Managing Successful Internet-based Distance Learning Programs
─From the Viewpoint of the History─

Toru Sasabe

Department of English, School of Letters,
Mukogawa Women's University, Nishinomiya 663-8558, Japan

Abstract

The purpose of this paper is to provide some insight into what it takes to create a successful Internet-based distance education program from the beginning of the system. The problem with most of the existing programs is that they lack proper administration and the technological infrastructure support. By addressing these facts early on, institutions can insure their success in the distance education race.

Introduction

Hundreds of articles about distance learning and the technology involved in it have been published. Most of them have been published in last years. There are hundreds of sources citing what distance learning is and how both the faculty and students are reacting to it. Few articles, however, are dedicated to providing details on implementing and managing successful Internet-based distance education programs. To attempt to describe every aspect involved in implementing and managing a distance education program would be a magnificent task. That description would consume hundreds of pages and, like most technology-related books, be out of date by the time it would be published. Distance education is one of the fastest growing areas in higher academic institutions today. Moreover, like the technology that drives it, distance education is evolving, as are the skills required of program managers. The terms "distance education" and "distance learning" have been applied interchangeably by many different researchers to a great variety of programs, providers, audiences, and media. Its features are the separation of teacher and learner in space and/or time（Perraton, 1998, p.76）. Distance education is not a new invention. In fact, it began when the first correspondence opened its doors in Cape Town in 1906.

Today, distance education has developed beyond the limits imposed on traditional correspondence schools by using the Internet as a delivery medium. Moreover, Virtual worlds of Second Life through the Internet have potential to compensate the situation of residing non-English speaking counties, giving students more interaction with English speaking people in the world（McKay, 2009, p.78）. Formal, acceptable, distance education began in the United States in the early 1980's in the forms of tele-courses and video courses. Institutions obtained licensing rights to air programs on Public Broadcast stations and designed courses could be offered for credit to degree-seeking, financial aid students（Dervarics, 1998, pp.3-5）. It was also during this time that local cable broadcast stations began to program for tele-courses. However, it was not until the 1990's that distance education programs became a viable institutional investment. For example: Think about how difficult it would be to organize an effective training program if both your teachers and your students were spread across the globe and moving constantly from place to place（Apicella, 1998, pp.77-78）. The solution to this problem, the combination of students and instructors in a cost-effect manner via the Internet or corporate intranet, is providing institutions with the means of increasing student enrollment despite geographic location. More importantly, effective management of distance education programs will prove to be an over-riding factor in the success of those programs.

Distance education or learning speeds the process of transferring the knowledge of expert instructors to their

students, enabling learning to take place more efficiently than ever before. Implicit in the term "distance learning" is the concept of education that can occur without the need for the instructor and student to be present in the same location at the same time.

1. Internet-based Distance Education in Higher Education

Recently distance education has grown in popularity with higher education institutions. New delivery methods such as satellite, the World Wide Web（WWW）, and intranet technologies have made distance education a growing means to increase student enrollment, an important factor for virtually every post secondary institution. By offering virtual classes and Skype classes（McKay 2011, p.21）, institutions can increase their full time head count considerably, which in turn provides them with more funding. In addition, distance education meets the current goal for producing technologically well-informed students, by giving students hands on experience with computers and networking technologies. "As we approach the millennium, the virtual classroom will become the norm, not the exception"（Sonntag, 1998, p.69）. According to Nortel Networks（1999）, distance learning has been shown to produce the following potential benefits by several industry studies:

- **Reduced learning time** - typically 30-40 percent less time is required for learning to be achieved compared to classroom instruction.
- **On-demand learning** - instruction is available when and where the learner needs it, eliminating the need to wait for, travel to, a scheduled class. In addition, distance learning increases access to learning for the disabled.
- **Increased motivation** - students frequently report that they find technology-based interactive learning more interesting and enjoyable than classroom lectures.
- **Better quality control** - since learning experiences are delivered in the same way each time, they are much more consistent and reliable than classroom instruction.
- **Increased safety** - students can learn about dangerous procedures with reduced safety concerns.
- **Greater flexibility** - fluctuations in the number of learners, or their backgrounds, can be accommodated more easily than with classroom instruction.
- **Improved accountability** - automatic collection of data on learner performance can verify that learning has been accomplished and identify learning problems.
- **Faster revision** - learning experiences are delivered via a networked system, simplifying the process of making changes and updates to the curriculum.
- **Reduced delivery** costs - once developed, technology-based interactive learning is likely to cost less when compared to traditional, labor-intensive classroom instruction.
- **Learner controlled** - each learner is able to review topics or to skip the information they already know.

2. How are Post-secondary Institutions Delivering Distance Education?

It seems that the most popular mode of delivery is rapidly becoming the World Wide Web, but traditional delivery methods such as VCR tapes, telecourses, fax, and independent study remain in favor. However, distance learning is quickly becoming 'Internet Learning' [as] the most popular form of non-traditional education delivery （Rudich, 1998, p.73）. Furthermore, as the bandwidth issue has been resolved in recent years, the Internet has also allowed for face-to-face instruction via videophone or video camera. A technology that is currently available and can cost for free. When institutions consider using an Internet-based distance education program as a part（or whole）of their ordinary curriculum having a qualified, skilled distance education manager or program coordinator is imperative. A study by the United States Department of Education stated that only 36% of colleges and universities who offer distance education courses have a separate office for distance education（Rudich, 1998,

p.15）. Higher Education institutions tend to "dip their toes in the water, before taking the plunge". Over the past four years, Internet courses have tended to emerge from the primordial soup of a faculty member's web site designed to supplement their courses, not to teach it. This approach has left many institutions without adequate support or technological resources. For public and private institutions of higher education to be successful in the distance education market, skilled and capable managers are a vital part of the success of the program.

3. Management of Internet-based Distance Education Programs

With the growth of distance education curricula the management of Internet-based distance education programs has become an increasingly important issue. Administrators are faced with technological questions, which were not high on their priority list in recent years. Those questions include such things as: how to develop and maintain the infrastructure needed to maintain the curricula; how to staff key positions, such as support and instructor coordinator; how to budget effectively for equipment and support personnel, and how to combine the talents of their Information Technology Department with that of the faculty members, and institution administrators. Implementing and managing a successful Internet-based distance education program requires the manager to be aware of the necessary equipment required to maintain and implement and Internet-based curriculum. This is a new role for educators and Information Technology professionals. It combines industry specific skills with educational design skills.

4. Managing the Infrastructure

Most colleges and universities maintain an extensive Information Technology staff as well as campus wide web sites. For most students it would seem absurd to consider attending a college without a presence on the WWW in the wake on the "Information Technology Revolution". However, just thirty years ago computers in higher education were relatively rare and so was technological expertise（Ringle, 1998, p.211）. Today computers are common place in both the classrooms and in the hands of most faculty, but technological expertise is still not a commodity. Managers face the task of not only choosing and implementing the right technology but also ensuring that the faculty has the ability to use it. When managers are deciding on which technology to choose that are faced with two decisions: to maintain the equipment on site for Internet courses or to outsource and rent the space on server. The basic networked learning system involves interactive video-conferencing that supports two way video and audio communications to multiple locations using IP, T1 connections, ISDN or an Asynchronous Transfer Mode（ATM）backbone（Rudich, 1998, p.25）. That infrastructure should also consist of web servers（main and mirror sites）, server-side software, a dependable Internet connection, accounts and e-mail for both faculty and students. While courses can be conducted without students and e-mail accounts, it has a tendency to create problems for both the instructors and the students. Furthermore, most state institutions have access to the Internet backbone provided through their governing boards. These institutions typically maintain T-1 lines to their provider, and are then routed through their provider's modem pool to a dedicated DS-3 or ATM. Distance education managers, instructors, and administrators alike are concerned about the level of interactivity involved in on-line classes. Many institutions have considered using streaming video format, as well as, streaming audio to provide interactivity to their courses. The problem lies within the fact that the majority of institutions lack the "Information Technology Infrastructure" to deliver this content（national Center for Higher Education Statistics, 1998, p.78）. Limited bandwidth means slower performance for sound, video, and graphics, causing long waits to download that an affect the learning process Internet may hold the answer for institutions with limited bandwidth, but as of recent only 100 research institutions have joined the project and fewer have been awarded the "very high speed network"（Rudich, 1998, p.55）. Moreover, Internet is not available to post-secondary institutions that do not perform

research; thus, those institutions will not see the effects of Internet for some time.

The alternative to providing on-campus housing of Internet-based courses is outsourcing the server space, personnel, and software to an outside vendor. This option is particularly attractive to institutions, which lack the necessary information infrastructure to support their projects. Local or national companies can be contracted to provide the course development software, server space, and continuous technical support. They may or may not support the multi-media aspects of the course. It is important for the program manager to have a clear understanding of costs and benefits of both programs.

5. Financing the Program

With the high cost of Information Technology, budget properly for equipment and personnel is imperative for a successful program. Internet-based distance learning programs can be extremely expensive. Equipment and training cost can rise as institutions struggle to keep up with new technological developments. Most colleges and universities have consistently reported net increases in staffing and budgets as a direct consequence of the proliferation of technology（Ringle, 1998, p.33）. As note previously, the equipment itself can be an exuberant expense to the institution. Among the factors frequently reported as keeping institutions from starting or expanding their distance education course offerings to a "major extent" were program development cost（43 percent）, limited technological infrastructure（31 percent）, and equipment failures and costs of maintaining equipment（23 percent）（National Center for Higher Education Statistics, 1998, p.84）. Following those categories is often the cost of support staff: Webmasters, System Administrators, and Training Specialist. Not to mention the incentives offered to faculty to design the courses such as off-loads and stipends. However, the costs involved in developing Internet-based distance learning are expected to circumvent the costs of building new academic buildings, dorms, and other resident student activities. For example, Carty states: The cost of building new classrooms, dorms, or even whole new campuses is unbelievably high（tens of billions of dollars, according to one source）（Carty, 1998, p.6）. Even though the cost of Internet-based distance education requires a large capital outlay at the onset of the program, those costs can be offset by the magnitude of new grants and laws currently being enacted by the federal government and the private sector. New changes in student financial aid rules may help two-year colleges expand the number and scope of distance learning programs nationwide The law also allows community college students to get financial aid for non-degree distance learning programs. Previously, students had to participate in a program leading to at least an associate's degree to gain access to aid. Among other changes, the higher education bill will factor either the purchase or lease of a computer into the cost of attendance for students in distance learning programs（Dervarics, 1998, p.5）. There are also a number of new federal government grants available for post-secondary institutions that are engaging in "ground breaking" activities（National Center for Higher Education Statistics, 1998）. This funding begins at $75 thousand per year and goes up to $5 million per year. There are also a number of grants available for faculty development concerning technology（National Center for Higher Education Statistics, 1998, p.122）.

There are four truths that every Internet-based distance education program manager should know. The four cardinal truths of financing information technology are these:（1）it is expensive,（2）it is additive to existing budgets,（3）its benefits are difficult to assess, and（4）and it is her to stay（Ringle, 1998, p.40）. Depending on the mission of the institution, these truths should be considered carefully. One of those truths however cannot be denied: Information technology is here to stay. By 2001, analysts predict the market for distance-learning … will reach $1.1 billion（Schwartz, 1998, p.84）. By 2050, the face of education will have changed completely.

6. Combining Human Resources

The most important task for a manager, concerning distance education, is their ability to combine the talents of their Information Technology professionals, faculty members, and institutions administrators. One of the greater challenges is in bringing together groups of people who normally do not work with each other. In higher education, that means integrating faculty members, and information technology staff-people who rarely collaborate in a normal university setting.（Hagendorf, 1998, pp.85-87）. In the past, the primary role of the information technology staff has been to ensure the equipment and software integrity of the institution by which they have been employed. Not until recently did that role include supporting the multitude of questions from the faculty teaching or preparing to teach courses via the Internet. Supplementing the problem is the fact that academic courseware applications are a relatively new invention, thus creating a learning curve for staff members. Having those employees trained and prepared to assist the faculty should be a priority for program managers. Faculty members are the most important resources available to the project manager. They design and teach courses/ a tremendous amount of their time is devoted to bringing the project to fruition while historically, the professor's role has …been that of an expert who lectures or 'professes'（Phillips, 1998, p.120）. With the dynamic nature of the electronic age, information changes rapidly and professors who teach Internet-based courses must double the amount of time they take in preparation for their classes, though convenient, the outline program isn't easier than traditional on-site classroom education（Jackson, 1998, p.41）.

The final link in the human resource chain is institutional administration. For the program manager this link may be the hardest to make. Institutional administrators must be convinced of the costs involved, the amount of dedication from the faculty and the necessity for the support staff. Many institution administrators are mandating the implementation of Internet-based curricula without regard to the infrastructure, training or costs involved. "Chief among these are uneducated school administrators and a resistance to paying fair market value for distance-learning technology"（Schwartz, 1998, p.87）. They realize the importance of keeping up with technology but fail to recognize the importance of proper management of the program.

Conclusion

Proper management of distance education programs is of the utmost importance. "Done correctly with the proper resources, preparation, and executive support, organizations will find that outline training will increase attendance and save costs"（Edelman, 1998, p.72）. By offering students alternatives to traditional classroom education, institutions do not have to allocate classroom or laboratory space. Managers must know how to create a working infrastructure, finance the program, and hire and keep technology professionals. They must be able to combine the skills possessed by their faculty and the information technology staff in a manner that is productive and lucrative. By adding to the institutions existing infrastructure and planning growth, the cost of distance education programs can be offset by as much as half. Distance education programs have a propensity to grow exponentially if they are done well. Many institutions begin their distance education programs by offering a limited number of courses and they use the technology they already have in place because they are unsure of how well the courses will work or how many students will enroll. By comparison, institutions that have good distance education programs plan them form the ground up. They implement the information technology infrastructure before they begin building their classes. This helps to solve the problems before they begin. Successful distance education programs also have the necessary support staff in place before beginning course development. By providing faculty with training and technical support the quality of teaching materials is improved. The thing for faculty, managers, and administrators alike to remember is this: with the increasing availability of the Internet to most potential students, Internet-based distance courses are booming（Zhang, 1998, p.398）with the advent of new

technologies such as Virtual worlds of Second Life and Skype（McKay, 2011, p.22）. Everyone related to education should wish to give convincing qualitative and quantitative evidence to prove newly developed technologies ready for inclusion in today's educational curriculum.

References

Abernathy, D.（1998）. The WWW of distance learning: Who does what and where? *Training and Development,52,* 29-32.

Apicella, M.（1998）. Technology for the classroom and the battlefield. *InfoWorld,20,* 77-78.

Carty, S.（1998）. The challenge of the educated web. *Searcher,6.* 32-39.

Dervarics, C.（1998）. Distance learning programs gain ground. *Community College Week,1. ,*3-5.

Edelman, R.（1998）. Distance learning works. *Internetweek,72.* 30.

Emmer, M.（1997）. Distance learning tests America's higher education dominance. *Connection: New England's Journal of Higher Education & Economic Development,12.* 20-23.

Hagendorf, J.（1998）. Distance learning comes to forefront as service source. *Computer Reseller News, 800.* 85-87.

Jackson, L.（1998）. Campus convenience. *Network World, 1.* 41-44.

Jason, B.（1998）. Teaching technology technique: Educators contemplate the appropriate use of technology in the post second-ary environment. *Black Issues in Higher Education, 15.* 48-50.

Lee, C.（1998）. Virtual U. *Training, 35.* 81-83.

Lewis, L., Alexander, D., and Farris, E.（1998）National Center for Higher Education Statistics. Distance Education in Higher Education Institutions: Incidence, Audiences, and Plans to Expand. *U.S. Department of Education.*

McKay, D.（2009）.Virtual language labs: A four year curriculum and implementation process. In A. M. Stoke（Ed.）, *JALT2008 Conference Proceedings. Tokyo: JALT, 47.*78-79

McKay, D.（2011）. Motivating Language Learners through Virtual Worlds: Second Life, Moodle, and SLOODLE. *JALT PAN-SIG2010 Conference Proceedings,54.*22-23

Perraton, H.（1988）. A theory for distance education. *Distance education: International perspectives.*

Phillips,V.（1998）. Online universities teach knowledge beyond the books. *HRMagazine, 4.* 120-128.

Rudich, J.（1998）. Internet learning. Medford, 15, 23-25.

Schwartz, K.（1998）. Distance learning: An education in patience. *Reseller Management,21.* 84-88.

Smith, M.（1998）. Education poised to go the distance. *National Underwriter,102.* 19-20.

Sonntag, E.（1998）. The competitive edge of satellite-based-education. *Satellite Communications, 22.* 38-40.

Uiterwijk, J.（1998）. Long distance learning. *Infoworld,20.* 72-76.

Zhang, P.（1998）. A case study on technology use in distance learning. *Journal of Research on Computing in Education,30.* 398-420.