QUALITY GUIDELINES FOR TECHNOLOGY-ASSISTED DISTANCE EDUCATION

prepared for:

Community Association for Community Education (CACE)
and
the Office of Learning Technologies (OLT)
of Human Resources Development Canada (HRDC)

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1. PROPOSED QUALITY GUIDELINES FOR DISTANCE EDUCATION

Preamble and Assumptions

1. There is a free market and a growing market in distance delivery of teaching/learning with great variety in content areas and quality. Potential students have choices. Not all distance education is provided by accredited institutions/agencies or recognized by accrediting bodies.

2. While distance learning includes all forms of delivery, such as regular mail and telephone, these guidelines focus on those that incorporate learning technologies such as the computers and the Internet. The term "technology-assisted distance learning" is intended to capture that notion.

3. Technology-assisted distance learning takes various forms: distance education, distributed learning, virtual or web-based education/training, synchronous and asynchronous learning.
   What they have in common is the fact that the learner is in one location and the "provider" of the learning is in another and technology is used to make the link.

4. Both providers and consumers of distance learning want education and training products and services that are effective and efficient. The term "quality" is used to encompass these concepts.

5. All learning products and services are a combination or system of inputs and resources, processes and practices, and outputs and outcomes. All are important; however, from the consumer's point of view, the outcomes are the most important, then processes and practices, and finally inputs and resources that have gone into the design, production and delivery of the learning product/service.

6. Learning products and services take numerous forms: individual courses, entire programs. The same principles or quality guidelines should apply to both.

1. Quality Outcomes from Technology-Assisted Distance Learning

1.1. Acquired content skills and knowledge are:

1.1.1. relevant to work and/or the best thinking in the field

1.1.2. general enough to be transferable between work / learning situations, e.g., employability and communication skills

1.1.3. specific enough to lead to work or higher learning, e.g., content or technical expertise

1.1.4. a blend of traditional education and applied technology skills

1.2. Necessary learning skills are acquired for:

1.2.1. course / program completion and success, explicitly
- sources of information and retrieval processes
- analytical and critical thinking
- reading and writing skills in context
- exam taking

1.2.2. lifelong learning by:
- providing a systematic introduction to the field
- offering a comparative or contextual framework for viewing the field of study
- seeking to broaden the learner and provide generic skills
- offering some freedom of choice and flexibility in structure
- providing for the incremental development of self-directed learning

1.2.3. self-directed learning management, for example:
- creation of a portfolio of acquired skills and knowledge
- awareness of personal gaps in skills and knowledge and relevant learning opportunities
- personal responsibility for one's own learning

1.3. Completion takes the form of **credits or credentials** that are:

1.3.1. recognized by professional accreditation bodies and employers
1.3.2. recognized by other education institutions – locally and internationally
1.3.3. of the same value whether acquired through on-site or distance learning
1.3.4. transferable within programs and institutions, and between provinces/territories

1.4. Return on investment of the learner's time, finances and energy meets expectations for:

    1.4.1. accessibility as needed and when needed
    1.4.2. objective benefits and utility
    1.4.3. effectiveness: subjective achievement of personal goals
    1.4.4. efficiency: best use of resources
    1.4.5. customer satisfaction with all course/program elements

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2. Quality Processes and Practices in Technology-Assisted Distance Learning

2.1. Student management processes and practices include:

    2.1.1. registration procedures that deliver:
- assurance that accepted students have the background, knowledge and technical skills needed to undertake the course/program
- a clear statement of expectations of learners
- an orientation program/service for those desiring it

    2.1.2. intake and place procedures that provide:
- individualized course / career counseling
- assessment and recognition of prior learning
- appropriate placement

    2.1.3. management of student records for:
- documentation of student achievement in each course and at completion of a program
- confidential treatment of records

    2.1.4. learner involvement in decision-making

    2.1.5. assistance with the technologies being used, i.e.,
- the purpose of the technology(ies)
- the etiquette involved
- skills and knowledge to manipulate and interact with it

2.2. Learning management processes and practices include:

2.2.1.teaching processes that:
- communicate high expectations
- provide prompt feedback to students
- respect diverse talents and ways of learning
- recognize the diversity of learners, learning needs, learning contexts, and modes of learning
- respond to individual learners
- incorporate an appropriate student-teacher ratio

2.2.2.approaches to **learning** that:
- foster active learning
- emphasize time on task
- build on learner's strengths and acquired skills and knowledge
- accommodate different individual learning styles
- support interaction and the development of learning communities
- increase learner control over time, place and pace of instruction

2.2.3.scheduling and timetabling that is:
- deliberately synchronous and/or asynchronous
- flexible and responsive to learners
- adequate and realistic

2.2.4.assessment of learning that is:
- frequent and timely
- appropriate and responsive to the needs of the learners
- in various forms such as written and oral assignments, self-assessment, demonstrations, and exams
- competency-based

2.2.5.authentic assessment of learning through:
- faithful representation of the contexts encountered in the field of study or in the real-life tests faced by adults
- engaging and important problems and questions
- non-routine and multistage tasks and real problems
- self-assessment
- trained assessor judgement
- the assessment of habits of mind and patterns of performance

2.2.6.evaluation of learning against criteria that are transparent, relevant, realistic, reliable, and valid

2.3. Technologies are **appropriately used** to:

    2.3.1. make students feel comfortable
    2.3.2. accommodate and promote individualization
    2.3.3. create opportunities for students to do meaningful work
    2.3.4. increase proficiency at accessing, evaluating and communicating information
    2.3.5. improve students' abilities to solve complex problems
    2.3.6. nurture artistic expression
    2.3.7. enable active engagement in the construction of knowledge
    2.3.8. drill students on basic concepts to reach mastery

2.4. **Communications** facilities, processes and practices are able to:

    2.4.1. encourage contact between students and faculty
    2.4.2. provide flexible opportunities for interactions and problem-solving
    2.4.3. develop reciprocity and cooperation among students
    2.4.4. provide the opportunity to "hear" other students' questions
    2.4.5. enable students to hear and to question experts in the field

2.5. **Human resources management** practices include:

    2.5.1. recruitment and selection of appropriate personnel
    2.5.2. a requirement for ongoing professional development in content areas
    2.5.3. availability of technical skills development and support
    2.5.4. regular evaluation of competence

2.6. **Program management** accountable for:

    2.6.1. student management and students' rights
    2.6.2. learning management
    2.6.3. technology planning and utilization
    2.6.4. planning and evaluation of all aspects of the product/service
    2.6.5. responsiveness and flexibility to the student and to changing learning requirements
    2.6.6. maintaining links within the education and business communities
    2.6.7. research and continuous improvement
    2.6.8. financial viability and continuity

3. Quality Inputs and Resources for Technology-Assisted Distance Learning

3.1. Intended learning outcomes are:

3.1.1. clearly stated
3.1.2. observable / demonstrable
3.1.3. measurable
3.1.4. achievable
3.1.5. useful and appropriate for the intended learners
3.1.6. shaped, where possible, with input from learners
3.1.7. appropriate to the rigor and breadth of the degree or certificate awarded
3.1.8. consistent with the providing organization's role and mission

3.2. Curriculum content is:

3.2.1. credible and academically respectable (source identified)
3.2.2. accurate
3.2.3. relevant
3.2.4. balanced and free of bias
3.2.5. updated consistently
3.2.6. documented
3.2.7. appropriate to the learning objectives
3.2.8. culturally sensitive

3.3. Teaching / learning materials are:

3.3.1. prepared by qualified content experts (author identified) working with qualified design experts (identified)
3.3.2. readily available and learner friendly – able to be used by the average student
3.3.3. interesting in content and layout
3.3.4. affordable
3.3.5. well-organized and free of errors
3.3.6. free of cultural, racial, class and gender bias
3.3.7. accessible to those with disabilities
3.3.8. relatively easy to use and free from technical hitches

3.4. A complete learning package includes:

3.4.1. course description
3.4.2. course/project objectives
3.4.3. information about the instructor(s)
3.4.4. learning/lecture notes and additional learning resources
3.4.5. course activities and assignments
3.4.6. quizzes and examinations
3.4.7. answers to questions/quizzes
3.4.8. a portfolio of acquired learning

3.5. Learning **technologies are appropriate** to:

    3.5.1. the field of study or subject matter content and skills
    3.5.2. the intended learning outcomes
    3.5.3. the relevant characteristics and circumstances of the learner
    3.5.4. cost and benefit for the learner
    3.5.5. provide access to high-level and high-interest courses
    3.5.6. provide representations in multiple modalities
    3.5.7. provide interconnections among concepts through hypertext
    3.5.8. increase global awareness
    3.5.9. make available real-world situations and simulate laboratory work
    3.5.10. provide instructor assistance with problems, guidance and reminders of
          assignments and exam dates

3.6. Sound technical design such that learning materials and delivery methods are:

    3.6.1. navigable
    3.6.2. updatable and updated
    3.6.3. complemented by graphics rather than distracted by them
    3.6.4. available in text-only interfaces for non-graphical browsers
    3.6.5. inclusive of "live" links to relevant, previewed documents
    3.6.6. reliable
    3.6.7. complete

3.7. Appropriate and necessary **personnel** include:

    3.7.1. instructors / teachers / professors with
         ·   recognized qualifications in the subject area
         ·   teaching experience at the relevant level (e.g., secondary, adult)
         ·   relevant experience and/or current knowledge in the field

    3.7.2. customer-oriented management that helps with
         ·   information and course/program advising
         ·   application and registration procedures

    3.7.3. content support persons, e.g.,
         ·   course / academic counseling
         ·   library staff
         ·   tutors and mentors

    3.7.4. process support persons, e.g.,
         ·   technical support
         ·   learning skills support
         ·   career planning and employment counseling
         ·   problem-solving

3.8. Learning resources, in addition to teaching materials, are:
    3.8.1.varied
    3.8.2.easily and totally accessible via distance delivery
    3.8.3.respectful of copyright
    3.8.4.flexible to accommodate different learning styles

3.9. Program plans and budget include:

    3.9.1.written policies for all aspects of the course/program

    3.9.2.an adequate budget to achieve stated program goals

    3.9.3.enabling legislation (public education / private enterprise)

    3.9.4.financial and administrative commitment to the continuation of a program for a period sufficient to enable students to complete a degree/certificate

    3.9.5.integration of distance delivery with the institution's overall policy framework

    3.9.6.a technology plan defining technical requirements and compatibility needed to support the learning activities

    3.9.7.security of systems to ensure the integrity and validity of information shared in the learning activities

3.10.   Evidence of program success through **routine review and evaluation** of:

    3.10.1.   course content and objectives
    3.10.2.   learning materials
    3.10.3.   instructional design
    3.10.4.   instruction and instructors
    3.10.5.   learning and student achievement
    3.10.6.   policies and management practices
    3.10.7.   operational procedures
    3.10.8.   customer satisfaction

3.11.   Product/service information for potential students is:

3.11.1.   in writing
3.11.2.   clear
3.11.3.   current
3.11.4.   accurate
3.11.5.   comprehensive and complete

3.12.   Advertising, recruiting and admissions information includes:

3.12.1.   pre-requisites and entry requirements
3.12.2.   the curriculum overview
3.12.3.   specific delivery format
3.12.4.   course level and credit points
3.12.5.   course length and degree requirements
3.12.6.   all fees: registration, tuition, books and materials, equipment, other
3.12.7.   institutional regulations
·   residency requirements
·   workload requirements
·   extensions
·   grade appeals
·   withdrawals and refunds
·   costs and payment policies
3.12.8.   the nature of the faculty/student interaction
3.12.9.   assumptions about technical competence and skills
3.12.10.   technical equipment requirements, and availability of rentals
3.12.11.   academic support services and learning resources
3.12.12.   technical support services
3.12.13.   financial aid resources
3.12.14.   types of assignments and grading methods
3.12.15.   learning assessment procedures and evaluation criteria
3.12.16.   program success from evaluation and student follow-up reports

3.13.   The **comprehensive course package** (all materials and technologies) is:

3.13.1.   appealing in appearance
3.13.2.   user-friendly
3.13.3.   customizable
3.13.4.   extensible
3.13.5.   inclusive of all institutional services and activities (registration, payment, advising, tutorial assistance, library services)
3.13.6.   personalized
3.13.7.   coherent and complete
3.13.8.   reviewed and evaluated routinely

2. BACKGROUND TO THE PROJECT: Why Quality Guidelines?

In a joint project, the Community Association for Community Education (CACE) and FuturEd Consulting Education Futurists (FuturEd) are collaborating to examine quality assurance in distance delivery of education and training using learning technologies. The project is funded by the Office of Learning Technology (OLT) of Human Resources Development Canada (HRDC).

For CACE and OLT, there is an interest in quality guidelines for distance education/delivery, particularly incorporating the consumer's point of view.   Previous work by FuturEd and others has indicated that providers and consumers of education products and services can have different perspectives and priorities. Both OLT and CACE advocate on behalf of adult students and learners in Canada.   For FuturEd, the issue of quality and excellence in distance delivery has arisen in the effort to formally evaluate an innovative distance education project.[1] At this time, there are not Canadian quality guidelines, and in particular, no guidelines that reflect the consumer-orientation to education products and services. In the absence of Canadian guidelines, American guidelines have been used in some cases. FuturEd and others believe that quality guidelines should reflect Canadian values. For planning and evaluation purposes, comprehensive guidelines are needed, guidelines that include quality assurance indicators for (1) inputs and resources, (2) processes and practices, and (3) outputs and outcomes of the distance learning product/service.

To date, providers of distance learning-via-technology have established a wide variety of guidelines which largely and rightfully reflect their organizational needs and methods of operation. This project focuses on ascertaining the feasibility of assembling consumers of distance learning-via-technology to determine how they would describe quality. Quality guidelines for learning technologies could be used:
> by students / learners to make informed choices;
> by providers of technology-assisted learning to develop, evaluate, improve and market their products and services;
> by policy makers to understand the needs and perspectives of the public, and the fit between what is needed and what is available;
> by OLT to evaluate, in part, funded R and D projects;
> by CACE and others in the technology-assisted learning community to ensure quality in Canadian products and services;
> by the international market to appreciate Canadian quality values in technology-assisted learning products and services;
> by the labour market partners to promote collaboration and leadership for positive change.

The process undertaken for this project has been an extensive international literature search for both complete sets of guidelines and individual quality indicators for distance learning.[2]   A discussion of related terminology is found in Appendix A. The search has included both Internet and traditional sources, and has focused largely on the most recent literature in light of the ever-changing and innovative nature of the field. It is recognized that distance education takes many forms, with technological delivery being only one; and it is recognized that learning technologies are used in many more forms than just for distance education. However, this project is focused on the application of learning technologies in distance education only.

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[1]   FuturEd is under contract to the Open Learning Agency and Vancouver Community College to evaluate a project funded by the OLT: the Court Interpreter Training Project.

[2]   The terms *distance education, distance learning* and *distance delivery* are often used synonymously; they are, however, different in terms of focus: *education* and *delivery* being from the provider's point of view and *learning* from the consumer or student's point of view.

This proposed research project is concerned with the potential development of consumer-based quality guidelines that:

    describe either minimum acceptability and/or excellence in the application of learning technologies (appropriately defined and limited for research purposes to the distance learning environment);

    take the form of statements / principles of good practice or best practice, and include all elements of the learning system;

    are developed by Canadian consumers to reflect Canadian values and concerns, but have potential applicability to the international environment;

    are created through a consensus-based process involving actual consumers that are representative of all Canadians;

    include a method of implementation that is neither cumbersome or costly;

    incorporate the most current thinking on the effective use of learning technologies; and contribute to increasing the effectiveness and efficiency of learning technologies and Canada's learning culture.

The consumers of technology-assisted learning, Canadians and citizens of literally every other country on the planet, face the daunting task of choosing from among the increasing variety and complexity of technologically-based learning opportunities. FuturEd, CACE and OLT are prepared to assist in providing tools for consumers to use in making choices and in ensuring the best return on their investment. At the same time, providers need to know what consumers expect, and this becomes important market research for Canada's learning and information technologies industry.

At this time, it must be concluded that there are no commonly accepted standards of excellence in distance learning in Canada. There is, however, a great deal of useful advice in both literature and practice specific to:

    quality assurance in education / training and the emerging consumer-orientation to education/training; and

    applications of technology in education / training;

    quality assurance in Internet information sources and education/training practices;

    excellence in distance education, distance learning and distance delivery of education/training.

This paper does not actually develop guidelines, but it identifies the building blocks and a participating constituency through which such guidelines could be developed in subsequent work, provide a recommended framework that reflects existing quality guidelines, and an extensive background paper documenting the current state of quality guidelines vis-à-vis learning technologies.

3. CONTRIBUTIONS FROM THE LITERATURE REVIEW

3.1. Quality Assurance In Education

Fundamental to an interest in the quality of learning technologies and distance education is an interest in the quality of education/training – an interest that is widely held and increasingly controversial.

In the context of products and services such as education/training, **quality** may be defined as:

> doing the job effectively and appropriately

> having the characteristics of being well thought out, prepared with care, implemented with responsibility; having a firm direction but flexible enough to cope with contextual variation, and being positively responsive to comment and criticism.[3]

An example of the definition of a quality educational experience, arrived at through stakeholder consensus, includes the following elements: the quality of learning materials, the availability of materials, support for students through well trained staff, a well managed system, monitoring and feedback mechanisms to improve the system.[4] Stated more succinctly, quality education is education that produces an independent learner.[5]

In short, there is a growing interest in the delivery of high quality education and training that meets, e.g.,

> the recommended national Training Standards[6] which include all elements of the learning system: inputs and resources, processes and practices, and outputs and outcomes

> the quality standards for education that is delivered transnationally, as set by Global Alliance for Transnational Education (GATE)[7]

> the seven principles for good practice in undergraduate education[8], i.e., good practice that:

>> 1. encourages contacts between students and faculty
>> 2. develops reciprocity and cooperation among students
>> 3. uses active learning techniques
>> 4. gives prompt feedback
>> 5. emphasizes time on task
>> 6. communicates high expectations
>> 7. respects diverse talents and ways of learning

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[3] From *Summary of Quality Issues in Distance Education* at http://www.lucent.com/cedl/sumqual.html

[4] From *Summary of Quality Issues in Distance Education* at http://www.lucent.com/cedl/sumqual.html; although the author doesn't say so, he could well have been referring to the CLFDB Training Standards.

[5] From an Australian study of quality in distance education, available at ericir.syr.edu

[6] Canadian Labour Force Development Board (1995), found at http://www.clfdb.org/

[7] *Notes from Transnational Education and the Quality Imperative* from GATE (Global Alliance for Transnational Education) at http://www.adec.edu/gate/page2.html

[8] Principles first published by the AAHE (American Association for Higher Education) in 1987, found at http://www.aahe.org/ehrmann.html

requirements for promoting lifelong learning,[9] i.e., education/training that:

> provides a systematic introduction to the field;
> offers a comparative or contextual framework for viewing the field of study;
> seeks to broaden the student and provide generic skills;
> offers some freedom of choice and flexibility in structure; and
> provides for the incremental development of self-directed learning.

> various other standards for education, e.g., curriculum, assessment procedures, evaluation practices.[10]

The literature on quality assurance in education and training is vast, and ranges over such topics as standards, national standards, quality assurance, accountability, effective schools, and so on. The focus has largely been on the provider's perspective; however, there are increasing demands from the public and from education/training consumers to be involved in describing and improving excellence in learning systems.

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[9] *Developing Lifelong Learners Through Undergraduate Education* (Candy, Crebert, and O'Leary, 1994) cited in *Issues of Teaching and Learning* (University of Western Australia) at http://www.acs.uwa.edu.au/csd/newsletter/issue0497/lifelong.html

[10] Examples include the following.
   Model Indicators of Program Quality for Adult Education Programs (Office of Vocational and Adult Education, US Department of Education, July 1992)
   GATE standards (at http://www.edugate.org/directory.html)
   Standards for international education from the Centre for Quality Assurance in International Education (CQAIE at http://www.cqaie.nche.edu/)
   Standards for student admissions from American Association of Collegiate Registrars and Admissions Officers (AACRAO at http://www.aacrao.com/)
   An annotated list of organizations concerned with developing education standards located at http://putwest.boces.org/Standards.html
   Standards for students learning to use technology at http://www.oetc.org/guide/gdln2.html
   Standards for assessment of students learning to use technology, at http://www.oetc.org/guide/gdln3.html
   Information literacy standards developed by the American Library Association, found at http://www.ala.org/aasl/stndsdrft5.html

3.2. Quality Assurance In The Uses Of Educational Technologies

Quality in the use of educational technologies is viewed from many different perspectives: (1) what learning technologies are touted to achieve; (2) quality assurance in the appropriate uses of technologies; and (3) issues of quality and the Internet.

3.2.1.Quality assurance in what educational technology could achieve

According to a 1996 paper[11] from the BC Ministry of Education, Skills and Training, entitled *The Status of Technology in the Education System: A Literature Review*, the potential of technology is to assist with such educational goals as:

Individualization
Increasing proficiency at accessing, evaluating, and communicating information
Increasing quantity and quality of students' thinking and writing
Improving students' ability to solve complex problems
Nurturing artistic expression
Increasing global awareness
Creating opportunities for students to do meaningful work
Providing access to high-level and high-interest courses
Making students feel comfortable with tools of the Information Age
Increasing the productivity and efficiency of schools

Similarly, Frayer and West (1997)[12] identify the following ways in which instructional technology can support learning, i.e., by:

1. Enabling active engagement in construction of knowledge
2. Making available real-world situations
3. Providing representations in multiple modalities (e.g., 3-D, auditory, graphic, text)
4. Drilling students on basic concepts to reach mastery
5. Facilitating collaborative activity among students
6. Seeing interconnections among concepts through hypertext
7. Learning to use the tools of scholarship
8. Simulating laboratory work

NCREL (North Central Regional Educational Laboratory – funded by the US government) has developed a "technology effectiveness framework"[13] which posits that the intersection of two continua – learning and technology performance – defines the effectiveness of a particular technology in student learning. The framework's horizontal axis is learning, which progresses from passive at the low end to engaged and sustained at the high end. The vertical axis is technology performance, which progresses from low to high. This framework, in Appendix B, could be make a significant contribution to quality assurance in the use of learning technologies.

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[11] Taken from *The Status of Technology in the Education System: A Literature Review* (Community Learning Network of the BC Ministry of Education, Skills, and Training: 1966), available at http://www.etc.bc.ca/lists/nuggets/EdTech_report.html

[12] *Creating a New World of Learning Possibilities Through Instructional Technology* found at http://sunsite.unc.edu/horizon/mono/CD/Instructional_Technology/Frayer.html

[13] *Technology Effectiveness Framework* found at http://www.ncrel.org/sdrs/edtalk/tef.htm

3.2.2.Quality assurance in the appropriate uses of technology

Technology has multiple uses in the context of education and learning, for example, information management (IT), learning management, distance delivery. Technology has the capacity, for example, to deliver better forms of student assessment, i.e., what the International Society for Technology in Education[14] calls "authentic testing" which involves the following factors:

> faithful representation of the contexts encountered in a field of study or in the real-life tests faced by adults
> engaging and important problems and questions
> non-routine and multistage tasks and real problems
> self-assessment
> trained assessor judgement
> the assessment of habits of mind and patterns of performance

The following list, developed by the Open University in the UK[15]   to differentiate between different media, helps to judge the various uses and appropriate uses of technology.

ease of use	- ease of use and avoidance of technical hitches
availability	- availability of teaching when needed
access	- access to other resources
questions	- opportunity to hear other students' questions
contacts	- contact with other teachers
experts	- opportunity to hear experts in the field
Acc/Exp	- opportunity to question experts
integration	- ease of integrating material with existing work
status	- improved status due to use of the medium
synergy	- synergy of medium with other projects

The categories for comparison[16] used are learners' needs, usage, effectiveness, perceived value, and comparative value.

In a more focused way, the four key characteristics of effective software – an particular component of learning technologies - may be presentability, accountability, customizability, and extensibility.[17] Quality of learnware is not a focus of this paper; however, considerable information is available.[18]

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[14] *Assessment: Information Technologies in the K-12 Curriculum*, a report from the International Society for Technology in Education (1996) at http://www.iste.org/specproj/roadahed/assess.html
[15] Found at www-iet.open.ac.uk/iet/PLUM/PerceivedBen
[16] Found at www-iet.open.ac.uk/iet/PLUM/Findings
[17] *The Future of Educational Technology* at http://sunsite.unc.edu/horizon/mono/CD/Instructional_Technology/Dawson.html
[18] *Learnware Quality Background Paper* (Barker, 1997) at http://www.yorku.ca/research/dkproj/etpnet

More information about quality assurance in education / learning technologies is available on the Internet.[19]

3.2.3. Quality assurance and the Internet

Increasingly, distance delivery of education/training incorporates uses of the Internet – both for information retrieval (distributed learning) and for on-line delivery of courses and programs (distance learning). While some educators view the use of the Internet and ICTs as being highly contentious, there have been considerable strides made in assuring the quality of Internet information sources and education/training practices.

3.2.3.1. Quality of Internet sources

The criteria for evaluating Internet information ranges from the simplistic to the highly complex. The following are examples of quality assurance efforts relative to information sources on the Internet.

At the simplistic end of the scale, according to the University of Wisconsin, the Ten C's for Evaluating Internet Resources[20] are:
1. Content
2. Credibility
3. Critical thinking
4. Copyright
5. Citation
6. Continuity
7. Censorship
8. Connectivity
9. Comparability
10. Context

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[19] Additional sources of information on the uses of technologies include the following.
    An extensive bibliography located in an article at
    http://www.ilt.columbia.edu/ilt/papers/ILTpedagogy.html
    The Field of Educational Technology: Update 1995 – A Dozen Frequently Asked Questions at
    http://ericir.syr.edu/ithome/digests/edtechnology.html
    Specific to planning, The National Center for Technology Planning – a clearinghouse for the exchange of many types of information related to technology planning – can be found at
    http://www.nctp.com/
    Guidebook for Developing an Effective Instructional Technology Plan is available from
    http://www2.msstate.edu/~lsa1/nctp/guide.html
    a Worldbank discussion paper, perhaps dated 1994, *Interactive Educational Technologies in Higher Education* at http://www.worldbank.org/thml/hcovp/educ/background/ietihe1.html

[20] At http://www.uwec.edu/Admin/Library/10cs.html

At the complex end of the scale, Wilkinson and others at the University of Georgia have developed a list including 11 criterion and 125 indicators in *Evaluating the Quality of Internet Information Sources: Consolidated Listing of Evaluation Criteria and Quality Indicators.*[21] They are:

> site access and usability (18 indicators)
> resource identification (13 indicators)
> author identification (9 indicators)
> authority of author (5 indicators)
> information structure and design (19 indicators)
> relevance and scope of content (6 indicators)
> validity of content (9 indicators)
> accuracy and balance of content (8 indicators)
> navigation within the document (12 indicators)
> quality of the links (13 indicators)
> aesthetic and affective aspects (13 indicators)

After conducting a study[22], the indicators of (1) information quality and (2) site quality were ranked in importance by experienced Internet users.

Somewhere in the middle, the Internet Public Library[23] uses the following selection policy for quality information sources, i.e., products / services which:

> are high in useful content, preferably those which provide information in their own right rather than simply providing pathways to information
> are updated consistently
> are designed is such a way that any graphics are an attractive complement to the information rather than a flashy distraction from it
> provide text-only interfaces for non-graphical browsers
> show evidence of having been proofread carefully
> contain only "live" links, only to documents which are as relevant as the primary document

Resources that are selected / approved by the IPL receive the IPL Ready Reference Seal.

According to J. Jakevicius at the Idaho State University, the following is a list of recurring criteria when Internet resource evaluation is considered[24]: content, authority, publisher-source, reference/awards, facts, documentation, bias, links and stability. At the University of Washington, J. Alexander and M. Tate adapted five traditional print evaluation criteria to web resources[25] in Appendix C. Possibly the most useful list of evaluation criteria, reproduced completely in Appendix D, was developed by A. Smith in New Zealand. Covering the same concepts is *the Library Selection Criteria for WWW Resources.*[26]

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[21] At http://itech1.coe.uga.edu/faculty/gwilkinson/criteria.html

[22] *Evaluating the Quality of Internet Information Sources: Quality Indicators as Ranked by Experienced Internet Users* is found at http://itech1.coe.uga.edu/faculty/wilkinson/rankings.html

[23] At http://www.ipl.org/ref/RR/Rabt.html

[24] *Internet Resource Evaluation Guidelines* found at http://www.isu.edu/departments/library/tutorials/neteval.htm

[25] At http://weber.u.washington.edu/~libr560/NETEVAL/criteria.html

[26] At www6.pilot.infi.net/~carolyn/criteria.html

Actual rating sheets for evaluating Internet sites have been produced by Teacher's CyberGuide,[27] and others. An online rating sheet[28] from From Now On includes the following criteria with definitions: reliability, accuracy, authority, currency, fairness, adequacy and efficiency.

3.2.3.2. Quality education practices on the Internet

Specific to education and training offered on the Internet, a variety of tools and standards have been created.

At the broadest level, the American Association for Higher Education has produced a *Bill of Rights and Responsibilities for The Electronic Community of Learners*[29] which sets out the rights and responsibilities of individuals, the rights and responsibilities of educational institutions (Appendix E).

Considerable advice is available to those who are creating web-based instructional programs, e.g.,

> *Anatomy of An On-line Course*,[30] including recommendations to include (1) access to chapter and project objectives and intended outcomes, teacher's lecture notes, course activities and assignments, answers to end-of-chapter questions; and (2) instructor assistance with problems, guidance and reminders of assignments and exam dates; and (3) the opportunity to share with other class members.

> *Online Education: New Paradigms for Learning and Teaching*,[31] including recommendations for attention to (1) creative use of technology; (2) sound instructional design; (3) integration of active learning; and (4) evidence of educational effectiveness.

> *Suggestions for Development of Online Courses,*[32] i.e., the items in a basic online course: course description, instructor section, syllabus, resources, lectures/notes, assignments, examinations, and on-line portfolios and grades.

Teachers considering Web-based instruction (WBI) are strongly encouraged to consider choice of pedagogy over choice of available technology, particularly when some research suggests that the use of technology to enable instruction conveys *no significant difference* in student achievement.[33] The Web has particular affordances that make it an appropriate instructional tool in *some* instances and has developed a model that looks at those dimensions of learning that are affected by the medium of the Web.[34] The instrument (Appendix H) invites evaluation of Web-based instruction along a continuum in each of ten dimensions described in the model. The resulting profile can help to direct the design of potential Web material, evaluate existing Web-based instruction or provide a means of comparing versions of Web-based and other instruction. One way of using the model is to identify which dimensions of interactive learning provided by the Web are to be included in WBI. Later the same model could be used to evaluate the degree

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[27] At http://www.cyberbee.com/guide1.html and at http://www.siec.k12.in.us/~west/edu/rubric1.htm and at fromnowon.org/jun97/eval.html
[28] At http://www.fromnowon.org/jun97/eval.html
[29] At http://www.luc.edu/infotech/sae/bill-of-rights.html
[30] Cooper (1999) at http://www.thejournal.com/magazine/current/feat01.html
[31] Kearsley (1998) at horizon.unc.edu/TS/vision/1998-09.asp
[32] Creating a Successful Virtual University (Eisler, Gardner, and Millner, 1998) at http://www.educause.edu/ir/library/html/cnc9839/cnc9839.html
[33] *A Model of the Effective Dimensions of Interactive Learning on the World Wide Web.* (Reeves, 1997) at http://itech1.coe.uga.edu/Faculty/treeves/WebPaper.pdf
[34] *The "No Significant Difference" Phenomenon* (4th ed.) (Russell, (Ed.), 1997). At http://tenb.mta.ca/phenom/.

that the objective of each dimension was accomplished. Finally, the dimensions identified in the model could help to inform one's own classroom teaching.[35]

Students selecting an Online K-12 course are encouraged to ask the following questions:[36]
1. Why am I interested in a web-based course?
2. Do I work well on my own, or do I need guidance and supervision?
3. Do I need a course offered by an accredited, degree-granting educational institution (high school, community college, or university)?
4. Is the instructor qualified to teach an online course?
5. Do I need to take a course for credit?
6. How does the educational institution assess online work? Does it assess participation in online discussions and group projects and how might the assessment contribute to continuous learning and feedback?
7. Are the course offerings diverse and interesting?
8. Do I need a few courses or a complete high school curriculum?
9. What do former students think?
10. How do I find an online course?

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[35] *WBI or Not WBI?* (University of Western Australia newsletter *Issues of Teaching and Learning*) at http://www.acs.uwa.edu.au/csd/newsletter/issue0798/dimensions.html
[36] How to Select an Online K-12 (WestEd, 1998) at http://www.wested.org/tie/dlrn/dlrn-j4.html

3.3. Quality Assurance In Distance Education / Distance Learning

Distance learning can be used for many purposes, i.e., for formal education, continuing education, advanced professional education and management/employee development.   Advocates for distance learning[37] claim that it makes learning and training more accessible, more convenient, more effective and more cost-efficient for the learners and for the education provider.

The environment for distance learning is characterized as one in which remote students have special needs[38] including: advising needs, access needs, communication needs, and administrative needs. In the traditional context – distance education delivered by traditional learning organizations for course / program credit -- these needs should be met through appropriate institutional support structures. This means that providers of distance learning must help consumers to:
> take greater responsibility for their own learning;
> become more active in asking questions and obtaining help;
> be prepared to deal with technical difficulties in the two-way flow of information.

To develop independent and self-reliant distance learners, research[39] indicates that the following three approaches are commonly advocated:

1) the service model approach which focuses on the integration of quality, by providers, into distance delivery and courseware through, e.g.,
> quality assurance methods in courses and curricula
> high quality support services
> integration of the study of communication itself into the curriculum
> the TQM model of consumer-oriented quality in methods and materials

2) a stakeholder analysis model which focuses on defining quality for distance education, i.e., involving more than the learning providers in the defining quality and setting benchmarks

3) a quality improvement model which involves ongoing evaluation, e.g.,
> qualitative assessment techniques to understand stakeholder values
> quantitative evaluation to provide indicators of quality and areas of concern

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[37] For example, Lucent Technologies' Centre for Excellence in Distance Learning; from *Distance Learning – The Vision* at http://www.lucent.com/cedl/disolut.html

[38] *Needs of Distance Learners* at http://www.lucent.com/cedl/needs.html

[39] Reported in *Summary of Quality Issues in Distance Education* at http://www.lucent.com/cedl/sumqual.html

In building a service approach to distance education programs, Fulkerth[40] from the Golden State University recommends that courses:

> be flexible, nimble and asynchronous;
> blend traditional education and applied technology skills;
> integrate institutional services and activities into the delivery environment (e.g., registration, payment, advising, tutorial assistance, library services); and
> incorporate personalized, high-touch access to services, instructors, and classmates.

According to Seligman[41], the five elements of quality, specifically for the improvement of quality in distance, are:

1. materials that are learner friendly, academically respectable, able to be used by the average student, interesting in content and layout, and relevant;

2. learning materials and any peripheral media or equipment that are readily available;

3. tutors and students that become familiar with distance learning methodology and practice;

4. the whole system that is managed effectively; and

5. monitoring, evaluation, and feedback that are viewed as important.

Consumers of education and training products and services have a vast array of choices – choices that vary in quality and appropriateness to the individual. In order to make an informed choice, various consumer's guides have been created. The following are examples.

> Both in a text in the Kaplan series and on-line, a brief self-quiz helps individuals determine they are good candidates for on-line distance learning.[42]

> In a book published by The Western Cooperative for Educational Telecommunications, questions are set out for the individual to ask (Appendix F).

> In her book, Porter (1997) sets out a checklist for evaluating distance learning courses: *Determining the Suitability of Distance Learning Courses* (Appendix G).

All of these statements of values can be construed as criteria for evaluation or quality assessment. In summation, these research findings and advice from the field constitute a form of comparative standards and make a substantial contribution to our understanding of excellence in distance learning. In some jurisdictions – the US and the Commonwealth – agencies have taken this one step further to develop standards of excellence for distance education.

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[40] *A Bridge For Distance Education: Planning for the Information-Age Student* (Fulkerth, 1998) at http://www.syllabus.com/nov98_magfea.html

[41] *The Comparative Nature of Quality: Distance Education in the Developing World* (Seligman, 1992), available from ERIC ericir.syr.edu

[42] *Guide To Distance Learning: Graduate Education That Comes To Your Home.* (Miller and Schlosberg, 1997). Interactive self-quiz *Are Telecourses for You?* in the text and online at http://rs.realeducation.com/student/index_student.asp?action=why_online&subaction=question

4. EXISTING STANDARDS OF EXCELLENCE IN DISTANCE LEARNING

4.1. The Western Interstate Commission for Higher Education's (WICHE) Principles of Good Practice for Electronically Offered Academic Degree and Certificate Programs[43]

PREAMBLE

These principles are the product of a Western Cooperative for Educational Telecommunications Project, "Balancing Quality and Access: Reducing State Policy Barriers to Electronically Delivered Higher Education Programs."

The three-year project, supported by the US Department of Education's Fund for the Improvement of Postsecondary Education, is designed to foster an interstate environment that encourages the electronic provision of quality higher education programs across state lines. The principles have been developed by a group representing the Western states higher education regulating agencies, higher education institutions, and the regional accrediting community.

Recognizing that the context for learning in our society is undergoing profound changes, those charged with developing the principles have tried not to tie them to or compare them to traditional campus structures. The principles are also designed to be sufficiently flexible that institutions offering a range of programs – from graduate degree to certificates – will find them useful.

Several assumptions form the basis for these principles:

> The electronically offered program is provided by or through an institution that is accredited by a nationally recognized accrediting body.

> The institution's programs holding specialized accreditation meet the same requirements when offered electronically.

> The institution may be a traditional higher education institution, a consortium of such institutions, or another type of organization or entity.

> The principles address programs rather than individual courses.

> It is the institution's responsibility to review educational programs it provides via technology in terms of its own internal definitions of these principles.

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[43] Taken directly from Jones, G.R. (1997). *Cyberschools: An education renaissance.* Englewood, CO: Jones Digital Century Inc. – who cites Johnstone, S.M. and Krauth, B. (March-April 1996). *Some Principles of Good Practice for the Virtual University,* **Change**, p. 40. Available on the WICHE web site at http://www.wiche.edu/Telecom/projects/principles.html

PRINCIPLES

Curriculum and Instruction

1. Each electronically offered program of study results in learning outcomes appropriate to the rigor and breadth of the degree or certificate awarded.

2. An electronically offered degree or certificate program is coherent and complete.

3. The program provides for appropriate real-time or delayed interaction between faculty and students and among students.

4. Qualified faculty provide appropriate oversight of the program electronically offered.

Institutional Context and Commitment to Role and Mission

5. The program is consistent with the institution's role and mission.

6. Review and approval processes ensure the appropriateness of the technology being used to meet the program's objectives.

Faculty Support

7. The program provides faculty support services specifically related to teaching via an electronic system.

8. The program provides training for faculty who teach via the use of technology.

Resources for Learning

9. The program ensures appropriate learning resources are available to students.

Students and Student Services

10. The program provides students with clear, complete, and timely information on the curriculum, course and degree requirements, nature of faculty/student interaction, assumptions about technological competence and skills, technical equipment requirements, availability of academic support services and financial aid resources, and costs and payment policies.

11. The enrolled students have reasonable and adequate access to the range of student services appropriate to support their learning. That accepted students have the background, knowledge, and technical skills needed to undertake the program.

12. Advertising, recruiting, and admissions materials clearly and accurately represent the program and services available.

Commitment to Support

13. Policies for faculty evaluation include appropriate consideration of teaching and scholarly activities related to electronically offered programs.

14. The institution demonstrates a commitment to ongoing support, both financial and technical, and to continuation of the program for a period sufficient to enable students to complete a degree / certificate.

Evaluation and Assessment

15. The institution evaluates the program's educational effectiveness, including assessments of student learning outcomes, student retention, and student and faculty satisfaction.

16. Students have access to such program evaluation data.

17. The institution provides for assessment and documentation of student achievement in each course and at completion of the program.

4.2. The American Council on Education, Center for Adult Learning and Educational Credentials' Guiding Principles for Distance Learning in a Learning Society

PREAMBLE

The following is a complete text of the American Council on Education's guiding principles including a statement of core values, released as a draft in May 1996.[44]

CORE VALUES

These principles assume that the practice of distance learning contributes to the larger social mission of education and training in a democratic society. With that in mind, the principles reflect the following tenets and values:

Learning is a lifelong process, important to successful participation in the social, cultural, civic, and economic life of a democratic society.

Lifelong learning involves the development of a range of learning skills and behaviors that should be explicit outcomes of learning activities.

The diversity of learners, learning needs, learning context, and modes of learning must be recognized if the learning activities are to achieve their goals.

All members of society have the right to access learning opportunities that provide the means for effective participation in society.

Participation in a learning society involves both rights and responsibilities for learners, providers, and those charged with the oversight of learning.

Because learning is social and sensitive to context, learning experiences should support interaction and the development of learning communities, whether social, public, or professional.

The development of a learning society may require significant changes in the roles, responsibilities, and activities of provider organizations and personnel as well as of the learners themselves.

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[44] Taken directly from Jones, G.R. (1997). *Cyberschools: An education renaissance.* Englewood, CO: Jones Digital Century Inc. – who cites Sullivan, E., and Rocco, T (co-chairs, Task Force on Distance Learning) (draft: May 1996). *Guiding Principles for Distance Learning in a Learning Society,* p. 3-5.

PRINCIPLES

1. Distance learning activities are designed to fit the specific context for learning.

    a. Learning opportunities include a clear statement of intended learning outcomes, learning content that is appropriate to those outcomes, clear expectations of learner activities, flexible opportunities for interactions, and assessment methods appropriate to the activities and technologies.

    b. Elements of a learning event – the learning content, instructional methods, technologies, and context – complement each other.

    c. 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.

    d. Learning activities and modes of assessment are responsible to the learning needs of individual learners.

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

    f. Learning outcomes address both content mastery and increased learning skills.

    g. Individuals with specialized skills in content, instructional methods, or technologies work collaboratively as a design team to create learning opportunities.

    h. The learning design is evaluated on a regular basis for effectiveness, with findings utilized as a basis for improvement.

2. Distance learning opportunities are effectively supported for learners through fully accessible modes of delivery and resources.

    a. The providing organization 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.

    b. The provider considers the needs for learner support in relation to the distance 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.

    c. Access to support services – such as scheduling, registration, and record keeping – is convenient, efficient, and responsive to diverse learners as well as consistent with other elements of the delivery system.

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

e. The provider 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.

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

3. Distance learning initiatives must be backed by an organizational commitment to quality and effectiveness in all aspects of the learning environment.

a. Involvement in distance learning is consistent with the overall mission of the provider; policies regarding distance learning are integrated into the provider's overall policy framework.

b. The providing organization makes a financial and administrative commitment to maintain distance learning programs through completion and to support faculty and learner services needed to ensure an effective learning environment.

c. Administrative and support systems (registration, advising, assessment, etc.) are compatible with the learning delivery system to ensure a coherent learning environment.

d. The organization's curricular and administrative policies incorporate the needs of distance learning as well as traditional learning activities.

e. The provider makes a commitment to research and development of distance learning, maintaining a systematic evaluation of the content, processes, and support systems involved in its distance learning activities.

f. The provider makes a concomitant investment of resources and effort in professional development and support of both faculty and staff involved in distance learning.

g. The providing organization recognizes effective participation in distance learning in its promotion and reward system for faculty and staff and ensures that its policies regarding promotion, tenure (if applicable), and departmental / program funding reflect the integration of distance learning into the organization's mission.

h. The policies, management practices, learning design process, and operational procedures for distance learning are regularly evaluated to ensure effectiveness and currency.

i. The provider does not distinguish between learning accomplished at a distance and learning accomplished through other means in recognizing learner achievement.

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

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

   b. Intended learning outcomes are described in observable, measurable, and achievable terms.

   c. The learning design is consistent with and shaped to achieve the intended learning outcomes.

   d. Distance education media and delivery systems are used in a way that facilitates achievement of intended learning outcomes.

   e. Learning outcomes are assessed in a way relevant to the content, the learner's situation, and the distance education delivery system.

   f. Assessment of learning is timely, appropriate, and responsive to the needs of the learner.

   g. Intended learning outcomes are reviewed regularly to assure their clarity, utility, and appropriateness for the learners.

5. The provider has a plan and infrastructure for using technology that support its learning goals and activities.

   a. The technology plan defines the technical requirement and compatibility needed to support the learning activity.

   b. The technology plan addresses system security to assure the integrity and validity of information shared in the learning activities.

   c. The technology facilitates interactivity among all elements of a learning environment and places a high value on ease of use by learners.

   d. The technology selected for distance learning is fully accessible and understandable to learners and has the power necessary to support its intended use.

   e. Providers communicate the purpose of the technologies used for learning and, through training, assist learner, 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.

   f. The technology infrastructure meets the needs of both learners and learning facilitators for presenting information, interacting within the learning community, and gaining access to learning resources.

4.3. Guidelines For Remote Delivery Of Courses Developed By The Commonwealth Of Learning

PREAMBLE

The Commonwealth of Learning has developed two sets of guidelines related to the "remote delivery of distance education courses and programs" — one for students and one for institutions. According to the COL[45], the guidelines have two primary objectives:

> to assist students in making decisions about enrolling in courses that are increasingly being delivered by institutions outside the jurisdictions they were established to serve, and

> to assist institutions themselves in collaborating over the development and delivery of such courses.

The recognition of the need for, and subsequent development of, the guidelines grew from discussions with institutions that provide distance education courses as well as from consultations with the International Council for Distance Education and regional distance education associations.

GUIDE TO INSTITUTIONAL RESPONSIBILITIES

This guide attempts to divide institutional responsibilities into two categories, those to students and, where appropriate, those to partner institutions.

Responsibilities to Students

(a) Responsible marketing and student recruitment practices with particular reference to the provision of accurate and comprehensive information in at least the areas covered by the questions in the student guide (below). Every effort would be made to ensure access to all distance education students, regardless of such factors as gender, ethnicity, age or physical disabilities.

(b) Course development, review and revision process that is adequate to maintain quality assurance and ensure that courses are culturally sensitive and appropriate for the students to whom they are made available and that they have access to the materials needed to achieve their course goals and objectives.

(c) Provision of appropriate support for enrolled students in areas such as advising, instruction, scheduled evaluation and assessment, examination and protection of student privacy.

(d) Where courses involve computer mediated instruction, clarity about the rights of both students and institutions to materials produced by students.

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[45] At http://www.col.org/

(e) An assurance that students will be able to complete programs once they have begun and that changes shall not disadvantage students.

(f) Confidentiality of information provided to institutions by students.

(g) Provision of appropriate faculty and staff training and continuing professional development in the use of electronic systems for materials development and delivery, and for student support.

GUIDE FOR STUDENTS

The purpose of this guide is to provide guidance and assistance to students thinking of enrolling in distance education courses offered by institutions that are remote from the region in which they live. These will sometimes be offered through or with validation provided by
a local institution in which case the answers to the questions that follow should be easy to obtain or provided in a locally available package of material. In the case of courses offered, for example, through the Internet, however, this may not be the case.

In either case, students should be made aware that their first recourse should be their local, accredited institution as the most likely source of much of the information they need and as the most convenient source for verifying the information provided. The student shall be responsible for requesting this information and raising questions in a timely manner appropriate to the guidelines of the local institution. This information can be obtained by asking the following questions:

1) What is the content and design of the course? For example, is a course outline available giving detailed information on such matters as entry requirements, length, level, contents and assessment scheme for a course?

2) What institutional regulations affect enrolment in and completion of the course? For example, what regulations exist with respect to such matters as breaks of study, workload requirements, extensions, plagiarism, grade appeals, etc?

3) (a) How current is the content of the course? Has it been recently revised to take account of changes in the subject?

   (b) How relevant is the course to the student's goals?

4) What credit does the course carry? This question has three primary aspects:

   (a) How many credit points does it carry at the provider institution?

   (b) How does this credit apply to programs within the provider institution?

   (c) Does the course carry transfer credit to programs at other institutions?

      Students should note that questions (b) and (c) frequently apply to courses not carrying credit towards a credential as well as those carrying formal credit.

5) What support is provided to students who enroll in the course? This involves students access in the following areas:

   a) Support at the local institution such as tuition, assessment, tutorials, counseling, etc.;

   b) Support offered in conjunction with the local institution such as study centres, telecentres, computer facilities, student representative organizations, etc.;

   c) Support from external sources such as local libraries, private tutors, etc.

6) What are the mechanics of gaining access to the course and to the support provided? This question covers the all-important question of cost to students. For example:

   a) What are the direct and indirect costs of the course?

   b) What equipment (e.g. computers) is required for the course?

   c) If computers are required, are students responsible for line charges?

   d) Is required equipment rentable/purchasable from the provider institution?

   Other questions include:

   e) By what means do students communicate with their tutors or with other students?

   f) By what means do students gain access to research resources and other forms of support?

7) What provision, with or without fee and/or equipment rental refund, is there for withdrawal from the course?

The above questions do not necessarily provide a comprehensive view of what a student should know about a course in which he/she wishes to enroll but rather a series of guidelines to enable students to make informed decisions about such courses.

5. Selected References

Connick, G. (Ed.) (1999). *The Distance Learner's Guide.* Upper Saddle River, NJ: Prentice Hall. (a publication of the Western Cooperative for Educational Telecommunications, with a companion web site at http://www.prenhall.com/dlguide)

Kearsley, G. (August 1998) *Online Education: New Paradigms For Learning And Teaching.* horizon.unc.edu/TS/vision/1998-08.asp

Miller, I. and Schlosberg, J. (1997). *Guide To Distance Learning: Graduate Education That Comes To Your Home.* New York: Kaplan Books, Simon and Shuster. (with interactive self-quiz *Are Telecourses for You?* in the text and online at http://rs.realeducation.com/student/index_student.asp?action=why_online&subaction=question

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Porter, L. (1997). *Creating The Virtual Classroom: Distance Learning With The Internet.* Toronto: John Wiley & Sons, Inc.

Western Cooperative for Educational Telecommunications. (1998). *Distance Education: A Consumer's Guide.* wiche.edu/Telecom/conguide/index.htm

<u>Additional Resources</u>

Quality and Standards in Distance Education: Report to the 1992 Distance Education Conference (Australian: available through ERIC http://www.ericir.syr.edu/)

Student Support as a Factor Affecting the Quality of Australian Distance Education: The Findings of the Project to Investigate Quality and Standards in Distance Education (available through ERIC)

A Question of Quality (available through ERIC)

Effectiveness of Distance Learning Courses – Student's Perceptions (http://www.ssu.misouri.edu/AgEd/NAERM/s-a-4.html

a list of 40 journals in distance education found at www-icdl.open.ac.uk/info/journals.html

a list of distance learning guides, organizations, and research with URLs at http://www.mcrel.org/connect/disted.html

Nortel's (1997) Interactive Distance Learning Vendor Selection Checklist, available from Knowledge Connection Corporation

Distance education web sites

Distance Education Clearinghouse http://www.uwex.edu/disted/home.html
Distance Education General Resources http://nova.umuc.edu/~erubin/de-gen.html
Distance Education Resources http://www.ola.bc.ca/ola/library/inetres/disted.html
Distance Learning Resources http://tenb.mta.ca/teleedds.html
Dr. E's Eclectic Compendium of Electronic Resources for Adult/Distance Education
http://www.oak-ridge.com/ierdrep1.html

Appendix A

Terminology

1. Distance learning / distance education

Distance education[46] is a teaching / learning environment characterized by
> the separation of teacher and learner during at least the majority of the instructional process;
> the influence of an educational organization, including some form of student evaluation; and
> the use of educational media and technologies to unite teacher and learner, to carry course content and provide two-way interaction.

Distance learning is defined as a system and a process of connecting learners with distributed learning resources.[47] Distance learning and distance education are terms that are often used synonymously, although the former focuses on the learner and the latter on the provider.

In **distance learning**, *students* can be anywhere and a teacher will reach them to transmit knowledge in traditional ways, which commonly means lecturing with one- or two-way video and audio transmitted by phone line, cable TV, or satellite. In **distributed learning**, *information* can be anywhere and the teacher and students can find and use it to create and transmit knowledge in non-traditional ways.[48]

2. Instructional technology and educational technology

According to the Association for Educational Communications and Technology (AECT), **instructional technology**[49] is defined as the theory and practice of design, development, utilization, management, and evaluation of processes and resources for learning.

Educational technology[50] includes a wide range of systems for developing and delivering instruction and for administering the learning process. Educational technology encompasses:

hardware (from the low- to high-tech spectrum, e.g., television sets, satellite dishes, computers, compact disk interactive equipment, audioconferencing terminals, video projectors); and

design tools (such a computer programs, simulations, video programs, written materials and their instructional design); as well as

the setting in which it takes place (e.g., on-campus: a classroom, a laboratory or a learning centre; off-campus: a learning centre in a company or in a public facility; at

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[46] Definition used by the Council of Ministers of Education, Canada; found in *Distance Education and Open Learning: A Report* (CMEC, 1994)

[47] Definition used by A. Chute, Chief Learning Strategist of Lucent Technologies, Centre for Excellence in Distance Learning

[48] *The Shroud of Lecturing.* (DeLong, 1997) at http://www.firstmonday.dk/issues/issue2_5/delong/index.html

[49] Ely, D. (1995) *The Field of Educational Technology: A Dozen Frequently Asked Questions* is found at http://ericir.syr.edu/ithome/digests/edtechnology.html

[50] Definition used by the CMEC (1994)

the workstation, or at home; through distance education; by individual learning or learning in groups);

courseware, which might cover the full content of a course, or support lectures with drill-and-practice exercises, or provide technical updates, or impart basic skills, or technical skills, or "soft" skills;

administrative support systems, ranging from test items that are embedded in drill-and-practice exercises to student information systems that track learners' overall progress; and

information and communications networks that might link colleges among each other or that might link different departments and functions within a college.

Multimedia[51] is the capability to process various types of media – i.e., text, graphics, still images, animation, video, and special effects – on the same computer at the same time.

Multiple mode or multi-mode[52] refers to the use of technologies such as print, audio cassettes, e-mail, audio, audiographic and/or videoconferencing and/or broadcast television in combination and in physically different formats.

Open learning[53] is particularly characterized
       by the removal of restrictions, exclusions and privileges;
       by the accreditation of students' previous experience;
       by the flexibility of the management of the time variable; and
       by substantial changes in the traditional relationships between professors and students.

User tools [54]are standard software applications that the student might use in the educational context, such as spreadsheets, text editors, or graphing tools.

Instructional agents[55] are software modules able to provide guidance to students using user tools in pursuit of some educational goal.   A **communication protocol** supports communication between instructional agents and user tools

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[51] Definition used by the CMEC (1994)
[52] Definition used by the CMEC (1994)
[53] Definition used by the CMEC (1994)
[54] Definition used by the IIIE (1997)
[55] Definition used by the IIIE (1997)

Asynchronous: Communication in which interaction between parties does not take place simultaneously**. Synchronous:** Communication in which interaction between participants is simultaneous. [56]

3. Computers and learning

Computer Assisted Instruction (CAI) - uses the computer as a self-contained teaching machine to present discrete lessons to achieve specific but limited educational objectives. There are several CAI modes, including: drill and practice, tutorial, simulations and games, and problem-solving.

Computer Managed Instruction (CMI) - uses the computer's branching, storage, and retrieval capabilities to organize instruction and track student records and progress. The instruction need not be delivered via computer, although often CAI (the instructional component) is combined with CMI.

Computer Mediated Communication (CMC)- describes computer applications that facilitate communication. Examples include electronic mail, computer conferencing, and electronic bulletin boards.

Computer-Based Multimedia- HyperCard, hypermedia, and a still-developing generation of powerful, sophisticated, and flexible computing tools have gained the attention of distance educators in recent years. The goal of computer-based multimedia is to integrate various voice, video, and computer technologies into a single, easily accessible delivery system.

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[56] *Distance Education at a Glance* (University of Idaho) at http://www.uidaho.edu/evo/dist14.html

Appendix B

The NCREL Technology Effectiveness Framework
Reproduced from http://www.ncrel.org/sdrs/edtalk/tef.htm

Now that we have meaningful and appropriate indicators for engaged learning and for high technology performance, we can use them to measure the extent to which individual technologies and technology-enhanced programs are effective - that is, the extent to which they support engaged learning.

To this end, we (NCREL) have developed the *technology effectiveness framework*. This framework posits that the intersection of two continua - learning and technology performance - defines the effectiveness of a particular technology in student learning. The framework's horizontal axis is *learning*, which progresses from passive at the low end of the continuum to engaged and sustained at the high end. The vertical axis is *technology performance*, which progresses from low to high. (This is illustrated in Table 3 which was not electronically reproducible)

When we cross the two continua, four major learning and technology patterns emerge:
Pattern A - Engaged learning and high technology performance
Pattern B - Engaged learning and low technology performance
Pattern C - Passive learning and high technology performance
Pattern D - Passive learning and low technology performance

How to use the framework
The framework gives educators, researchers, and policymakers a way to evaluate technology and technology-enhanced programs and curricula against the *learning goals* they have for their student. Before doing so, however, these decision makers need to *define* their learning goals. That's where the trajectories for change come in.

Directions for Change
The framework encompasses four positive (desirable) directions for change:

Type I trajectory: D - B. This is movement *from* passive learning and low technology performance *to* engaged learning and low technology performance.

Type II trajectory: B - A. This is movement *from* engaged learning and low technology performance *to* engaged learning and high technology performance.

Type III trajectory: C - A. This is movement *from* passive learning and high technology performance *to* engaged learning and high technology performance.

Type IV trajectory: D - A. This is movement *from* passive learning and low technology performance *to* engaged learning and high technology performance.

It is obviously counterproductive to move from D (passive learning with the least functional technologies) to C (passive learning with more functional, and more costly, technologies). If a school or group is not using technology to enhance engaged learning, there is little reason to pay the higher cost for greater functionality.

Once the school or school district establishes its curricular goals, the trajectories can guide it in determining what technologies can move learners toward these goals.

This framework provides a powerful matrix for analyzing particular technologies and programs in broad terms. Decision makers can use it as they select and work toward specific curricular goals to promote engaged learning. Researchers, curriculum developers, and staff developers can use the framework to design technologies and technology-enhanced programs. And schools can use the framework to evaluate technology and its costs. In doing so, the critical questions are:

- What are the learning goals (i.e., the vision of learning) to which technology is applied?

- How are these learning goals moving the school toward reform?

- How will a technology-enhanced curriculum support instruction that addresses those learning goals?

- Does the technology-enhanced approach help restructure the school to meet its plan for educational reform?

- Do the students achieve the learning goals using the technology-enhanced curriculum?

- Can the school implement cost-efficient technologies given its goals and current realities?

- Can the school extend or adapt less functional technologies so that they are more functional in supporting a global community of learners in sustained learning that is challenging and authentic?

- Are there funding strategies or partnerships that can reduce the cost?

- How can a school continuously plan to use technology to reach for more powerful learning goals and reform?

Print Evaluation Criteria

The material on this page was created by Jan Alexander and Marsha Tate, Reference Librarians at Wolfgram Memorial Library, Widener University, Chester, PA.

Review of the Five Traditional Print Evaluation Criteria
- A. Criterion #1: Accuracy
   1. How reliable and free from error is the information?
   2. Are there editors and fact checkers?
- B. Criterion #2: Authority
   1. What are the author's qualifications for writing on this subject?
   2. How reputable is the publisher?
- C. Criterion #3: Objectivity
   1. Is the information presented with a minimum of bias?
   2. To what extent is the information trying to sway the opinion of the audience?
- D. Criterion #4: Currency
   1. Is the content of the work up-to-date?
   2. Is the publication date clearly labeled?
- E. Criterion #5: Coverage
   1. What topics are included in the work?
   2. Are the topics included explored in depth?

Adapting Five Traditional Print Evaluation Criteria to Web Resources
- A. Criterion #1: Accuracy of Web Resources
   1. Almost anyone can publish on the Web
   2. Many Web resources not verified by editors and/or fact checkers
   3. Web Standards to ensure accuracy yet to be fully developed
- B. Criterion #2: Authority of Web Resources
   1. Often difficult to determine authorship of Web Sources
   2. If author's name is listed, his/her qualifications frequently absent
   3. Publisher responsibility often not indicated
- C. Criterion #3: Objectivity of Web Resources
   1. Goals/aims of persons or groups presenting material often not clearly stated
   2. Web often functions as a "virtual soapbox"
- D. Criterion #4: Currency of Web Resources
   1. Dates not always included on Web pages
   2. If included, a date may have various meanings:
       a. Date information first written
       b. Date information placed on Web
       c. Date information last revised
- E. Criterion #5: Coverage of Web Resources
   1. Web coverage may differ from print coverage
   2. Often hard to determine extent of Web coverage

Appendix D

Criteria for Evaluating Internet Information[57]

The following set of criteria for evaluating internet information resources was developed by A. Smith (1997) in the context of the librarians task of evaluating, selecting and recommending information resources.   Smith's "toolbox of criteria," listed below, may be most relevant to the content side of learnware (as opposed to the process side). According to Smith, not all criteria apply to all resources and librarians would choose criteria from the toolbox. Criteria for evaluating Internet information resources are the following.

1. Scope

What items are included in the resource? Is the scope only implied, or is it stated through metainformation such as an introduction? Does the actual scope of the resource match expectations? Aspects of the scope include:

> Breadth: What aspects of the subject are covered? Is the resource focused on a narrow area or does it include related topics?
>
> Depth: What is the level of detail provided about the subject? This is related to the level of audience for which the resource has been designed, mentioned below.
>
> Time: Is the information in the resource limited to certain time periods?
>
> Format: A resource that provides links may restrict its scope to certain classes of resources. For example, Telnet, Gopher, or FTP (File Transfer Protocol) resources may be excluded from an WWW-oriented site.

2. Content

Is the information fact or opinion? Does the site contain original information or simply links? Sites can be useful both as information resources in themselves and as links to other information. However, users can be frustrated by lists of resources which look promising, but turn out to simply contain more links.

Does the resource stand alone, or has it been abstracted from another source, perhaps losing meaning or links in the process?

Specific factors related to the content include the accuracy, authority, currency, and uniqueness of a resource.

2.1. Accuracy

Is the information in the resource accurate? A resource may be checked against other resources or against information that the evaluator has.

Are there political, ideological, or other biases? The Internet has become a prime marketing and advertising tool, and it is advisable to ask what motivation the author has for placing this information on the Net. Frequently, the answer is that the information is placed to advertise, or to support a particular point of view.

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[57] Reproduced from http://info.lib.uh.edu/pr/v8/n3/smit8n3.html

2.2. Authority

Does the resource have some reputable organization or expert behind it? Does the author have standing in the field? Are sources of information stated? Is the information verifiable? Can the author be contacted for clarification or to be informed of new information?

2.3. Currency

Is the resource updated or static? If it is updated, how frequently does this occur? Are dates of update stated, and do these correspond to the information in the resource? Does the organization or person hosting the resource appear to have a commitment to its ongoing maintenance and stability?

The date stamping of files, which can be determined by many browsers, indicates the date of change in the physical file; this may not reflect the currency of the information.

2.4. Uniqueness

Is the content of the resource available in other forms (at other sites, on a Gopher, in print, on CD-ROM)? What advantages does this particular resource have? If the resource is derived from another format, does it have all the features of the original? Have extra features been added? Does it complement another resource, for example, by providing updates to a printed source?

On the Internet, a resource may be available from a number of different sources. For example, the World Fact Book is available widely at various locations, in different editions, and in FTP, Gopher, and HTML formats. This kind of redundancy may be valuable--a particular site may not be available when required, and an alternative or mirror site may have to be used. Some users may not be able to access certain types of resources; for example Telnet or image-based Web sites, so the availability of alternative formats may be useful.

2.5. Links Made to Other Resources

If the value of the site lies in its links to other resources, are the links kept up to date, and made to appropriate resources? Are the links made in such a way that it is clear that an external site is being referred to? There are potential copyright issues with sites that, for instance, enclose an external link in frames so that the source of the information is unclear.

2.6. Quality of Writing

Is the text well written? While hypertext linking and multimedia are important elements of the Web, the bulk of the information content on the Web still lies in text, and quality of writing is important for the content to be communicated clearly.

3. Graphic and Multimedia Design

Is the resource interesting to look at? Do the visual effects enhance the resource, distract from the content, or substitute for content? If audio, video, virtual reality modeling, or other effects are used, are they appropriate to the purpose of the source? A related criterion is navigational design, mentioned below in the context of browsability and organization.

4. Purpose and Audience

What is the purpose of the resource? Is it clearly stated? Does the resource fulfill the stated purpose? The purpose needs to fit the intended audience for the resource. Who are the intended users of this resource? At what level is the resource pitched: toward a subject expert, a layperson, or a student? Will the resource satisfy the needs of the intended users? Does the user group at which the site is aimed have the connectivity to access the resource?

5. Reviews

What do reviewing services say about the site? The use of reviewing journals has been a mainstay of the development of printed collections; librarians in the Internet environment will need to become familiar with the strengths and weaknesses of the tools reviewing Internet resources.

6. Workability

Is the resource convenient, and can it be used effectively? This is the area where criteria for Internet resources differ most from print sources. An issue in providing access to electronic documents is whether a library should provide links to the originating site or "acquire" the publication for local access. Poor workability may indicate that the library should store the data locally, if intellectual property considerations allow this. Aspects of workability fall into a variety of areas.

6.1. User Friendliness

Is the resource easy to use? Are any necessary special commands clear? Is help information available? Have user interface issues been addressed, such as menu design and readability of screens?

6.2. Required Computing Environment

Can the resource be accessed with standard equipment and software, or are there special software, password, or network requirements? Has the resource been designed to work well with one software and user interface (for example, the latest Netscape release on a T1 connection)? Is it difficult to use with others (for example, Lynx at 2400 bits per second)? It is useful to test resources with a variety of browsers and connections. Telnet resources may pose problems to users who have not installed a Telnet client. Images and other multimedia may create problems if users have not installed the correct helper application.

While the extent to which older browsers are currently used is a source of argument, there are still Lynx-only, frames-challenged, and visually impaired users, and sites should attempt to meet their needs. This criterion is less important where users are in a defined computing environment, such as that provided by workstations in a particular library.

6.3. Searching

How effectively can information be retrieved from the resource? Is a useful search engine provided? What operators and ranking features are available? Is use of the search engine interface intuitive? Does the search engine index the whole resource?

6.4. Browsability and Organization

Is the resource organized in a logical manner to facilitate the location of information? Is the organizational scheme appropriate (e.g., chronological for a historical source or geographical for a regional resource)?

6.5. Interactivity

Where interactive features such as forms and CGI (Common Gateway Interface) scripts are provided, do they work? Do they add value to the site?

6.6. Connectivity

Can the resource be accessed reliably, or is it frequently overloaded or offline? Is the connection one of limited bandwidth, so that pages take a long time to load or keystrokes a long time to echo? Is a local mirror site available, or do international traffic charges have to be incurred?

7. Cost

Currently, Internet information resources are perceived as being free. However, costs do exist, and they are likely to become more important. Costs can be divided into: (1) costs of connecting to the resource, and (2) costs associated with the use of the intellectual property contained in the resource. Internet users paying traffic charges already have to consider the costs of connection, and they may want include this in criteria for selection. For example, they may favor text-based rather than image-intensive sites, if the information content is the same. Increasingly, there will be sites where a charge is made for the intellectual content of the site. Libraries have been dealing with pay-per-use online services such as Dialog for many years, but the Internet has created an opportunity to make services available to end users for a fee. Libraries have a role in negotiating subscriptions and site licenses for organizational access to services that charge.

Appendix E

Bill of Rights and Responsibilities for the Electronic Community of Learners
from the
American Association for Higher Education[58]

Article I: Rights of Individuals

The original Bill of Rights explicitly recognized that all individuals have certain fundamental rights as members of the national community. In the same way, the citizens of the electronic community of learners have fundamental rights that empower them.

Section 1.

A citizen's access to computing and information resources shall not be denied or removed without just cause.

Section 2.

The right to access includes the right to appropriate training and tools required to effect access.

Section 3.

All citizens shall have the right to be informed about personal information that is being and has been collected about them, and have the right to review and correct that information. Personal information about a citizen shall not be used for other than the express purpose of its collection without the explicit permission of that citizen.

Section 4.

The constitutional concept of freedom of speech applies to citizens of electronic communities.

Section 5.

All citizens of the electronic community of learners have ownership rights over their own intellectual works.

Article II: Responsibilities of Individuals

Just as certain rights are given to each citizen of the electronic community of learners, each citizen is held accountable for his or her actions. The interplay of rights and responsibilities within each individual and within the community engenders the trust and intellectual freedom that form the heart of our society. This trust and freedom are grounded on each person's developing the skills necessary to be an active and contributing citizen of the electronic community. These skills include an awareness and knowledge about information technology and the uses of information and an understanding of the roles in the electronic community of learners.

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[58] Available at http://www.luc.edu/infotech/sae/bill-of-rights.html

Section 1.

It shall be each citizen's personal responsibility to actively pursue needed resources: to recognize when information is needed, and to be able to find, evaluate, and effectively use information.

Section 2.

It shall be each citizen's personal responsibility to recognize (attribute) and honor the intellectual property of others.

Section 3.

Since the electronic community of learners is based upon the integrity and authenticity of information, it shall be each citizen's personal responsibility to be aware of the potential for and possible effects of manipulating electronic information: to understand the fungible nature of electronic information; and to verify the integrity and authenticity, and assure the security of information that he or she compiles or uses.

Section 4.

Each citizen, as a member of the electronic community of learners, is responsible to all other citizens in that community: to respect and value the rights of privacy for all; to recognize and respect the diversity of the population and opinion in the community; to behave ethically; and to comply with legal restrictions regarding the use of information resources.

Section 5.

Each citizen, as a member of the electronic community of learners, is responsible to the community as a whole to understand what information technology resources are available, to recognize that the members of the community share them, and to refrain from acts that waste resources or prevent others from using them.

Article III: Rights of Educational Institutions

Educational institutions have legal standing similar to that of individuals. Our society depends upon educational institutions to educate our citizens and advance the development of knowledge. However, in order to survive, educational institutions must attract financial and human resources. Therefore, society must grant these institutions the rights to the electronic resources and information necessary to accomplish their goals.

Section 1.

The access of an educational institutions to computing and information resources shall not be denied or removed without just cause.

Section 2.

Educational institutions in the electronic community of learners have ownership rights over the intellectual works they create.

Section 3.

Each educational institution has the authority to allocate resources in accordance with its unique institutional mission.

Article IV: Responsibilities of Educational Institutions

Just as certain rights are assured to educational institutions in the electronic community of learners, so too each is held accountable for the appropriate exercise of those rights to foster the values of society and to carry out each institution's mission. This interplay of rights and responsibilities within the community fosters the creation and maintenance of an environment wherein trust and intellectual freedom are the foundation for individual and institutional growth and success.

Section 1.

The institutional members of the electronic community of learners have a responsibility to provide all members of their community with legally acquired computer resources (hardware, software, networks, data bases, etc.) in all instances where access to or use of the resources is an integral part of active participation in the electronic community of learners.

Section 2.

Institutions have a responsibility to develop, implement, and maintain security procedures to insure the integrity of individual and institutional files.

Section 3.

The institution shall treat electronically stored information as confidential. The institution shall treat all personal files as confidential, examining or disclosing the contents only when authorized by the owner of the information, approved by the appropriate institutional official, or required by local, state or federal law.

Section 4.

Institutions in the electronic community of learners shall train and support faculty, staff, and students to effectively use information technology. Training includes skills to use the resources, to be aware of the existence of data repositories and techniques for using them, and to understand the ethical and legal uses of the resources.

August 1993

The "Bill of Rights and Responsibilities for Electronic Learners" arose from the Ethics and Technology Initiative for the American Association for Higher Education (AAHE).

Appendix F

Choosing a Distance Education Provider[59]
Questions to Ask

GENERAL ISSUES

Information from the Web

1. Does the institution have a Web site with information about distance learning offerings and services?

An institution involved in distance learning usually will have a first-rate Web site describing the programs and services it offers at a distance.

Telephone Access

2. Is the institution a local phone call for you? If not, does the institution have a toll-free number for distance learners that will allow you to connect with faculty and the various campus offices?

Being a distance learning student means you are physically removed from the traditional opportunities for face-to-face communications with instructors and campus office personnel, but it should not mean that you are a lonely or isolated learner. If the institution is in your local calling area, phone access will be easy. If not, it could become expensive if there isn't a toll-free line.

Student Orientation

3. Does the institution have an orientation handbook for distance learners?

It is helpful if the institution has though through all the issues and topics of interest to distance learners and put together relevant policies and procedures in a single document.

4. Does the institution have an orientation for distance learners?

Such an orientation would normally be offered at a distance. An orientation may provide tips on a variety of ways to make learning at a distance easier.

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[59] Adapted from *The Distance Learner's Guide* (Connick, 1999; p. 27-37, 142-143) – a publication of the Western Cooperative for Educational Telecommunications

Getting Help

5. Does the institution have a designated distance education office? If yes, does this office provide "one-stop" services for admissions? registration? financial aid applications?

Those institutions that are designed to serve distance learners normally will have a single point of contact for students. Being unable to contact the appropriate person or office on campus to answer a question, process paperwork, or solve a problem can be a major frustration.

6. Will you be assigned an advisor who will assist you in weaving your way through the institutional requirements and processes?

A student needs a contact person at the institution to serve as advisor and advocate. It is important to have the same person to call on campus each time to answer questions.

Accreditation

7. Is the institution regionally accredited? Is the institution accredited by some other federally recognized agency?

Institutions that achieve regional and professional accreditation have met a set of rigorous educational standards. Other accredited institutions usually accept their credits in transfer. Top priority should be given to accredited institutions.

8. Does a professional accrediting association accredit the program in which you are interested? If yes, has that professional association approved the program to be offered at a distance? Does the program need to be certified by the government? Upon graduation, will you be able to take the government or professional examination for certification?

Many programs lead to some sort of certification and/or examination. It is important that the institution have government or professional approval to offer a degree for which you will have to take a professional examination or seek licensure.

Credit Transfer

9. Will this institution accept credits that you have earned previously? If it will, how many?

You want to make sure that all credits earned elsewhere are transferred before you begin the program.

Transcript And Completion

10. Will the transcript and diploma granted look the same as if you had taken the course on campus?

The transcript and diploma you receive should be the same as if you took the course on campus. You do not want a transcript that identifies your course or program as different to ensure that a future employer or others will not interpret the degree as "second class."

ACADEMIC ISSUES

Course Selection And Academic Advice

11. Will you be assigned an academic advisor? Will the advisor be assigned before you enroll to help you choose courses?

You will want to make sure that you have an academic advisor, usually a faculty member in the program, before enrolling.

Amount Of The Program At A Distance

12. Is the total program offered at a distance? Is not, what percentage of the program can be completed via distance education?

There may be courses, portions of courses, laboratories, discussions, examinations, and other components of the program that will require you to go to the campus or other location. You need to know this in advance. There may be prerequisite courses and other general education requirements that are necessary before you begin work on a subject major. When you inquire about the percentage of the program offered at a distance, be sure that the institution understands that you are asking about every requirement including internships. You will want to know well in advance if any location-specific requirements are scheduled so that you can fit them into your schedule.

Residency Requirements

13. Does the institution have a residency requirement? If yes, can a distance education student fulfill the requirement at a distance?

The vast majority of higher education institutions have requirements about the number of credits you must take on the campus in order to complete the graduation requirements. If the requirement specifies some amount of time on campus, this may be a barrier to your timely completion of the program.

Sequencing Of Courses

14. Does the institution have a logical sequencing of courses? If it does, does the institution guarantee the courses will be offered in the sequence listed?

Substitution of Courses From Other Institutions

15. Does the institution allow courses to be substituted from other institutions? If it does, is there a limit?

Placement Or Admissions Testing

16. Are there any required examinations that you must take before enrollment? If there are, are they offered at a distance?

17. Could your performance on any examination influence whether you could take you entire program at a distance?

Library Access

18. What is the nature of your access to the library? Does the library have a toll-free telephone number? Is there a designated librarian for distance students to contact? Is there a "Guide to Library Resources for Distance Students?"

19. How do you access the library? Is the library catalog online? Will the library ship books and other materials to distance students?

20. Will the library secure books and other materials from other libraries through interlibrary loan and other means? If it will, does the library pay the fees associated with these services? If it doesn't, what are the costs you will incur for having materials sent to you?

Computer Access

21. To complete the program, do you need regular access to a computer? Is there a special fee for computer access? Are there special computer requirements?

22. Does the institution have clear standards on what computer capabilities you need for your degree program? Will you need access to the Internet? If so, does the institution provide Internet access for distance learners? Is there a special fee for Internet access?

The Bookstore

23. Does the institution have bookstore services for distance students? If so, does the bookstore have a toll-free telephone number?

24. Can books be ordered online over the Internet through a server that will protect your credit card number? If not, how do distance student secure course materials?

FINANCIAL ISSUES

25. If you enroll in the state/province in which you live, what is the tuition rate? If you enroll as an out-of-state/province student, what is the tuition rate?

26. Does the institution charge fees in addition to tuition? What are the amounts of each fee charged to distance education students?

27. Does the institution award full financial aid to distance learners? If not, for what types and level of aid are distance learners eligible?

STUDENT SERVICE ISSUES

Admissions and placement

28. Does the institution give credit for prior learning?

29. Does the institution allow you to "test out" on a course or courses?

30. Can you take courses before being admitted?

31. Will the institution accept transfer credits in your program?

Registration

32. Does the institution provide options to register at a distance?

Career Counseling

33. Does the institution provide access to career counseling services for distance learners? Can you receive career counseling at a distance?

LEARNING ASSISTANCE ISSUES

34. What tutoring services are available for distance learners? How do the tutoring services compare with those provided for on-campus students?

35. Are instructors available by phone and/or e-mail to answer questions that emerge from the lectures or readings?

36. What is the student-teacher ration for this course?

37. Is the instructor a regular faculty member or a student assistant? Has the instructor taught the course before? Does the instructor teach the course on campus as well as off campus?

38. Can you view the syllabus for the course to know the requirements and grading before you take the course?

39. Is information available about how students who have taken this course have evaluated the course and the instructor?

Appendix G

Determining the Suitability of Distance Learning Courses:
Checklist for Evaluating Distance Learning Courses[60]

COURSE CONTENT

1. What will be covered in the course?
2. How will information be provided?
3. How long will the course last?
4. How long do learner have to complete course work?
5. What type of evaluation is provided?
6. What type of course is this (e.g., for credit, non-credit, toward a degree, toward certification)?
7. How transferable is the course credit?
8. Who is the educator/trainer?
9. How does this course compare with on-site courses?
10. How do learners interact with each other?
11. How do learners interact with the educator/trainer?
12. How frequent is interaction among learners and educator/trainer?
13. What are the course requirements?
14. What types of distance learning are involved?
15. How much of the course can be completed only through distance learning activities?
16. How have other people evaluated this course?
17. How does this course meet learners' needs (e.g., toward certification, toward degree completion, for personal interest, for skill development)?
18. How does the type of interaction or teaching method match with my preferred method of learning?

DEGREE PROGRAMS

19. How many courses can be taken through distance learning?
20. How many courses must be taken on site?
21. How are administrative duties (e.g., registration, payment, scheduling, advising) completed?
22. How long do I have to complete the program?
23. What are the requirements?
24. How does this program compare with other degree programs offered through distance learning?
25. How does this program compare to the degree program offered on site?
26. What are the credentials of this institution/organization?
27. What types of distance learning are involved in this program?
28. Who are the eductors?
29. What are the educators' credentials?
30. How have other people evaluated this program?
31. How many courses can be taken at one time?
32. When are courses offered?
33. Which courses are offered if each course is not always available?

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[60] *Creating The Virtual Classroom: Distance Learning With The Internet.* (Porter, 1997; p. 101-102).

TIME FRAME

34. How long does the course last?
35. How long are materials made available?
36. What is the time limit for completing activities?
37. What type of follow-up is provided after the course?
38. Who quickly can the course be completed?
39. How often is the course offered?
40. How flexible is the course (e.g., requirements to participate in a videoconferencing session held only on certain dates and times, 24-hour access to materials online)?

COST

41. What is the cost of a single course or seminar?
42. What is the cost of an entire program?
43. What are the costs for materials?
44. What are the costs of instruction?
45. How is the cost structure determined (e.g., flat fee per learner, a discount for multiple learners at same location)?

TECHNICAL REQUIREMENTS

46. What type(s) of equipment are learners required to provide or use?
47. What types of materials, including software, are learners required to provide or use?
48. Where can the course be taken?
49. How will learners be connected with the source of information?
50. How are learners expected to participate in the course?
51. How can course materials be accessed?
52. Who is responsible for bringing together learners and educators?
53. What type of distance learning set up will be used?
54. How will the course be set up to meet learners' special needs (e.g., for signing or lip reading during broadcast, mobility during a videoconference, larger print size for printed materials)?

Appendix H

A Model of the Effective Dimensions of
Interactive Learning on the World-Wide Web[61]

Instructivism	**Pedagogical Philosophy**	**Constructivism**
Knowledge as the possession of the instructor	1—2—3—4—5	Knowledge as a construct in the mind of the learner
Behavioural	**Learning Theory**	**Cognitive**
Emphasise observable behaviour	1—2—3—4—5	Emphasise internal mental states
Sharply Focussed	**Goal Orientation**	**General**
Direct instruction with focus on a terminal behaviour	1—2—3—4—5	Simulation with more than one solution to a problem
Academic	**Task Orientation**	**Authentic**
Emphasis on traditional academic exercises	1—2—3—4—5	Emphasis on out of reach exercises in authentic settings
Extrinsic	**Source of Motivation**	**Intrinsic**
Motivation from outside the learner/learning environment	1—2—3—4—5	Motivation from inside the learner/learning environment
Didactic	**Teacher Role**	**Facilitative**
Teacher is repository of knowledge	1—2—3—4—5	Teacher is facilitator of instruction, guiding students
Unsupported	**Metacognitive Support**	**Integrated**
No support for monitoring progress and adjusting to individual learner's needs	1—2—3—4—5	Scaffolds students and aids with recapitulations of troubleshooting strategies
Unsupported	**Collaborative Learning Strategies**	**Integral**
Learners work individually to accomplish goals	1—2—3—4—5	Learners work in pairs/small groups to accomplish goals
Insensitive	**Cultural Sensitivity**	**Respectful**
Cultural sensitivities are not designed into the site	1—2—3—4—5	Site designed to adapt to cultural norms
Fixed	**Structural Flexibility**	**Open**
Site limited to specific times and/or places	1—2—3—4—5	Site not limited to specific times and/or places

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[61] *Making Learning a Part of Life: Beyond the "Gift Wrapping" Approach to Technology.* (Fischer, 1996). At http://www.cs.colorado.edu/~l3d/presentations/gf-wlf>. Center for Lifelong Learning and Design.