

Chapter 26

ADL and Global Education

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In the past decade, e-learning and its numerous variations have become commonplace in many countries, for both training and education. Some groups are learning from early adopters. Some implementations are more advanced than others. Some organizations are experimenting with new approaches. But all interested parties from many nations are discovering the advantages that computer and communication technologies bring to the learner and those who provide for the learner.

This chapter represents my attempt to unite the Advanced Distributed Learning (ADL) Initiative's business paradigm as described by Wisher (this volume) with the perspectives I have gained over the past decade and a half concerning the use of the World Wide Web for instruction. Until being commissioned by the ADL Initiative to serve as a co-editor of this book, my dealings with ADL were occasional. I attended ADL open houses, participated in certain activities, and studied ADL publications. All along, I have independently admired the Initiative's vision and goals, and its openness about providing high quality content that is accessible, interoperable, durable, and reusable.

The Emergence of the Web

In the emerging field of information technology, the Web was a new kid on the block during 1993-94. However, its impact as a new medium for sharing information in multimedia format quickly gained enormous attention throughout the world. Corporations, educational institutions, and government agencies found the Web to be an effective and convenient way of providing information about their products and services. In its early form, the Web was used mostly to offer *informational* sites.

After reflecting on various attributes and capabilities of the Web, I started to explore its potential for educational use. With contributions from more than 100 researchers and practitioners worldwide who specialized in technology-mediated learning, I compiled a book entitled *Web-Based Instruction* (Khan, 1997) which provided an organized, coherent framework for Web-based instruction by defining the critical dimensions of this new field of inquiry and practice at all levels of education. *Instructional* sites geared toward using the Web for educational and training purposes began to emerge in the late 1990s.

In the United States, the Department of Defense deserves credit for pursuing early, and on a mass scale, network-based learning that takes advantage of Web features for the training and education of military personnel. In the summer of 1998, a special team composed of educators from each of the military Services interviewed practitioners of online education in academia and industry to benchmark educational technology policies and practices. The goal was to revamp joint professional military

education programs to move more instruction to Internet delivery (Goodden, 2001). I was a member of the team of researchers and practitioners who participated, and shared my experience with designing and teaching Web-based courses while on the faculty at the George Washington University.

The new field of Web-based instruction added to the interest in software applications known as learning management systems, or LMSs. At that time, there were no standards for LMSs. In November 1999, the ADL Initiative and *PCWEEK* magazine organized an event entitled “PCWEEK Shootout” where I served as a judge to review LMSs. Summarizing the Shootout, Donston (1999) reported, “Standards for learning management systems are in flux, according to the judges of a recent shoot-out between seven such systems, and the products are not yet able to meet the distributed-learning needs of organizations” (p. 134). Hundreds of learning management systems entered the marketplace over the past three decades, but they lacked interoperability (Wisher, this volume). The impact was that learning content developed on one system could not be shared and used on another system without substantial recoding. The specifications harmonized in ADL’s Sharable Content Object Reference Model (SCORM) are intended to speed adoption of distributed learning by allowing organizations to share training and education materials.

ADL Initiative

The ADL Initiative became well known globally for consensus building and promotion of SCORM which, together with content registries (Lannom, this volume), allows LMSs to find, share, import, export, and reuse e-learning content with one another. The contributions of SCORM in e-learning are technical advances that enable interoperability rather than pedagogical contributions (Roberts & Gallagher, this volume). Even though SCORM was not devised to provide pedagogical guidance, the e-learning industry has a vested interest in developing instructionally sound e-learning materials with SCORM.

Since its inception in November 1998, those in the ADL Initiative, other parties, and myself observed steady changes in the attributes and capabilities of emerging technologies, and their implications in education and training. The ADL Initiative continued to provide improved services to the field, as reflected in the *ADL* business paradigm (Wisher, this volume). I, from the academic world, stayed tuned to ADL’s activities while continuing to study critical issues of meaningful learning environments using emerging technologies and the Web. The result was a *Global E-Learning Framework* (Khan, 2001), described later.

This chapter provides broader perspectives of e-learning implementation for globally diverse learners by discussing critical issues encompassing various dimensions of global e-learning environments together with aspects of the ADL business paradigm. It discusses, in order, open and distributed learning, global interest in e-learning, global interest in the ADL Initiative, my *Global E-Learning Framework*, and the *Framework’s* relationship to the ADL business paradigm for supporting global education. Table 26-2 provides a cross-reference for every chapter in this volume with a dimension in the

Framework, and illustrates the commonalities and overlapping interests between ADL and an independently developed view on global education.

Open and Distributed Learning

With the continual emergence of new technologies offered through the Web, institutions around the world are investing more and more in the development and deployment of *open* (i.e., learning in your own time, pace, and place, Calder & McCollum, 1998) and *distributed* learning (i.e., learning materials located in different locations, Khan, 2001). Distributed learning is used here in the context of learning environments with dispersed instructors and students, including standing alone with no instructor other than the computer itself present (Fletcher, this volume). There are numerous terms that refer to open and distributed learning activities, including E-Learning, Distributed Learning, Advanced Distributed Learning, Web-Based Learning, Web-Based Instruction, Web-Based Training, Internet-Based Training, Distance Learning, Online Learning, Mobile Learning (or m-Learning), Nomadic Learning, Remote Learning, Off-site Learning, a-Learning (anytime, anyplace, anywhere learning), etc. In this chapter, the term **e-learning** is used to represent open and distributed learning (see Figure 26-1).

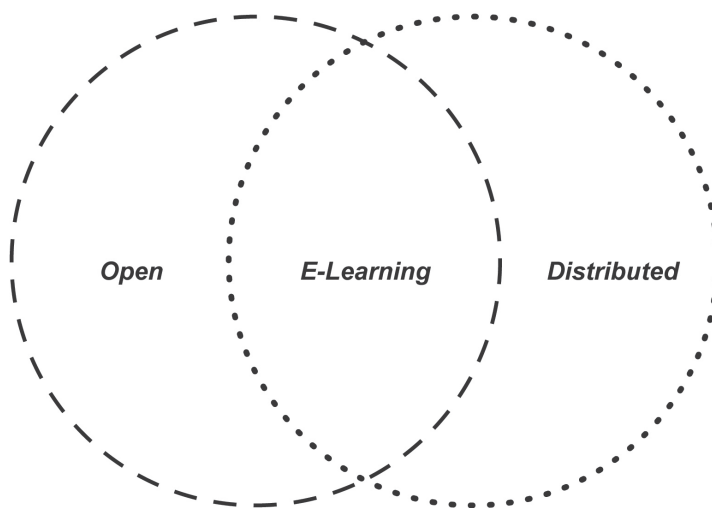


Figure 26-1. Open and distributed learning. This diagram shows an overlapping area between open learning and distributed learning.

Global Interest in E-Learning

In the information society, advances in information and communication technologies (ICTs) have created a digital society and broadened the scope of sharing

innovations globally. In this digital society, people use digital devices in almost everything they do in their lives, from brushing teeth, to reading books, to driving a car. In the education and training arenas, an open and distributed digital learning environment provides a flexible form of interactive and facilitated learning environment to anyone, anyplace, anytime by using the attributes and resources of digital technologies along with other forms of learning materials (Khan, 2005a).

E-learning, increasingly enhanced by the availability of more powerful ICTs, is growing globally. Academic institutions, corporations, and government agencies worldwide are increasingly using the Internet and digital technologies to deliver instruction and training. A study of 2,500 U.S. colleges and universities reports that the number of online students more than doubled in five years, growing from 1.6 million students taking at least one online course in the fall of 2002 to 3.94 million in the fall of 2007. This represents a compound annual growth rate of 19.7 percent (Allen & Seaman, 2008). Similar growth trends are seen in other countries.

e-Learning Practices

The prevalence of e-learning practices has been more visible in some western countries than in other parts of the world; however, other nations are not lagging behind. Most nations are increasingly incorporating ICTs into their national agenda to improve efficiency in information and knowledge sharing in education, governance, commerce, health, agriculture, and other sectors. Educational policies are being formulated in various communities worldwide to enable educational institutions to come to terms with new learning technologies. For example, e-learning and the use of ICT tools to deliver educational resources (Kisambira, 2008) is an emerging issue at institutions of higher learning in Africa.

Similar national initiatives are either in place or underway elsewhere. Examples include projects such as *ictQATAR* and Bangladesh's new initiative called "Digital Bangladesh," which seek to connect people to emerging technologies that enrich their lives with education and support greater economic development (Nahid, 2009). Various national e-learning initiatives for higher education taken by ministries of education or national agencies have been documented. Access to both of these efforts can be found at the Web Resources section at the end of this chapter.

The demand for e-learning continues to grow. However, implementing meaningful e-learning for diverse learners for open and distributed environment is challenging. Designing and delivering instruction and training on the Web requires thoughtful analysis and investigation, combined with an understanding of both the Internet's capabilities and resources and the ways in which instructional design principles can be applied to tap the Internet potential (Ritchie & Hoffman, 1997, cited in Khan, 1997). Also, various factors encompassing the critical issue of ensuring an open and distributed learning environment must be addressed to create meaningful e-learning for learners worldwide.

Global Interest in ADL Initiatives

Since its inception in November 1998, the Advanced Distributed Learning Initiative has been instrumental in empowering the computer-based training industry globally in the large-scale development, implementation, and assessment of interoperable and reusable learning systems. Global interest in ADL is evident. Starting with the United Kingdom in 2002, several nations have volunteered to champion the ADL cause. Canada, Korea, Australia, Norway, Romania, and a consortium of 14 Latin American and Caribbean nations stepped forward as international partners of the ADL Initiative, as described in Section Four of this volume. Some of these efforts translate the ADL documentation into their national languages, others develop internal compliance test centers, and others share content. The most recent addition to the network of international partnership labs is the German Workforce ADL Partnership Laboratory, formed in October 2009.

e-Learning in the Middle East

Although ADL does not have a partnership lab in the Middle East, e-learning practices have been very visible there recently. Academic institutions and corporations are using e-learning for education and training purposes. Because of the tremendous interest in the region, *Educational Technology Magazine* compiled a special issue on “ICT and E-Learning in the Middle East” (Khan & Ally, 2010). Articles in the special issues includes case studies of e-learning practices in Saudi Arabia, Israel, Iran, Lebanon, Jordan, Turkey, Morocco, Oman, Kuwait, Palestine, Bahrain, Qatar, and the United Arab Emirates. In January 2009, Dr. Robert Wisher (former Director, ADL Initiative) was invited to deliver a keynote speech on the ADL Initiative at the 2nd Annual Forum on e-Learning Excellence in the Middle East in Dubai. During my presentations at conferences in several countries in the Middle East, I field many questions about SCORM and ADL. For example, Dr. Abdullah Almegren, the Director General of the National Center for e-Learning & Distance Learning Center in Saudi Arabia, has expressed an interest in using SCORM in an open-source, Arabic LMS, and in the potential for establishing future partnerships.

Metrics on Global Interest

An analysis of visits to ADL’s Web site between May 2009 and December 2009 reveals that 58.3 percent of all traffic originated outside of the United States with an average of three page views per visit. Of the 195 countries of the world, 180 have visited the ADL Initiative’s Web site. These statistics show that the interest in ADL is truly global. Though a majority of visits are for SCORM-related information, other parts of the Web site are also visited for information containing the ADL Registry, immersive technologies, training evaluation and research, and ADL’s Learning Technology Lab. Additionally, 34 percent of all traffic is translated into local languages; these languages include English, Spanish, Chinese, French, German, Portuguese, Italian, and Russian. Thirty-three percent of all visitors are returning to the Web site for additional information (Personal communication, Ryan Proctor, December 15, 2009).

Global interest for ADL services has mostly been limited to designing technical standards for learning content development. However, as the e-learning industry has developed to a solid platform, the industry has tended to seek ADL's guidance and advisement on other issues in learning development, including pedagogical, management, interface design, resource support, evaluation, etc. Conversations with leaders in e-learning around the world (Khan, 2005b) indicate that the ADL Initiative has become a leading resource in the world for harnessing the power of learning and information technologies to standardize and modernize education and training globally, and does so in a way that is open and vendor neutral.

The Global E-Learning Framework

Since 1995, I have researched critical ICT and e-learning issues throughout the world, to answer the question: What does it take to provide flexible learning environments for learners worldwide? As we are accustomed to teaching or learning in a traditional classroom-based closed system, the openness of flexible online learning is new. In order to create effective environments for diverse learners, however, we need to leave our classroom-based, closed system of learning design. We need to be attentive to a variety of new and emerging issues of flexibility and address them in the design of e-learning environments (Khan, 2007; Morrison & Khan, 2003). We need to change our mindset—that is the paradigm shift. In order to facilitate such a shift, and in response to the range of issues I saw in my research, I formulated a *Global E-Learning Framework*. The framework was reviewed by leading academic researchers and practitioners in the field of instructional design and technology from around the globe who provided constructive feedback for its steady improvement. A number of my edited volumes focus on various dimensions of this framework.

Through my research I found that numerous factors contribute to creating a meaningful open and distributed learning environment. Many of these factors are systemically interrelated and interdependent. A systemic understanding of these factors can help us create meaningful learning environments. These factors are clustered into eight dimensions to develop the Global E-Learning Framework: *institutional, pedagogical, technological, management, interface design, resource support, evaluation, and ethical considerations* (Khan, 2001). In this chapter, the eight dimensions of the framework are also referred to as the dimensions of the e-learning environment. E-learning environments can vary by sector (such as education), and by vertical markets within sectors (such as a university system). The dimensions are graphically depicted in Figure 26-2.



Figure 26-2. The global e-learning framework. This figure shows the eight dimensions radiating from a central global e-learning hub.

Dimensions of the E-Learning Environment

The eight dimensions of the e-learning framework define an e-learning environment. No single dimension is more important than others. All dimensions have systemic relationships for interrelatedness. The interrelatedness of the framework dimensions can best be described by their stakes in various issues or factors they share in working toward developing a meaningful e-learning environment. For example, creating a SCORM-conformant learning object is a core issue for the *technological* dimension. As we know, sharable learning content is cost effective (i.e., *institutional*), instructionally useful (*pedagogical*), interoperable in different parts of a course (*interface design*), easily maintainable (*management*), and resourceful (*resource support*). For a comprehensive design for a specific learning environment, we should understand the reality of that particular learning context and address relevant issues encompassing each dimension.

Each dimension has several sub-dimensions. Each sub-dimension generates factors focused on a specific aspect of an e-learning environment. The eight dimensions and their respective sub-dimensions represent areas requiring consideration early in the e-learning development process. These need to be revisited throughout an e-learning project's life cycle as part of a continuous improvement strategy (Gamor, this volume).

Table 26-1 lists the eight dimensions and underlying sub-dimensions of the learning environment.

Table 26-1

Dimensions and Sub-Dimensions of the E-Learning Environment

<p>1. INSTITUTIONAL</p> <p>1.1 Administrative (with 14 factors)</p> <p>1.2 Academic affairs (with 5 factors)</p> <p>1.3 Student services (with 16 factors)</p> <p>2. PEDAGOGICAL</p> <p>2.1 Content analysis</p> <p>2.2 Audience analysis</p> <p>2.3 Goal analysis</p> <p>2.4 Medium analysis</p> <p>2.5 Design approach</p> <p>2.6 Organization</p> <p>2.7 Methods and strategies (with 20 factors)</p> <p>3. TECHNOLOGICAL</p> <p>3.1 Infrastructure planning (technology plan, standards, metadata, learning objects)</p> <p>3.2 Hardware</p> <p>3.3 Software (LMS, LCMS, SCORM)</p> <p>4. INTERFACE DESIGN</p> <p>4.1 Page and site design</p> <p>4.2 Content design</p> <p>4.3 Navigation</p> <p>4.4 Accessibility</p> <p>4.5 Usability testing</p>	<p>5. EVALUATION</p> <p>5.1 Assessment of learners</p> <p>5.2 Evaluation of instruction & learning environment</p> <p>6. MANAGEMENT</p> <p>6.1 Maintenance of learning environment</p> <p>6.2 Distribution of information</p> <p>7. RESOURCE SUPPORT</p> <p>7.1 Online support (with 4 factors)</p> <p>7.2 Resources (with 2 factors)</p> <p>8. ETHICAL</p> <p>8.1 Social and political influence</p> <p>8.2 Cultural diversity</p> <p>8.3 Bias</p> <p>8.4 Geographical diversity</p> <p>8.5 Learner diversity</p> <p>8.6 Digital divide</p> <p>8.7 Etiquette</p> <p>8.8 Legal issues (with 3 factors)</p>
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A Unified Approach to Supporting Global Education

Education and training via emerging technologies for diverse learners needs continuous investigation of what works and what does not work. Updated prescriptive and descriptive knowledge from academia and industry are sorely needed to support the design of e-learning. The *Global E-Learning Framework* provides guidance in the design, development, evaluation, and implementation of meaningful e-learning, and the *ADL Business Paradigm* enhances e-learning efforts by providing technical standards, a collaborative framework, and an ensuing, competitive marketplace for continuous improvement. Figure 26-3 represents a view before joining together the components of each.

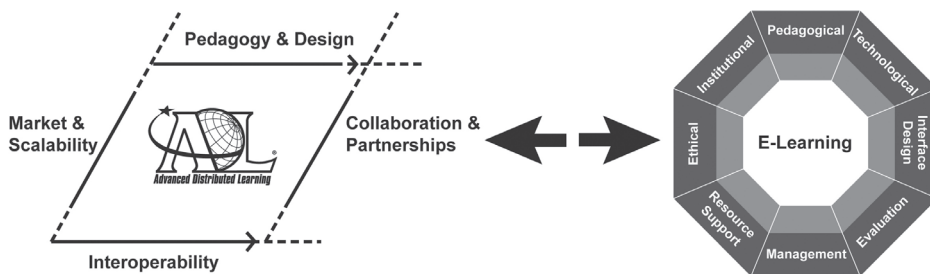


Figure 26-3. Representations of the ADL business paradigm and the e-learning framework. This figure shows the four dimensions of the ADL business paradigm parallelogram and the eight dimensions of the e-learning framework octagon.

The *business paradigm* and the *framework* are complementary and supplementary to each other. A unified view is presented in Figure 26-4. Planners, administrators, and stakeholders at nearly every level can apply this unified view as a diagnostic tool to guide the utility and compatibility of e-learning design and implementation. An overall balance across all components and dimensions reflects an approach to e-learning that is sound, and contributes to the field in a global manner.

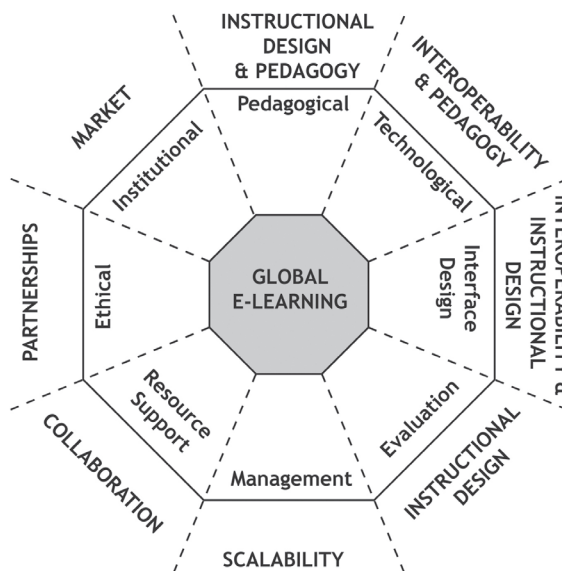


Figure 26-4. Comprehensive approach to e-learning. This figure illustrates a methodology for combining the ADL business paradigm and the global e-learning framework to integrate e-learning design and implementation.

Elements of the ADL business paradigm are shown in the outer rings of Figure 26-4, replicated from the four lines of the parallelogram in Figure 26-3. The message from Figure 26-4 is that the approach that the ADL Initiative has taken, and its overarching requirements for access, interoperability, durability, reuse, and durability, synchronizes with the needs of e-learning environments as identified in the *Global e-Learning Framework*. ADL adds technical knowledge, globally recognized standards and tools, and a long-term perspective on a path to high quality education and training, delivered on demand.

Chapters in this Volume and e-Learning Framework

In Table 26-2, the eight dimensions of the *Global e-Learning Framework* from this chapter are depicted across eight columns. Elements from the ADL Business Paradigm presented in Chapter 1 (this volume) are depicted across eight rows. The twenty-four other chapters in this volume are positioned within the matrix, where they fit best. This correspondence further illustrates coherence between the accomplishments of ADL and the issues that others may face in developing an e-learning environment. A pragmatic look at some issues is offered in the next section.

Table 26-2

Learning on Demand: ADL and the Future of e-Learning, cross-referenced by chapter with the elements of the Framework for e-Learning and the ADL Business Paradigm.

ADL Business Paradigm (Chapter 1)	Global E-Learning Framework (Chapter 26)							
	<i>Pedagogical</i>	<i>Technological</i>	<i>Interface Design</i>	<i>Evaluation</i>	<i>Management</i>	<i>Resource Support</i>	<i>Ethical</i>	<i>Institutional</i>
Instructional Design & Pedagogy	Chapters 5, 7, 12 13, 14, 15							
Interoperability & Pedagogy		3, 4, 8, 24						
Interoperability & Instructional Design			16					
Instructional Design				2, 6				
Scalability					9, 20, 21 22, 23			
Collaboration						10, 11, 25		
Partnerships							18	
Market								17, 19

Dealing with e-Learning Issues

This section of the chapter addresses specific issues that arise in e-learning design environments, with reference to the relevant components and dimensions of the unified model presented in Figure 26-4. Once we become familiar with the various components and dimensions of an e-learning environment, it is important to identify issues that may require specific attention during various stages of e-learning design. Since each project is unique, it is important to identify as many issues—in the form of questions—as possible for your organization’s e-learning project.

One way to identify critical issues is to place each stakeholder group (such as learner, instructor, support staff, etc.) at the center of the framework and raise issues along each of the eight dimensions. Team members can articulate issues and answer questions in a way that can help create a meaningful learning environment for a particular organization or group. By repeating the same process for other stakeholders, it is possible to generate a comprehensive list of issues for the e-learning project.

Examples of e-Learning Issues

Several examples of the issues that frequently arise are discussed below. Many others are not covered here; these are most relevant to the widest audience and to ADL concerns.

Are all learning objects created for the course reusable and shareable?

If your institution creates learning objects by following international interoperability standards (such as SCORM), they can be reused and shared by multiple courses within your institution and beyond. Reusable and shareable learning objects not only save money but also promote collaboration among e-learning partner institutions. Administrators would be interested in including this type of issue as part of infrastructure planning within the *technological* dimension. The process used by ADL for registering learning content (Freeman, this volume; Lannom, this volume) provides a good example of policy for content registration.

Does the course make an effort to reduce or avoid the use of jargon, idioms, ambiguous or cute humor, and acronyms? To improve cross-cultural verbal communication and avoid misunderstanding, we should refrain from icons, symbols, jokes, or comments that might be misinterpreted by others. In Bangladesh, the thumbs-up sign means to disregard someone, but in other cultures it often means “excellent” or “job well done.” An icon that uses a pointing hand to indicate direction would violate a cultural taboo in certain African cultures because it represents a dismembered body part (this is also true for a pointing finger that indicates a hyperlink). A right arrow to indicate the reader should move to the next page may instead guide Arabic and Hebrew language speakers to return to the previous page, since they read from left to right instead of from right to left. This is an *interface design* concern for learners from many different cultural backgrounds, and thus is an issue relevant to instructional designers creating content for a diverse audience (Deibler & Berking, this volume).

How often is dynamic course content updated? In designing e-learning, we need to consider the stability of course content. Content that does not need to be updated is categorized as static (e.g., historical events, grammar rules, etc.). Content that has the potential to change over time is considered to be dynamic (e.g., laws, policies, technical documentation, etc.). Because dynamic content needs to be revised from time to time, it is necessary to identify such content in a course and establish an ongoing method for timely updating as needed. It can be very frustrating for learners to find outdated or obsolete information (Shanley et al., this volume). This is one example of an issue relevant to the content analysis section of the *pedagogical* dimension. For an example on how to deal with this issue, consult the technical approach to currency and life cycle management of content discussed by Gafford and Heller (this volume).

Are students actually doing the work? How do we know we are assessing fairly and accurately? These are the types of questions that will always be in the minds of online instructors and administrators. Assessment of learners at a distance can be a challenge. Issues related to cheating are a major concern, and an institution offering e-learning should have a mechanism by which a learner can be accurately measured and which detects cheating. This has been a concern of the ADL Initiative and the Department of Defense (Curnow, Freeman, Wisher, & Belanich, 2002), and is relevant to the assessment of learners component of the *evaluation* dimension.

Does the course have encryption (i.e., a secure coding system) available for students to send confidential information over the Internet? All institutions are vulnerable to hackers. Academic networks can be targets of hackers if they lack adequate security. This is a concern for network managers, and is a key aspect of the security measures section of the *management* dimension. The chapter by Camacho, West, and Vozzo (this volume), which describes three levels of security in the Joint Knowledge Online portal, provides one example of an effective approach to security.

The purpose of raising questions within each dimension of the framework is to help us think through our projects thoroughly. Note that there might be other issues not yet known, or not yet encountered. As more and more institutions worldwide offer e-learning, new issues will be raised within the eight dimensions of the framework.

E-Learning Application Continuum

The framework can be applied to e-learning of any scope. This scope refers to a continuum defined by the extent to which instruction and training are delivered on the Internet and it must be planned for systematically. The weight placed on any e-learning dimension or sub-dimension, or on any set of e-learning items, will vary with the scope of the instruction. This continuum is described below, with examples, to show the type and scope of e-learning activities along the continuum, and how their design relates to various categories of the framework.

At the “micro” end of the continuum, e-learning activities and information resources can be designed for face-to-face instruction in educational and training settings. In the high school physics classroom, for example, a teacher may use

simulations to support the cognitive work of analyzing data, visualizing concepts, and manipulating models. Further along the continuum, a more comprehensive design is needed for complete academic or training courses that require that all content, activities, interaction, tutorials, project work, and assessment be delivered on the Internet.

At the “macro” end of the continuum, the framework can support the design of complete distance-learning programs and virtual universities without a face-to-face component, such as continuing education programs for accountants or network engineers. For example, designers of Web-based continuing education for accountants dispersed all around the world would have to plan for every dimension of the framework in considerable detail. They would have to work with computer programmers, testing specialists, security professionals, subject-matter experts, and accountants’ professional organizations. These designers would have to do everything from planning a secure registration system to considering cultural and language differences among accountants from different countries who are seeking continuing education credit.

As the scope of e-learning design expands, design projects change from one-person operations to complex team efforts. The framework can be used to ensure that all important factors are considered in the design of e-learning, whatever its scope or complexity. It also helps to create the appropriate blend by ensuring that each ingredient, individually and collectively, adds to a meaningful e-learning environment.

E-Learning Key Factors

Once we become familiar with various dimensions of an e-learning environment, we are then able to draw the boundaries of our e-learning environments. We have to ask ourselves: How far do we want to go? Who are our customers (or learners)? Where are they? What and how they want to learn? If our scope of operation is global, then our issues are global. To address all these issues, we have to identify all of the critical factors that are relevant to particular e-learning environments.

Since this chapter focuses on global education, I would like to present an application of how the e-learning framework was used in a study from Curtin University of Technology, Australia. The university used the *Global E-Learning Framework* to identify key factors or issues to be addressed before offering a fully online curriculum. The study investigated the views of four different perspectives (students, IT staff, academic staff, and management). Using a 5-point Likert Scale, participants were asked to rate the list and then to rank in terms of importance the dimensions that were derived from the framework. A three-round Delphi study had produced the 54 factors encompassing the eight dimensions of the e-learning environment (Chin & Kon, 2003). In the Curtin University of Technology study, as one example, the factors of greatest concern under the Pedagogical Dimension of the Framework were: prompt feedback, alternative submission of assignments, interactive course, learning styles, teacher as facilitator, student commitment, multimedia tools/technologies, and agreed time for communication.

Conclusion

E-learning is becoming more and more accepted in workplaces around the world. Institutions are investing heavily in the development and deployment of online programs. Academic institutions, corporations, and government agencies worldwide are increasingly using the Internet and digital technologies to deliver instruction and training. At all levels of these institutions, individuals are being encouraged to participate in online learning activities.

Implementation of e-learning with emerging technologies for global audiences is increasingly dependent on several factors: culturally responsive pedagogy (Frederick, Donnor, & Haltley, 2009), up-to-date interoperability standards for sharing content, globally feasible business approaches for greater return on investment, understanding the attributes of newer technologies and their implication for education and training, and sharing of knowledge and resources. With changes in information technology and in lifestyles, designing *learning on demand* will be increasing challenging. The field of e-learning benefits from expanding the knowledge base to integrate multiple different perspectives. Curtis Bonk points to the convergence of three factors: an enhanced learning infrastructure through the Web; immense quantities of open content within that infrastructure; and a culture of sharing knowledge and participation, that is opening up education, and the world, to everyone (Bonk, 2009).

Many communities around the globe are transforming their educational systems by taking advantage of newer learning technologies with the hope of greater return-on-investment. They need guidance to successfully implement their e-learning programs. Experience from both academia and industry is critical to the successful implementation of e-learning. The *Global E-Learning Framework* is rooted in academia, and the *ADL business paradigm* is based on industry research and analysis supported by a government initiative. The combined knowledge base derived from both approaches provides comprehensive perspectives for designing effective education and training for globally diverse learners in the information society.

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- eLearning Africa. <http://www.elearning-africa.com/>
- National Initiatives Worldwide. http://www.virtualcampuses.eu/index.php/Category:National_initiatives

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