfortunately, this CLI system pre-dates the time when the major video manufacturers started to include in their CODEC (COmpression/DECompression) a standard interface algorithm. Today, the major video players offer their proprietary algorithms AND one that complies with the CCITT H.261 standard. As a consequence, when institutions try to interface today’s technology with that of yesteryears, the CODEC interface problem will usually rear its ugly head.

By 1996, FSU was ready for prime time. To fulfill its statewide mission in various fields, the President and Provost selected the School of Information Studies’ master’ degree program as the pilot program to initiate distance learning from one end of the State to the other. So, here is how it worked out.

Three of the sites, Orlando, Fort Lauderdale, and Miami, used already constructed 2-way Interactive TV studio/classrooms. These were great additions to the infrastructure and worked very well. Without hitting too hard on the obvious, a classroom with several cameras, a good sound system, sound dampening, STAFF, and high-speed connections to the switched network can make your life like a “box of chocolates.” By the way, both CLI and PictureTel video systems were in use. Because the PictureTel units were more recent purchases, they seemed to be preferred by the technicians. However, in terms of delivery, neither the faculty nor students perceived a significant difference in the end product.

To provide videoconferencing throughout the State, the Division of Communications in the Department of Management Services (DMS), acquired PictureTel rollabout systems for most of the major cities. These are self-contained videoconferencing units on a cart—monitor(s), camera, CODEC, and remote control system. The following data demonstrates the approximate costs of such a system:

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Price</th>
<th>Quantity</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rollabouts, Dual, 35” @</td>
<td>$30,000</td>
<td>2</td>
<td>$60,000</td>
</tr>
<tr>
<td>Codec units @</td>
<td>$20,000</td>
<td>2</td>
<td>40,000</td>
</tr>
<tr>
<td>Applications/features/options</td>
<td>(estimated)</td>
<td></td>
<td>20,000</td>
</tr>
<tr>
<td>Installation of T-1 circuits @</td>
<td>$1,000</td>
<td>2</td>
<td>2,000</td>
</tr>
<tr>
<td><strong>Sub-total of One-time Costs</strong></td>
<td></td>
<td></td>
<td><strong>$122,000</strong></td>
</tr>
</tbody>
</table>

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12 Announced in 1990, the International Telecommunications Union-Telecommunications (ITU-T)’s H.261 is the watershed in videoconferencing which specifies the video coding algorithms, picture format, and error correcting techniques and makes it possible for video codecs from different manufacturers to successfully communicate.
On-going Operational Costs

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
<th>Duration</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>T-1 Local loops per month @ $500</td>
<td>$500</td>
<td>6 months</td>
<td>3,000</td>
</tr>
<tr>
<td>State (long-distance) service</td>
<td>$72/month</td>
<td></td>
<td>6,000</td>
</tr>
<tr>
<td>Maintenance contract</td>
<td>(estimated 1/2 year)</td>
<td></td>
<td>2,000</td>
</tr>
<tr>
<td><strong>Sub-total of Operational Costs</strong></td>
<td></td>
<td>(6 months)</td>
<td><strong>$11,000</strong></td>
</tr>
</tbody>
</table>

**Total Project Cost for a Six-month Period** $133,000

Since the early 1990s, the State of Georgia has used millions of dollars in lottery money to pump technology into education—K through 20. Under a state contract, it purchased hundreds of CLI Radiance “classroom” rollabout systems for about $50,000 each.

Up to the middle of this decade, the more standard approach, for on-going distance education programs, is the establishment of “candid” classroom operations. In the FSU example, we converted a 30-student classroom into one end of a 2-way interactive video for $265,000 back in 1987. Just a few years ago, we were pricing out the establishment of another such studio/facility and the numbers are not coming down much.

At Florida State, we took that more standard approach from the mid-1980s to the mid-1990s, few of us predicted the impact the World Wide Web or Web would have on our lives. This model served us well over the past several years as a link to the University’s branch campus in Panama City, FL. In the Fall of ’96, the School of Information Studies expanded its outreach with a new pilot program to offer a master’s degree to a cohort of 100 DL students in 5 cities in Florida. The receiving sites were campuses of other state universities, community colleges, and state video conferencing facilities. In terms of effectiveness, the students would rank them in about that order, also. Unfortunately, although a superior method of presenting distance instruction, the logistics of “contracting” for sites for the classes and the cost of T-1 circuits made this a short-lived approach. The Administration turned off the funding for interactive television and directed the School to put its DL courses on the Web.

◆ Webized Courses

Buried in the outline of DL techniques above, under Computer-Networked Interaction is FSU’s latest DL adventure we called Webized courses or site-independent electronic course delivery. In the Spring of 1998, the School began offering several courses to its DL students in a “site independent” mode or entirely on the web. Again, check out the current offerings by going to the School’s web site. We allowed the second cohort of DL students to take courses via 2-way, interactive ITV or over the web. Effective with the new cohort of 100 or so master’s students, the Fall 1998 class will have all of its courses offered on the web.

Without going into exhaustive details, the new students will need to have access to a fairly modern computing systems with a minimum of 133 MHz speed, running Win95, or NT or OS7.5, with 32 MB of RAM, a 28.8 bps modem, CD-ROM player, sound board, Office 97, PPP connection software, Netscape 4.0, icht client, RealPlayer 5.0, Adobe Acrobat Reader 3.0, and an Internet service provider (ISP) other than AOL, Prodigy and Compuserve. We experienced so much difficulty with these providers that we offer support to our students via an 800 number directly to the University and thence to our School’s server. Alternatively, the University offered special pricing for students to use IBM Global Net at a rate that beats the local competition ($15.95 per month with unlimited access and up to 5 addresses). As an aside, these specifications evolved over the past year as a result of dealing with their obvious alternatives and realizing that we needed to standardize on certain software or go crazy with the multiple system support issues. Few of us have the staff to be so flexible!

The Lessons Learned

To conclude this paper, we will get into the fun part by reporting on what worked and did not work in a year of teaching using compressed video. These are grouped for ease of reference but not rank in order of importance.

From the Student Perspective—

--Who wins? In many 2-way interactive TV situations, there is a residential classroom made up of the local students and a set of one or more DL sites. So, if you ask is this type of instruction “good” for both the local student and the DL student, the distant student is definitely the winner. The local student or one in the “candid” classroom feels short-changed by not having enough opportunity to discuss things thoroughly in class. Now, the local students have to share their professor with those remote site students. DL programs attract large numbers of students. Thus,
instead of the normal 30 graduate-student sized classes, the DL classes often exceed 100. This means that the faculty and other resources are pulled in 100 directions. The residential students will quickly point out to you that they made the sacrifice of moving to campus and paid the cost of being residential, yet now the DL students get the “same” education and don’t have to leave home or quit their job.

--Wasting Precious Minutes. I should explain that the remote sites typically use a voice-actuated microphone (mic) system and even whispering to a fellow student could cause an activation of the mics at a site. So, the remotes are told to keep their systems “muted.” There is a tendency for the instructor to periodically ask each remote site whether or not they have questions. Residential students find this a total waste of their time and a dumb practice. They reason that if students have questions, they will ask them. I rather agree with that approach. As an aside, one way I get around this is to designate one site each week the “hot site.” The mic stays on there and we interact, just like they are THE classroom. The gives such classes a certain special feeling and avoids the “does anyone have a question?”

--Can’t Hear Ya! There is an old saying in the TV industry that the viewer will forgive a poor picture but if the sound goes on the fritz, NO FORGIVENESS. There were times when the circuits were not working, for reasons only known to the Martians. We would substitute a speaker phone at the remote site and limp along. But, if we were operating and the sound went out on the compressed video, we could not get the sound going fast enough for those students. So, remember to fine tune the system, especially the audio side and have a back-up system, even if it is POTS (Plain Old Telephone Service).

To reach the five sites, a bridge was leased from the local exchange carrier (telco). And, as you might expect with something that is new and not used every day, it suffered failures. Every week, the techies would spend the hour before class started cranking up the system and sorting out the video and audio signals. More than half the time, problems were experienced. In only one of fifteen nights was one site “unconnectable.” Like those no-see-em bugs that bit you on the beach, one never knows why the site failed to come up but the next time, all goes well. If you were paying hundred of dollars for a course, drive to the site in rush-hour traffic, and find the site a blank screen, what would be your mood?

--“Show Me the Money!” Does it cost more to provide a course at a distant location? You bet! The question is who pays? Again, this varies from state to state. Many states cover the communications and infrastructure costs of DL as part of their investment in the future. Said another way, the legislators have decided it is important enough to their citizens to give all student the same access to higher education. Others, like my Sunshine State, make the student pay for the added cost to provide off-campus education. Like it or not, it is currently running about $200 per course in our program.

--What the students say. The feedback from students in the program is solicited each semester, the unsolicited stuff comes daily! That’s right--daily. If you have a bug in your systems or make a mistake on sending out grades, trust the distant student to let you know immediately—via email. As an aside, 100 DL students generate an average of about a dozen email messages to the old professor each day. Usually, these are inconsequential remarks that they might have otherwise shared before or after a class, often the questions are administrative in nature, such as when the next assignment is due. Only occasionally with there be an intellectual question about the course content.

This past semester, the students reported the following. They responded positively to a well-organized “syllabus” on the web or that the web site is user-friendly and easy to search. Well over half of the students made an unsolicited comment that they enjoyed the group/team work and solving the cases as a team effort. DL students are typically working people who have little time for foolishness. So, they want the test questions to be straight forward and not tricky. Thus, professors had better be sure that exact answer is found in the text or class notes. They also seem to be less tolerant of ill-chosen textbooks. Again, it might be that time is more critical to them, but they want straight-forward, clear and relevant text materials. Finally, these students want feedback, almost weekly. We use Microsoft Exchange to email individual messages of the student’s grades from an Excel spreadsheet. Additionally, our web developers have built-in an immediate mail-back capability so that each student gets an email message back from the School’s server that confirms receipt of the assignment and a copy of what they sent in to the School. Both of these features have become standards to be used in all courses. Once you start a feedback mechanism, the students expect it to become the norm.

From the Faculty Perspective—

--It’s a Lot of Work! What worked in a classroom with 30 students won’t do for a DL situation. A total redesign is needed to adapt instruction for this new mode. Many faculty will resist this and regard it as just a lot of work, for little return. Through our Instructional System program of the FSU College of Education, the administration paid for the use of doctoral students in “instructional design” to assist the faculty in this redesign effort. By the way, the first-
time presentation of a DL course is seldom what you want. So, it takes a second or third time offering before a faculty member becomes comfortable with the format and new design, as adjustments are made along the way.

This added workload, even with added resources, is probably the toughest issues in DL, because the “load” is ultimately on the person on the firing line, the faculty member. Usually, there is no recognition for the extra effort needed to teach in this format, meaning it doesn’t contribute to promotion and tenure decisions. Further, spending time in developing DL courses could even be so demanding on junior faculty members as to detract from their ability to be competitive.

If the faculty are to embrace distance education, the administration must consistently address traditional faculty issues with fresh ideas and innovative approaches. For a balanced review of these issues, Willis identified a number of critical faculty development issues in his 1993 book.\(^\text{13}\)

One of the strategies we are developing is the presentation of our normal lectures as a “voice over Microsoft PowerPoint” presentation. We are recording these using RealPlayer by Real Networks (www.real.com). This allows us to insert short video clips of the instructor, field trips, or subject matter. Until we see how students tolerate this approach, we are starting with 30 minute recordings, which the student can download and play anytime. Then, at a prescribed day and time, the class goes on-line and we discuss class issues using icht which can be seen at www.icht.com. These interactive sessions are typically running an hour each week.

--Pressing the Flesh. Some administrators are viewing the Web as the answer to DL programs. Why, its cheap, worldwide, and scaleable. But, is it any different than the 21st Century’s version of a correspondence course? In my view, the more personal contact, the better the learning. Since faculty can not be omen-present, we should at least make the effort to visit the remote sites as often as possible. Making one visit a semester seemed to be the most appreciated item found on the student’s critique sheet.

--Live or Die by the Web Site. To keep up with the Joneses, the Web site is as critical as a firm handshake, smiling face, and friendly greeting. We spent the equivalent of 3 FTE staff on the first Web site and doubled that effort for the second semester. It will make or break you, these days.

The students don’t measure your site by bells & whistles but on its organization. To provide a visual example, check out: http://www.fsu.edu/~lis. Or, if you want to look at one of the DL courses, you can go directly to it with this address—http://www.fsu.edu/~lis/5480/index.html. Now, let me suggest a few of do-or-die elements for a web site.

Here are a few items that our DL students liked about our site. In the “syllabus,” students want the weekly assignments all described, clearly in one place. They liked the hot button links to everything. All readings/assignments that were not on the site were linked to the appropriate “commercial” site. Using links for cases, quizzes, exams, meant that all they had to do to “turn in their homework” was to hit that button and it went automatically to the course “bucket.” To avoid those “did you get my assignment” questions, we built in an automatic reply to the student that messaged them and acknowledgment. No paper moved between the sites and the main campus.

--“One if by land”—Some states, like South Carolina, have a transponder dedicated to public education. Going satellite, without the need to recover the cost of communication on the back of each course/student, makes a great deal of sense. That’s what I call infrastructure.

In our case, the best we could do is arrange for “buy” Switched 56 service through our State Division of Communications’ network called Suncom. This was the most cost effective approach but still expensive when the cost of the local loops coming without the benefit of competitive bids. Perhaps the Telecommunications Act of 1996 will fix that, but when? By the way, driving compressed video through the public switched network is still an unnatural act. Different brands of equipment, a mix of carriers—both IXC and LEX--, and a cast of “in addition to your other duties” players patching this mosaic together every Monday night, should have told us we were an accident just waiting to happen.

By the way, from a survey of higher education I conducted a few years back, we were the normal to be using “commercial circuits for the delivery of DL programs.”\(^\text{14}\)

--Mix and Match. When it comes to making cookies, mixing different things together produces a tasty morsel. Try it in DL and you lose! We run across example after example, from hardware to software to “people” where

\(^\text{13}\)Willis, loc. cit., pp. 286-87.

different was not better. One example that comes to mind was the web browser. We settled on Netscape but did not insist on the latest version. Well, that just spells trouble. We ended up “sending” copies to the students to clear up the problems “diversity” as causing us.

--If One Is Good, Two Must Be Better. Build a lot of redundancy into your systems. As mentioned above, have a communications back-up. The same is true of software that runs you system. Further, when the student sends homework assignments, have them go to one address where they can be graded and another place on the site, just for back-up purposes. It doesn’t happen often, but it is so much more professional to not have to go back to the student for a “resubmit.”

--Madam Librarian! It is usually accepted that the cornerstone of higher education is the library, these thoughts remind us of the plight of the distant learner.

The availability of adequate resources, beyond the required texts, for extended student exploration and research is a key problem. In a resource-rich nation, students do have the option of using the local library. But even where libraries are relatively accessible, shortages of book copies, of available staff, and limited hours of operation convenient to distance students pose serious handicaps. The lack of adequate resources in distance education is an unresolved problem.15

To get around this problem, our program has been fairly successful in identifying all referenced materials on the web site and making links were possible. In the case of important chapters or articles, permission has been granted to put them on the web site or make them part of a course packet available in each of the remote areas.

Closing Thoughts

When I think of our experiences in distance education, I am reminded of the “build it and they will come” movie. Such is the case with DL, if we build the infrastructure, everything else will follow. By the same token, if we do not make that investment, the entire program will fizzle out.

The California State University system commission concluded that three concerns will dominate virtually all discussions of higher education in this decade—student access, academic quality, and fiscal efficiency.16 The observations hit home too:

• Teaching and learning in the information age will be less print-oriented and classroom-bound than ever before.
• It will need to be less labor-intensive and more portable and modular in formats and delivery.
• The home and the workplace may become the classrooms of tomorrow.
• Instructional and support services will be based on the convenience of the consumers rather than that of campus constituencies.
• Education that is truly learner-centered ought to be delivered directly to the individual at a time and in a place determined by the learner.
• The recent “marriage” of computing and various forms of telecommunications can be expected to increase the scope and pace of technological innovation almost beyond imagination.
• Most estimates suggest that the technical means for integrating the two dimensions of non-traditional instruction—delivery and format—are only a few years away. 17

Bob Heterick, President of Educom, reminds us of the challenges confronting higher education—the need for quality, cost, access, and productivity. Reaching out to learners rather than bringing them to campus is certain to be one of the strategies to increase productivity.18

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17Ibid., pp. 2-9.