Open and Distance Learning:
Transitioning to an E-learning Environment

Dr. Michael W. Churton
Professor: University of South Florida
Tampa, Florida USA
Fulbright Scholar 2000-UNIMAS

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Historically, open and distance learning has meant providing access to instructional content in which learners and their instructor(s) are assisted to overcome the communication barriers of location, time, and most recently pace (Churton, 2000; ). At its most basic level, distance education occurs when an instructor and student(s) are separated by physical distance. Technology, including print based technology is used to bridge this instructional divide (Churton & Rejniak, 2001). Due to the development in education and the emergence of technological diversity and instructional design, the elements of communicating in real time are now a reality. Platt (2001) suggested that distance learning has transcended various chronological landmarks and transformations in nomenclature, format, style, delivery applications, and numbers served. This rapid and diverse expansion of open and distance learning has led some to question the qualitative implications of such programs and have called for standards or benchmarks to demonstrate programmatic quality and integrity (Churton, 2001). The merger to an e-learning environment underscores the concern for applying quality standards to programs and activities.

As the global marketplace and needs of the Asian-Pacific region promote the acceleration of open and distance educational opportunities, international linkages, overseas campuses, collaborative partnerships with multiple universities and other transnational relations, instructional quality and integrity remain keys to effectiveness and sustainability. For reasons of infrastructure, cultural diversity, educational regulations, languages, and real costs, the challenges in providing a quality and comprehensive education can be quite difficult. It is the responsibility of policy makers to identify and apply appropriate curricula design, development, support, and evaluation measures to ensure that their distance learners and their distance learning instructors experience an effective transition to a distance learning environment. Distant and e-learners should have the same level of academic integrity as students who attend campus based programs (Churton, 2000c).

Asia Open Universities and those programs within the UNESCO regional service sphere need to clearly define the programmatic and financial goals by which they will consider development or expansion of distance learning opportunities, especially in the area of e-learning. Given similar needs and characteristics, the following examples provide a foundation from which to consider an appropriate delivery:
(1) The workforce is widely or remotely dispersed, making it expensive in time and money for instructors to travel to the learners;

(2) Some information and skills can be taught in a day or less making travel less cost effective for either the learner or the instructor;

(3) Instruction using distance learning strategies can be designed to allow learners at all levels to fit the instruction into their lifestyles. Learners can read print, view video, or work on computer-based instruction and still meet their other responsibilities;

(4) Instruction using distance learning strategies can be designed to allow learners to progress at their own rates; they can focus and reflect upon the information learned;

(5) When the primary purpose is to provide information, a distance learning strategy can be used to provide the same information simultaneously, and on a wide-area network; and

(6) Due to ever-increasing competition from other programs and countries, decisions to develop e-learning programs stem from an educational, equity, and the need for cultural considerations and values.

This paper addresses the transition to an e-learning model to meet unique and documented needs of programs. Principles of e-learning will be discussed as well as consideration for the pedagogical and instructional considerations for transitioning to an e-learning program. The paper is accompanied by a graphical presentation of key points during the post-conference seminar.

**The Process of Defining E-Learning**

As with any process, one must first define the parameters or the context by which the process is conceptualized. Definitions of e-learning vary- as they should- depending upon the needs and requirements of the programs that are utilizing ICT to deliver instruction. The evolution of e-learning and that of rapidly expanding technology has now presented a new dimension of learning referred to as m-learning or mobile learning. Asia, as well as Africa and other continents, have looked towards the future relative to ICT and in
Relationship of m-learning to e-learning (Keegan, 2004)

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providing basic communication services to all. Without the need to lay miles and miles of copper for telephone and voice messaging, wireless applications have replaced the infrastructure of the 20th century. While the USA and perhaps Europe are well entrenched with land based installation, continents like Asia and Africa have move rapidly and significantly into wireless communications and technology. Mobile learning is the product of this Wireless Revolution (Keegan, 2004) . To a certain degree, m-learning represents the next generation of learning. Keegan (2004) suggests that m-learning includes computers, laptop computers, PDAs (Personal Digital Assistants)/handhelds/ palmtops, smart phones and mobile phones are included.

In addition, we now have the process and product referred to as BLOGGING or web logging. A blog is an easy-to-use web site, where you can quickly post thoughts, interact with people, and more. A blog, therefore, is and has always been more than the online equivalent of a personal journal. Though consisting of regular (and often dated) updates, the blog adds to the form of the diary by incorporating the best features of hypertext: the capacity to link to new and useful resources. But a blog is also characterized by its reflection of a personal style, and this style may be reflected in either the writing or the selection of links passed along to readers. Blogs are, in their purest form, the core of what has come to be called *personal publishing*. However for the purpose of this paper and our objective for today is to focus specifically on e-learning.

E-learning most often means an approach to facilitate and enhance learning by means of personal computers, CDROMs, and the Internet. This includes email, discussion forums, and collaborative software. Advantages are seen in that just-in-time learning is possible, courses can be tailored to specific needs and asynchronous learning is possible. E-learning may also be used to support distance learning through the use of WANs (Wide area networks), and may also be considered to be (wikipeia, 2005).

However, there are a variety of definitions that are used to describe how information and communication is delivered using ICT infrastructure. It would be prudent to at least identify...
what some of these definition and lease note that some are not just from the world of education, the corporate and business sectors also design and promote distance learning. As education is becoming more of a commodity and streamed to resemble a corporate operation, perhaps we all can learn something from world of economics. It must be noted that it is not the intention of this paper to recommended a clear definition of e-learning since the process of defining e-learning is dependent upon the unique needs and characteristics of programs and on a larger scale universities and countries they represent. In short, e-learning descriptions will probably be similar in nature but defined differently across the Asia-Pacific region due to unique needs of programs. A few e-learning definitions are cited below which represent characteristics of education, industry, tourism, government, and service programs.

- Learning that is accomplished over the Internet, a computer network, via CD-ROM, interactive TV, or satellite broadcast (geocities, 2005).
- Self-paced, interactive training programs produced on CD or the Web that contain multimedia elements (ie, sound, video, animations) and automated test questions that provide instant feedback to the trainee.(Progress Information Technologies, 2005).
- The process of learning via computers over the Internet and intranets. Also referred to as Web-based training, online learning, distributed learning, or technology for learning.(Marriott, 2005)
- Any technologically mediated learning using computers whether from a distance or in face to face classroom setting (computer assisted learning, 2005)
- A process that facilitates education using a network (Internet, LAN or WAN).(Online Degree Zone, 2005)
- Self-study training material that is provided electronically (typically, over the Internet).(TechScribe, 2005)
- Covers a wide set of applications and processes such as web-based learning, computer-based learning, virtual classrooms, and digital collaboration. It includes the delivery of content via Internet, intranet/extranet, audio and videotape, satellite, and CD-ROM. However, many organizations only consider it as a network-enabled transfer of skills and knowledge.(NEIU, 2005).
- Learning that is facilitated by the use of digital tools and content. Typically, it involves some form of interactivity, which may include online interaction between

- This term has two different meanings. It can mean a comprehensive offer of courses and "on-the-job" e-business training modules for all levels of management for the purpose of accumulating internal e-knowledge and promoting e-business-related networking and the exchange of know-how. It can also mean learning via electronic media. (Siemens, 2005)

- What occurs when education and training (typically credit but also non-credit) are delivered and supported by networks such as the Internet or intranets. Learners are able to learn any time and any place. In this report, we use the terms "online learning" and "e-learning" interchangeably. (EDU SPEC, 2005).

There are a variety of definitions that have and are being used to address the parameters of e-learning. Corporate, primary/secondary, schools, universities, distance learning programs both private and public, national and international organizations all have addressed their unique and individualized perceptions of what and how e-learning can be utilized to effective change. The salient point is the question of how your program will define, design, and sustain your e-learning programs to meet the unique and individualized need of your students.

In its simplest form, E-learning is an instructional delivery system, which connects learners with educational resources. The implementation of e-learning is a process, which uses available resources and will evolve to incorporate emerging technologies. Several key features address e-learning including:

- The separation of teacher and learner during at least a majority of each instructional process;
- The use of instructional technology to unite teacher and learner and deliver course content;
- The provision of some synchronous communication between teacher, tutor, or educational agency and learner;
- Volitional control of learning by student rather than distance instructor.
Pedagogical Considerations for e-Learners

Learner control theory and research plays a significant role in the design and delivery of appropriate distance learning programs. We know that faculty teach and students learn using different instructional and learning styles. Wills (1994) suggested that as a result of participating in a distance learning program that encourages diversity; distance students can gain new knowledge and social skills including the ability to communicate effectively and to collaborate with dispersed colleagues and peers. Learner-centered instruction places students at the focal point of the teaching/learning process and encourages the understanding of and appreciation for diverse educational, professional, and personal characteristics among students (Churton, 2003). Strategies to impact learning outcomes must be viewed through an understanding of the population that is to be served. Although these characteristics can pertain to any group of students, it is evident that successful e-learners tend to be:

- Independent learners
- Self- motivated and driven to achieve
- Accountable for responsibilities
- Balancing multiple responsibilities
- Appreciative of time and distance

Churton (2004) suggested that to be successful in e-learning, students need to develop an appreciation and understanding for active learning and an ability to work independently from the instructor and/or facilitator. Student- to-student networking and student-to-teacher communications such as email, virtual discussion board, synchronous chat sessions, telephone calls, or informal meetings can assist in facilitating the learning process. In addition, consistent, non-intrusive- instructor intervention and communication with students significantly increases the completion rate of students.

Research on technology's benefits for teaching is viewed generally as positive when shifting from a traditional direct approach to a more learner-centered approach. Research (Dede, 1996) specifically shows that educator’s use of technology results in:

- Increased emphasis on individualized instruction
- More time engaged by teachers advising students
- Increased interest in teaching
- Interest in experimenting with emerging technology
- Increased administrator and teacher productivity
• Increased planning and collaboration with colleagues
• Rethinking and revision of curriculum and instructional strategies
• Greater participation in school and district restructuring efforts
• Increased teacher and administrator communication with parents
• Increased communications among teachers (OTA, 1995)

Profile of the Asia Distant Student
In a recent publication by Carr, Jegede, Tat-meng, & Kin-sun (1999), the authors attempted to describe what is meant by the Asian Distance Learner. In order to design and conduct effective distance and e-learning programs, instructors should understand the population they are serving and include the students learning needs into their design of the course. The learning environment for e-learning students and instructors is not the same as for teaching-learning process conducted in campus-based programs. The expectations of the program must be in line with the abilities and capabilities of the e-learning student. Certainly, culture plays a significant role in the success of students involved in e-learning activities. The primary role of the student is to learn. Under the best of circumstances, this challenging task requires motivation, planning, and the ability to analyze and apply the information being taught. Instruction must also meet these requirements.

The Asian e-learning students are not entirely unlike e-learning students in other parts of the world. Their reasons and needs for taking a e-learning course mirror the very same criteria that Western and European students use for enrollment in e-learning programs. Carr, Jegede, Tat-meng, & Kin-sun (1999) suggested that the Asian distance learners are older and have jobs, and families. Students have a variety of reasons for taking courses. Some students are interested in obtaining a degree to qualify for a better job. Many take courses to broaden their education and are not really interested in completing a degree.

Teaching-Learning Process
A primary requirement for supporting a e-learning program is to ensure that students and instructors understand the teaching learning process as it applies to e-learning. Teaching and learning may have never been more important or more apparent than in the current age of a knowledge-based society. Effective pedagogy may be the greatest challenge and true future of e-learning with end-users or students will be at the center. The e-learning student will be paramount in mediating his or her own learning. The nature of education delivery is changing, and new technology and other related innovations can provide promising
educational opportunities for individuals who are currently not being served, particularly for
individuals without easy access to traditional campus-based education or for whom
traditional courses are a poor match with education or training needs. The change is reflected
as to how learning or communication is designed and delivered to students and the support
systems involved in ensuring program effectiveness.

The need for high-quality, nontraditional, technology-based education opportunities and
needs are increasing as is the need for skill competency credentials and other measures of
educational progress and attainment that are valid. Asynchronous learning is communication
that occurs when the teaching/learning process is not dependent upon time or location. The
World Wide web and various software packages have allow full course to be place on the
WWW having students and instructors access the content from any location and for the most
part at any time. Asynchronous communication may be advantageous for people who like to
work at their own pace and need time to reflect and revise such literature for the better
understanding of the materials presented. Thus, the data may be filed and stored for future
use if necessary, for people to refer to on a regular basis to review the material and or
discussion to better embed the knowledge and effectiveness for learning, especially in
workplace training instances. Asynchronous communication pertains to a transmission
technique that does not require a common clock between the communicating devices. Some
examples of asynchronous communication include SMS, emails and discussion boards.

Decreasing the dependence of instruction on lecture and shifting to asynchronous
techniques could take several forms, ranging from simple and elementary to advanced and
complex; these are just a few examples:

• replacing lectures with video taped presentations, or with Internet based multimedia
  presentations, thus allowing participants to view presentations multiply, at their pace,
  and at their personally optimum times,
• replacing the administrative elements of class time (passing out papers, handling
  attendance, addressing questions personally, . . .) with Internet based document
  distribution or asynchronous bulletin board question-and-answer postings,
• replacing limited laboratory experiences with Internet based interactive multimedia
  environments capturing the elements of these learning scenarios with the added
  convenience of Internet transportability and speed and ease of data collection,
• implementing coordinated, credited and endorsed small group meetings for
discussions that can not be moderated well in large lecture formats,
implementing coordinated, credited and endorsed work sessions connected with specific skill or task outcomes, and

implementing coordinated, credited and endorsed peer-mentoring, peer-tutoring and peer-coaching strategies are just a few of the ideas about how to convert from teacher centered instruction to learner centered instruction.

Synchronous communication is a collaborative and interactive tool to connect students from different localities in a virtual communicative network where it occurs or exist at the same time ‘real time’. Some examples of synchronous communication include audio conferencing, video conferencing and web conferencing. The benefits of Synchronous communication is that it allows students to work across time zones and to conduct meetings without staff having to be office bound after hours and across different disparate localities. Synchronous distance learning is interactive communication, which allows the teaching-learning process to occur in real time regardless of distance or location (Churton, 2000b). Synchronous distance learning programs require site base locations for students to meet in tutorials or instruction. Due to the synchronous nature of telecommunication formats, students can participate in real time interactions, receive immediate feedback, and participate in group interaction which provides motivation in learning.

Traditionally, classroom teachers rely on visual and unobtrusive cues from their students to enhance their delivery of instructional content. The attentive teacher consciously and subconsciously receives and analyzes these visual cues and adjusts the course delivery to meet the needs of the class during a particular lesson. In contrast, the e-learning teacher has few, if any, visual cues. Those cues that do exist are filtered through technological devices such through type text or images on video monitors.

To function effectively, students must quickly become comfortable with the nature of e-learning teaching and learning. Efforts should be made to adapt the delivery system and pedagogy to best motivate and meet the needs of the students, in terms of both content and preferred learning styles. Consider the following strategies for meeting students' needs:

- Assist students in becoming both familiar and comfortable with the e-learning environment and prepare them to resolve the technical problems that will arise. Focus on joint problem solving, not placing blame for the occasional technical difficulty.
- Make students aware of and comfortable with new patterns of communication to be used in the course.
• Learn about students' backgrounds and experiences. Discussing the instructor's background and interests is equally important.

• Be sensitive to different communication styles and varied cultural backgrounds. Remember, for example, that students may have different language skills, and that humor is culturally specific and won't be perceived the same way by all.

• Remember that students must take an active role in the e-learning delivered course by independently taking responsibility for their learning.

Curriculum Adaptation

In developing or adapting e-learning instruction, content should remain basically unchanged, although its presentation may require new strategies and additional preparation time. Suggestions for planning and organizing e-learning delivered courses include:

• Begin the course planning process by studying e-learning education research findings addressing student outcomes consistent with your instructional objectives.

• Understand the limitations and advantages of the various e-learning formats available. Select the format that best meets the instructional needs of students academically and technologically.

• Establish protocols for class administration, either site or online based, to maintain class integrity and for technological backups.

• If course materials are electronically sent or placed on the server, be sure hard copies are available that can be posted for students having difficulty viewing or downloading the information. This could be placed in the library as well

Instructors and Course Designers:

• Realistically assess the amount of content that can be effectively delivered in the course. Because of the logistics involved, presenting content through e-learning is usually more time consuming than presenting the same content in a traditional classroom.

• Be aware that student participants will have different learning styles. Some will learn easily in group settings, while others will excel when working independently.

• Diversify and pace course activities and avoid long lessons. Intersperse content presentations with discussions and student-centered exercises.
• Humanize the course by focusing on the students, not the delivery system.
• Use locally relevant case studies and examples as often as possible to assist students in understanding and applying course content. Typically, the earlier in the course this is done the better.
• Be concise. Use short, cohesive statements and ask direct questions, realizing that technical linkages might increase the time it takes for students to respond.
• Develop strategies for student reinforcement, review, repetition, and redemption.
• Participants will quickly grow comfortable with the process of e-learning education and the natural rhythm of effective teaching will return.

Improving Interaction and Feedback

Since e-learning separate teachers and students, the pedagogical implications of interaction and academic feedback are important for effective class results. A constructivist approach to design can assist in providing the vehicle for feedback and interaction by encouraging learners to take more responsibility for their learning (Hiltz, Wellman, 1997). To improve interaction and feedback, consider the following:

• Use pre-class study questions and advance organizers to encourage critical thinking and informed participation on the part of all learners. Realize that it will take time to improve poor communication patterns.
• Early in the course, require students to contact you and interact among themselves via electronic mail, telephone, or post so they become comfortable with the process.
• Arrange virtual office hours using a toll-free number. Set evening office hours if most of your students work during the day.
• Integrate a variety of delivery systems for interaction and feedback, including one-on-one and conference calls, fax, E-mail, video, and computer conferencing. Contact each site (or student) every week if possible, especially early in the course. Take note of students who don't participate during the first session, and contact them individually.
• Have students keep a journal of their thoughts and ideas regarding the course content, as well as their individual progress and other concerns. Have students submit journal entries frequently.
Identify individual students to ensure that all participants have ample opportunity to interact. At the same time, politely but firmly discourage individual students or sites from monopolizing class time.

**Didactic Approach:** A didactic approach places the responsibility for the course directly with the instructor. The faculty member organizes students by using emails and assigning each student to a smaller working group. Groups are then assigned specific responsibilities, assignments, and presentations or work sessions. Considerations should be given to inter-collaborative associations within groups providing alternative group assignments or pairings if necessary. The advantage of the pre-course arrangements establishes a structure prior to the start of class thus saving time and providing an initial management system.

**Constructivist Approach:** Students with some "guidance" can design their own communication network based on common interests or assignments. The constructivist approach provides students the opportunity to contribute to their own academic development by building relationships across common interests and educational goals (Hiltz, 1997). Faculty should be cognizant however; that sufficient time is required for this communication network to develop once the class has started. Faculty members should also be part of the network and have entry capabilities to the network to participate in a facilitative or resource roll.

E-learning programs organize learning activities around demonstrable learning outcomes, assist the learner to achieve these outcomes, and assess learner progress by reference to these outcomes.

1. Intended e-learning outcomes are described in observable, measurable, and achievable terms.
2. The e-learning design is consistent with and shaped to achieve the intended e-learning outcomes.
3. Instructional technology and delivery systems are used in a way that facilitates the achievement of intended e-learning outcomes.
4. E-learning outcomes are assessed in a way relevant to the content, the learner’s situation, and the distance education delivery system.
5. Assessment of e-learning is timely, appropriate, and responsive to the needs of the learner.

6. When possible, individual learners help shape the e-learning outcomes and how they are achieved.

A variety of teaching and learning styles are associated with the delivery of postsecondary education. Consideration should be made relative to the content of the materials, learning needs of the students, instructor’s teaching style, and the limitations of the technology if used.

**Teacher Centered, Learner Centered and Autonomous Learning**: A central theme to many university programs suggests that learners should assume more responsibility for their own learning. Especially with nontraditional students, learning styles suggest more input as to when, what, how and where learning is to occur (Churton, 2004). Some students, however, are less confident in self-directed learning and may be limited in their independent learning skills. For these students, a more direct instructional approach addressing independent learning skills would seem appropriate. The more experienced learners may perform better in learner-centered programs.

**Active and Interactive Learning**: Effective instructional practices suggest that learners should take an active part in their learning rather than passively receiving information (Wills, 1994). This may take the form of participation in proactive experiments, simulations, role-playing, small group interactions, group problem solving or a host of other activities. When the learner is learning in isolation or non-group settings, resources and assignments should be structured so as to demand interactivity from the learner with other students and the instructor. Technology can be of assistance in addressing the inter-connectivity among students.

**Preferred Sensory Channels**: Learners, as well as their instructors, have preferences for e-learning such as viewing, listening, or completing an activity. In a e-learning environment, providing a combination of demonstration, description, and presentation assists in addressing different learning styles. From an instructional point of view, it is desirable to provide a range of learning methodologies to address diverse abilities.

**Place Dependent-Independent Learning**: Place independent e-learning occurs when the learner can use learning materials or technology wherever he or she may be rather than having to attend a particular place. Classroom teaching is place dependent. Some forms of e-learning may be place dependent such as a particular site or location where the technology is
located but provides convenience for students to attend. Other formats such as on-line www courses are place or site independent.

**Time Dependent-Independent Learning:** Similarly, time independent means that learners can choose the time when they learn. Time dependence means that time is predetermined or fixed. Any method where instant interaction with other people is required will be time dependent. For example, classroom groups, videoconferencing, audio conferencing and synchronous aspects of on-line instruction all require students and or instructor to be at the same place at the same time. Many facets of the Internet and methods such as tutorials are also time dependent. Although students are successful during the e-e-learning experience, there does seem to exist an attitude among distant students that they are truly not part of the on-campus class. Students can view themselves as disadvantaged because of their proximity to the instructor and lacking the resources available to other students (Odin, 1997). As instructors, we can help to eliminate these attitudinal differences by using strategies to assist students in overcoming these barriers and ensuring that resources are available to all students including:

**Student outcomes:** The effectiveness of technology tends to vary as a function of the curriculum content and instructional strategy delivered by the technology. When content and strategies are determined to meet accepted education standards, research documents that technology can be a benefit.

- Increases performance when interactivity is prominent
- Increases opportunities for interactivity with instructional programs
- Is more effective with multiple technologies (video, computer, telecommunications etc.)
- Improves attitude and confidence especially for 'at risk' students
- Provides instructional opportunities otherwise not available
- Can increase opportunities for student-constructed learning
- Increases student collaboration on projects
- Increases mastery of vocational and work force skills
- Significantly improves student problem solving skills
- Improves writing skills and attitudes about writing for urban LEP students
- Improves writing skills as a result of using telecommunications
- Increases the preparation of students for most careers and vocations
E-learning activities are designed to fit the specific context for learning the nature of the subject matter, intended learning outcomes, needs and goals of the learner, the learner’s environment, and the instructional technologies and methods.

1. E-learning opportunities include a clear statement of intended learning outcomes, learning content that is appropriate to these outcomes, clear expectations of learner activities, flexible opportunities for interaction, and assessment methods appropriate to the activities and technologies.

2. Elements of a e-learning event—the learning content, instructional methods, technologies, and context—complement each other.

3. The selection and application of technologies for a specific learning opportunity are appropriate for the intended learning outcomes, subject matter content, relevant characteristics and circumstances of the learner, and cost range.

4. E-learning activities and modes of assessment are responsive to the learning needs of individual learners.

5. The e-learning experience is organized to increase learner control over the time, place, and pace of instruction.

6. E-learning outcomes address both content mastery and increased e-learning skills.

7. Individuals with specialized skills in content, instructional methods, or technology work collaboratively as a design team to create e-learning opportunities.

8. The e-learning design is regularly evaluated for effectiveness, with findings used as a basis for improvement (Dede, 1996).

**Direct Support Services**

Successful e-learning opportunities have clear lines of support and accountability. Regardless of the service delivery option, students and faculty require effective support strategies to ensure successful programmatic outcomes. WICHE (2000) & Dede (1996) offer the following recommendations in providing support for e-learning programs.

1. The program has a learner support system to assist the learner in effectively using the resources provided. This system includes technology and technical support, site
facilitation, library and information services, advising, counseling, and problem-solving assistance.

2. The program considers the needs for learner support in relation to the e-learning mode(s) used and makes provision for delivery of appropriate resources based on the design of the learning activities, the technology involved, and the needs of the learner.

3. Access to support services—such as scheduling, registration, and recordkeeping—is convenient, efficient, and responsive to diverse learners as well as consistent with other elements of the delivery system.

4. Support systems are accessible to and usable by the learners and are sufficiently flexible to accommodate different learning styles.

5. The program discloses to the learner all information pertinent to the learning opportunity—such as course prerequisites, modes of study, evaluation criteria, and technical needs—and provides some form of orientation for those desiring it.

6. Support systems for each learning opportunity are reviewed regularly to ensure their currency and effectiveness.

The program has a plan and infrastructure for using correspondence courses and technology that supports its e-learning goals and activities.

1. The plan defines the technical requirements and compatibility needed to support the e-learning activity.

2. The plan addresses system security to ensure the integrity and validity of information shared in the e-learning activities.

3. The e-learning format facilitates interactivity among all elements of a learning environment and places a high value on ease of use by learners.

4. The technology, including print, selected for e-learning is fully accessible and understandable to learners and has the power necessary to support its intended use.

5. Programs communicate the purpose of the technologies used for e-learning and, through training, assist learners, faculty, and staff to understand its etiquette, acquire the knowledge and skills to manipulate and interact with it, and understand the objectives and outcomes that the technologies are intended to support.
6. The technology infrastructure meets the needs of both learners and e-learning facilitators for presenting information, interacting within the e-learning community, and gaining access to e-learning resources.

**Comprehensive Support Systems**

Effective e-e-learning programs rely on a system of consistent and integrated efforts of faculty/instructors, students, facilitators, and support staff. An organizational system for e-e-learning is dependent upon a variety of individuals to ensure effective programmatic outcomes including:

**Students** - Meeting the instructional needs of students is the cornerstone of every effective distance education program. Regardless of the educational context, the primary role of the student is to learn. When instruction is delivered at a distance, students are often separated from others sharing their backgrounds and interests, have few if any opportunities to interact with teachers outside of class, and must rely on technical linkages to bridge the gap separating class participants. A system to organize and serve should include:

A. Enrollment and advisement services
B. Counseling and career services
C. Registration and other support services

**Lecturers and Professors** - The success of any distance education effort is dependent upon lecturers. In a traditional classroom setting, the instructor's responsibility includes designing course content and developing an understanding of student needs. Special challenges confront those teaching at a distance. For example, the instructor must:

- Develop an understanding of the characteristics and needs of distant students with little first-hand experience and limited, if any, face-to-face contact.
- Adapt teaching styles taking into consideration the needs and expectations of multiple, often diverse, audiences.
- Develop a working understanding of delivery technology, while remaining focused on their teaching role.
- Function effectively as a skilled facilitator as well as content program.

Faculty members reported that sound theoretical basis; experience and practice with the particular curriculum, instruction being adopted/adapted, and a technical support system
Designed specifically to their needs was useful in their development. Comprehensive faculty development activities were viewed as critical for instructors to understand the pedagogical implications of teaching courses at a distance and the technological implications involved relative to limitations and advantages.

- Local resource personnel provide direct follow-up assistance
- Peer observation and discussion provide teachers with reinforcement and encouragement
- Administrators participate in staff development
- Regular meetings held with teachers for problem solving and adapting techniques and skills of the innovation
- Released time used for teacher staff development
- Staff development planned with teachers prior to and during the project

**Facilitators** - The instructor often finds it beneficial to rely on a site facilitator to act as a bridge between the students and the instructor. To be effective, a facilitator must understand the students being served and the instructor's expectations. Most importantly, the facilitator must be willing to follow the directive established by the teacher. Where budget and logistics permit, the role of on-site facilitators has increased even in classes in which they have little, if any, content expertise. At a minimum, they set up equipment, collect assignments, proctor tests, and act as the instructor's on-site liaison. In asynchronous formats, facilitators can assist instructors in threaded discussion organization and in managing email messages.

**Support Staff**: Most successful e-learning programs consolidate support service functions to include student registration, materials duplication and distribution, textbook ordering, securing of copyright clearances, facilities scheduling, processing grade reports, managing technical resources, etc.

**Administrators** - Although administrators are typically influential in planning an institution's distance education program, they often lose contact or transfer control to technical managers once the program is operational. Effective distance education administrators are more than idea people. They are consensus builders, decision-makers, and referees. They work closely with technical and support service personnel, ensuring that technological resources are effectively deployed to further the institution's academic mission. Most importantly, they maintain an academic focus, realizing that meeting the instructional needs of distant students is their ultimate objective.
Davidson, Vogel, Harris & Jones (1999) suggest a grassroots change in viewing the adoption of informational technologies as leverage to address community and national interests. The availability of cost-effective microcomputers, local and wide-area networks, and advancements in telecommunication, especially digital applications, have made the consideration of e-e-learning and the associated technologies more conducive to meet ever increasing human and business needs. In the wake of liberalization, economic management of education has become a prime consideration for countries transitioning to a e-e-learning format. Even though the new focus of attention is on e-commerce activities, the development of an educational social infrastructure is important consideration. The question remains however is which technology and which format will be used and how a model of e-e-learning might be designed to meet the unique need of each country, respectively.

**Summary**

The administration and management of e-e-learning has rapidly become an important component in addressing education at all levels. An ever-increasing number of academic programs are developing e-e-learning courses and programs, while those already involved are expanding their activities. While these opportunities are welcome developments, new and untried delivery systems test conventional assumptions, raising questions as to the essential nature and content of an educational experience and the resources required to support IT and e-learning (Wiche, 2001). In transitioning to e-learning environment, programs should consider the following:

- That education is best experienced within a community of learning where competent professionals are actively and cooperatively involved with creating, providing, and improving the instructional program;
- That e-learning should be dynamic and interactive, regardless of the setting in which it occurs;
- That instructional programs leading to degrees are organized around substantive and coherent curricula which define expected e-learning outcomes;
- That institutions accept the obligation to address student needs and to provide the resources necessary for, their academic success;
- That institutions are responsible for the education provided in their name;
- That institutions undertake the assessment and improvement of their quality, giving particular emphasis to student learning and faculty development;
- That institutions voluntarily subject themselves to external oversight.
To ensure a standard of quality, which will reinforce the intent of the e-learning programs and the quality of instruction that students receive, programs must incorporate standards, which are evaluative through a formative and summative format. Access and inclusion should be the principle values encouraging the use of new technologies to deliver or enhance instruction. The pursuit of technology, for the sake of technology itself, can become a deterrent for developing human and fiscal resources and can impede the mission of institutions and their capacity to meet the needs of all students.
REFERENCES


