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**WORKSHOP**

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**AGREEMENT**

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## Quality Assurance Standards

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**Management Centre: rue de Stassart, 36 B-1050 Brussels**

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## Foreword

This CEN Workshop Agreement (CWA) defines a work program for standards, guidelines and codes of practice for quality description and assurance during the lifecycle of a learning resource.

This CWA is directly related to the European Commission's Mandate M/280 "Standardisation mandate to CEN, CENELEC and ETSI in the domain of "Learning and Training Technologies & Educational Multimedia Software", covering the development of a work plan for standards related activities in relation to Learning Technologies.

This work has been published as CWA 14040. The development of this CWA was one of the recommendations for further work.

This document has been developed through the collaboration of a number of contributing partners, representing a wide mix of interests. These include academia, educational software developers and integrators, educational publishers, telecommunication service providers and learning technology consultants. The present CWA has received the support of representatives of these sectors. A list of experts who have supported the content of this document may be obtained from the CEN/ISSS Secretariat.

The final review/endorsement round for this CWA was started on 2002-09-02 and was successfully closed on 2002-09-30. The final text of this CWA was submitted to CEN for publication on 2002-10-15.

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## Introduction

This report was prepared by an appointed Project Team – Quality Assurance (PT QA) within the Guidelines of the CEN/ISSS Learning Technologies Workshop. It summarizes the work of the Project Team and serves as a base document for future work.

The objective of the PT QA was to define a work program for standards, guidelines, and codes of practice for quality description and assurance during the lifecycle of a learning resource. The first was an analysis of existing approaches – the huge amount of approaches and their diversity led to the recommendation that a harmonization on a European level will be necessary in the future. The PT QA focused on two main aspects: Process-oriented approaches and transparency of learning resources.

# 1 Scope

Process-oriented approaches for quality description and assurance during the lifecycle of a learning resource specify procedures as well as requirements for certain phases of the lifecycle of a learning resource. We analysed different approaches, identifying their scope, methodology, and usability. Although the PT QA focused on the analysis of design and development processes, several representative product-oriented approaches have been taken into account to provide an insight into this class of approaches.

From this analysis a second focus emerged: Most approaches do not cover information for the learner. The transparency of learning resources means that the learner receives proper information about a resource to help decision making and to assure the provision of appropriate information.

The report shows the variety and diversity of approaches in this field, presenting different approaches being used in the community. The approaches show a representative selection – it was neither the objective to cover every existing approach nor to determine the quality of the approaches.

The first section deals with the *terminology* in the field of quality assurance. It covers definitions for basic concepts and methods, as well as the terms used in this report. The following chapters correspond to the phases of the project schedule:

- The section on *classification* schemes deals with approaches to classify and categorize approaches, methods, and concepts of quality assurance.
- This classification scheme is the basis for the *analysis* phase in which existing approaches of QA are classified, analyzed, and evaluated. Additionally, current standards and approaches are analyzed concerning information for learners.
- The last part deals with the *synthesis* which combines existing approaches and identifies requirements and potential approaches for QA in the field of learning technologies.
- In the *appendices*, the terms of reference for the PT are listed. Best-practice approaches are identified and listed in the *useful resources* section.

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## 2 Normative References

This chapter deals with the terminology used in this report. The variety of approaches, methods, concepts, and terms lead to the conclusion that a common vocabulary is necessary in order to clarify the results.

EN 45020:1998, *Standardization and related activities — General vocabulary (ISO/IEC Guide 2:1996)*

ISO 9000:2000, *Quality management systems — Fundamentals and vocabulary*

## 3 Definitions and Abbreviations

### 3.1 Definitions

#### 3.1.1 Quality

Degree to which a set of inherent characteristics fulfils requirements (ISO 9000:2000)

NOTE 1 The term “quality” can be used with adjectives such as poor, good or excellent.

NOTE 2 “Inherent”, as opposed to “assigned”, means existing in something, especially as a permanent characteristic.

#### 3.1.2 Quality Assessment

Quality assessment denotes the totality of measures carried out consistently and systematically in order to insure that a product conforms with the requirements of a stated specification

#### 3.1.3 Quality Assurance

Part of quality management focused on providing confidence that quality requirements will be fulfilled (ISO 9000:2000)

#### 3.1.4 Quality Management

Coordinated activities to direct and control an organization with regard to quality (ISO 9000:2000)

NOTE Direction and control with regard to quality generally includes establishment of the quality policy and quality objectives, quality planning, quality control, quality assurance and quality improvement:

#### 3.1.5 Standards

Document, established by consensus and approved by a recognized body, that provides, for common and repeated use, rules, guidelines or characteristics for activities or their results, aimed at the achievement of the optimum degree of order in a given context (EN 45020:1998)

NOTE Standards should be based on the consolidated results of science, technology and experience, and aimed at the promotion of optimum community benefits.

## 3.2 Acronyms

Acronym	Description
ARIS	Architecture of Integrated Information Systems
BAOL	British Association for Open Learning
CBT	Computer-based Training
CWA	CEN Workshop Agreement
DESIRE	Development of a European Service for Information on Research and Education
Dmmv	Deutscher Multimedia Verband
ECTS	European Credit Transfer System
EFMD	European Foundation for Management Development
ELM	Essen Learning Model
EQUIS	European Quality Improvement System
ETB	European Treasury Browser
GMDS	Deutsche Gesellschaft für medizinische Informatik
IfGH	Österreichisches Institut für Gewerbe- und Handelsforschung
ISO	International Standardization Organisation
LOM	Learning Object Metadata
NGFL	National Grid for Learning
ODL	Open and Distance Learning
PT	Project Team
PT QA	Project Team Quality Assurance and Guidelines
QA	Quality Assurance
QAA	Quality Assurance Agency for Higher Education
QM	Quality Management
QoL	Quality on the line
SCORM	Sharable Content Object Reference Model
VCT	Virtual Teacher Center
WBT	Web-based Training
WS LT	Workshop Learning Technologies
ZFU	Staatliche Zentralstelle für Fernunterricht

## 4 Classification

A variety of QA approaches have been developed for various purposes and from different perspectives. In order to compare QA approaches, it is necessary to identify a classification scheme, determining the scope, purpose, and method of each approach.

In the first phase of the PT QA work, several classification schemes were analyzed in order to develop a reference model for the comparison of QA approaches. Classification schemes cover different perspectives on quality assurance.

**Lifecycle Models**, originating from software engineering methods, focus on different phases on a product, beginning with planning to the termination of a product's use. An example for a lifecycle model is ISO 9000.

**Functional Models** cover different functional areas of educational activities, ranging from administrative issues to the design of learning units.

### 4.1 Evaluation of Classification schemes

In the first phase different classification schemes for the analysis were evaluated. The classification scheme for the analysis must fulfill the following requirements:

- **Completeness:** The classification must contain the main processes and functions of educational activities.
- **Adequate abstraction level:** The abstraction of the classification shall be adequate, so both high level QA and detailed approaches can be mapped into the classification scheme.
- **Easiness:** The classification shall help the reader to understand the main purposes and concepts of a QA approach. Therefore, it must be easy to understand and easily readable.

#### 4.1.1 Lifecycle MODELS

Production and service processes follow a certain lifecycle, starting with the very first idea, ending with the termination of a product. The lifecycle abstracts the phases of a process. In our approach, lifecycle phases of a learning technology product are used in order to determine the scope of a QA approach. Certain approaches support all phases whereas other approaches focus only on parts of the lifecycle, e.g. the implementation or use of a product. Even if the sequencing and coupling of the lifecycle phases differ depending on the development approach, all product lifecycles can be divided into following phases:

- Analysis
- Design
- Development
- Testing
- Implementation / Realization
- Usage
- Evaluation
- Improvement
- Termination

These phases only cover general phases of product lifecycles or software development. The sub-phases (activities) are dependent on the domain of the product. In this case, the report focus is on activities for the design, development, and implementation of learning environments.

### 4.1.2 Functional Models

This approach focuses on functional areas in the design process. The report describes a classification of functions of educational activities.

An example for a functional model is “Quality on the line (QoL)” by the Institute for Higher Education Policy, USA. The following table shows the main processes of this approach and benchmarks which can be interpreted as sub-processes.

**Table 1 — Functional Model (QoL)**

Category	Explanation
<b>Institutional Support</b>	
Document Technology Plan	Description of electronic security measures
Reliability of Technology	Reliability of technology involved
Central Infrastructure	Central System for supporting the distance education infrastructure
<b>Course Development</b>	
Guidelines	Guidelines for minimum standards for course design and delivery
Review	Periodical Review of instructional materials
Student Engagement	Students are involved in analysis, synthesis, and evaluation as part of course/program requirements
<b>Teaching/Learning</b>	
Interaction	Student interaction is facilitated by various communication technologies
Feedback	Feedback is provided in a constructively and timely manner
Research	Students are instructed in proper research and validation methods
<b>Course Structure</b>	
Motivation	Determination of student motivation and commitment for distance learning
Course Information	Providing supplemental course information (objectives, ideas, etc.)
Library Resources	Sufficient access to (digital) libraries
Time Agreements	Agreements for assignment and response timelines
<b>Student Support</b>	
Program Information	Providing program information for students
Information Search	Training for securing information through databases/archives/news/...
Technical Assistance for Students	Availability of technical assistance and support
Support Accuracy	Questions are answered directly and accurately
<b>Faculty Support</b>	
Technical Assistance for Course Developers	Availability of technical assistance and support for course designers
Assistance for Transition	Training for transition from classroom to online teaching and learning
Continuous Training	Availability of training for online teachers
Support Material	Availability of materials for dealing with students' problems
<b>Evaluation and Assessment</b>	
Continuous Evaluation and Assessment	Regular and continuous evaluation involving several methods

Data Availability	Availability of data about cost, enrolment, and effectiveness
Regular Review of Learning Outcomes	Learning outcomes are reviewed regularly to ensure clarity, utility, and appropriateness

The scheme provides a functional classification, including sub-processes for each functional area. Therefore, it can be used as a reference scheme for the comparison of other approaches.

## 4.2 Classification Scheme

In order to describe the QA approaches in a comparable way, standards must be described formally. The QA description matrix is a first step for the analysis of quality standards. The matrix defines categories for the analysis. It is part of this classification scheme that the analysis itself is based on a classification. As an example, the classification of processes might be compared to Quality on the Line (QoL), ISO 9000, EFQM, or any other classification scheme.

**Table 2 — QA Description Matrix**

QA Description Matrix	
<b>General</b>	General data characterizing the analysis
<ul style="list-style-type: none"> <li>• Name</li> <li>• Description</li> <li>• Source</li> <li>• Date</li> <li>• Analyst</li> </ul>	
<b>Method</b>	Classification (e.g. Process vs. Product Orientation)
<b>Target Group</b>	Classification (e.g. Developers, Teachers, Learners, Content Providers, Media Designers)
<b>Processes</b>	Classification (e.g. ISO 9000, EFQM, QAA)
<b>Results / Products</b>	Classification
<b>Criteria</b>	Classification
<b>Standards</b>	Classification (e.g. LOM)

The category **General** describes general information about the QA approach being analyzed. It includes name, source, analyst, and a short description of the approach.

The category **Method** deals with the question “What is the subject of quality assurance?” On the one hand, a QA approach can focus on a result of a process, on the other hand it can focus on the process itself. This implies different views on production or service processes. Assuring the quality of processes implies that the results of these processes fulfil certain requirements as a consequence. Other approaches only consider a certain product or service as the result of the processes. Usually, the subject of a QA approach combines both options. Therefore, these criteria can just be used to identify the focus of an approach. As a conclusion, we distinguish *product-oriented* and *process-oriented* QA approaches.

In the next section the **Target Group** of the quality approach is outlined.: Is the QA approach focused on:

- Learners
- Developers

- Managers / Administrators
- Teachers / Tutors
- Content providers

The category **Processes** contains the classification used for the functional / process comparison. As an example, the processes of QoL can be used as the reference scheme for the comparison. In this case, the following functions / processes are used for a comparison:

- Institutional Support
- Course Development
- Teaching/Learning
- Course Structure
- Student Support
- Faculty Support
- Evaluation and Assessment

**Criteria** answer the question “Which criteria/results are considered?” These criteria differ significantly depending on the scope and the focus of an approach. Considering the variety of instances of learning technologies, a variety of criteria can be applied.

General Software criteria: describe different aspects of a product, such as:

- Efficiency
- Reliability
- Usability
- Security
- Extendibility
- Portability / Interoperability
- Reusability

Secondly, typical evaluation criteria for learning environments can be applied, such as:

- Infrastructure: Reliability, Adequacy for target group, Adequacy of learning objectives, Practical relevance,
- Design: Navigation, Presentation, Interaction, Additional functions
- Methodology: Didactics, Pedagogy,
- Motivation
- Learning materials, delivery, structure, availability, relevance to presence
- Assessments: Structure, Use, Content, Feedback
- Support

As a third approach, criteria can be mapped to the corresponding process. Since we focus on process oriented standards in our analysis, criteria are mapped to the corresponding process (e.g., presentation ↔ learning materials).

Finally, learning technology **standards** supported by a QA approach will be listed.

### 4.3 Conclusion

By specifying categories for a classification of a QA approach, we will be able to compare approaches and to identify their similarities and differences.

The description matrix was adapted, using the Quality on the Line approach for the functional comparison. Criteria are included in the process mapping; additionally, a list of criteria is added to the description matrix.

**Table 3 — Additional Criteria**

<b>Name</b>	Name
<b>Description</b>	Description
<b>Source</b>	Source
<b>Date</b>	Date
<b>Analyst</b>	Analyst
<b>Method</b>	Product oriented
	Process oriented
<b>Target Group</b>	Developers
	Learners
	Teachers
	Content Providers
	Media Designers
<b>Processes</b>  + fully supported O partly supported - not supported	Institutional Support:
	Course Development:
	Teaching/Learning:
	Course Structure
	Student Support:
	Faculty Support:
	Evaluation and Assessment:
<b>Criteria</b>	List of criteria used
<b>Standards</b>	List of Learning Technology standards supported

In the next phase, selected QA approaches are described and evaluated. After the analysis phase, a proposal for a QA approach was derived, combining elements of existing standards.

### 4.4 Analysis

In this part, a representative selection of approaches is analyzed according to the classification scheme developed in chapter 4. The selection of the approaches does not intent to evaluate any of the approaches.

### 4.5 Process-oriented approaches

In this section process-oriented standards are analyzed. Process-oriented approaches cover requirements and/or recommendations for processes within the life-cycle of a learning resource.

## 4.5.1 ETB Quality RESEARCH

Table 4 — ETB Quality Research

<b>Name</b>	ETB Quality Criteria, Research on Quality Assessment Management and Selection Criteria regarding Content for School, Deliverable D3.1	
<b>Description</b>	<p>“This document summarizes the key findings of the desk research carried out within the framework of WP3 of the European Treasury Browser project.</p> <p>It also contains a proposed model for evaluation of the quality of web resources in the context of education, a model for describing collections with the usage of Collection Level Descriptions (CLD), and a glossary.”</p>	
<b>Source</b>	Etb.eun.org	
<b>Date</b>	2001-04-08	
<b>Method</b>	X	Product oriented
	X	Process oriented
<b>Target Group</b>	+	Developers
	O	Learners
	+	Teachers
	+	Content Providers
	+	Media Designers
<b>Processes</b>  + fully supported O partly supported - not supported	O	Institutional Support:
	+	Course Development: Preparing an educational activity
	+	Teaching/Learning: Conducting an educational activity
	O	Course Structure
	O	Student Support:
	O	Faculty Support:
	+	Evaluation and Assessment: Evaluating an educational activity
<b>Criteria</b>	<ul style="list-style-type: none"> <li>▪ Information quality</li> <li>▪ Learning capability</li> <li>▪ Playfulness</li> <li>▪ System quality</li> <li>▪ System use</li> <li>▪ Quality of service</li> </ul>	
<b>Standards</b>	Dublin Core	

### 4.5.2 Additional Information

This approach is based on a four layer model:

- Teacher activities
- Quality factors of web site
- Perceived user qualities
- Intended purposes of web site

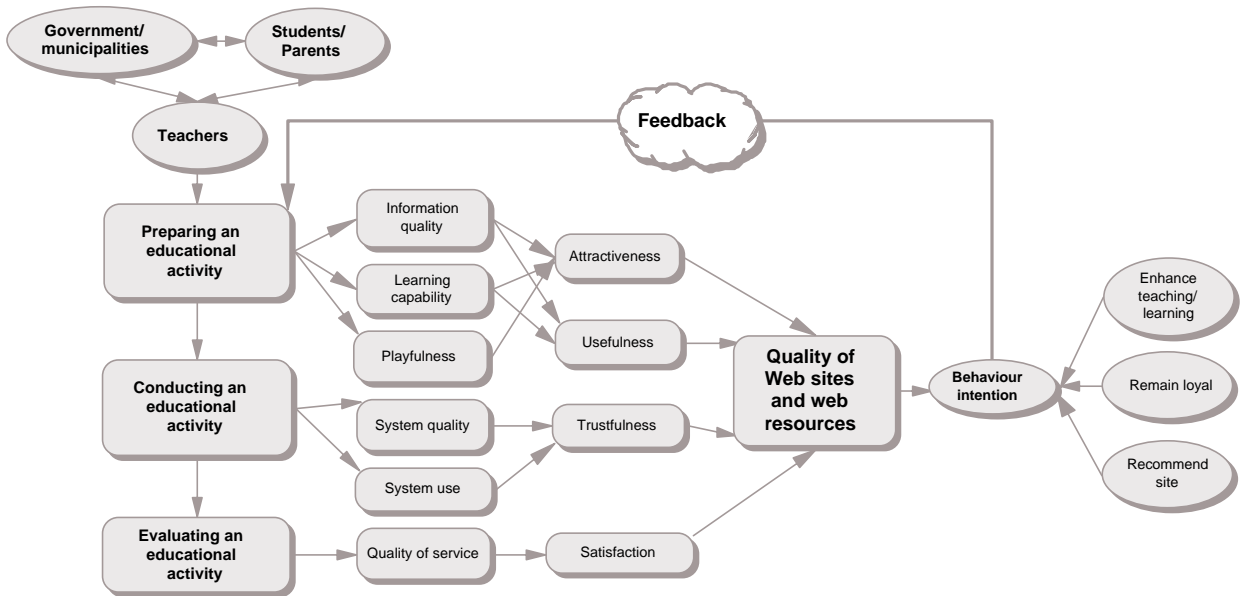


Figure 1 — The ETB Model (Information Flow)

## 4.5.3 ETB Quality Criteria

Table 5 — ETB Quality Criteria

<b>Name</b>	ETB Quality Criteria, Criteria for the selection of materials to be included in the ETB, Deliverable D4	
<b>Description</b>	"This document outlines the issues related to the definition of educational resource, of quality, in relation to the information need of the target group and the organization and description of resources. It concentrates on the following aspects: needs of different user groups, different types of resources, scope of the information covered, relevant data content for different type of material; compatibility with existing information systems, elaboration of indicators for selecting material for ETB."	
<b>Source</b>	Etb.eun.org	
<b>Date</b>	2001-04-08	
<b>Method</b>	X	Product oriented
	X	Process oriented
<b>Target Group</b>	+	Developers
	O	Learners
	+	Teachers
	+	Content Providers
	+	Media Designers
<b>Processes</b>  + fully supported O partly supported - not supported	O	Institutional Support
	+	Course Development
	+	Teaching/Learning
	+	Course Structure
	+	Student Support
	O	Faculty Support
	+	Evaluation and Assessment: Evaluating an educational activity
<b>Criteria</b>	<ul style="list-style-type: none"> <li>▪ Content criteria: Accuracy, Appropriateness, Clarity, Completeness, Motivation, Organization</li> <li>▪ Process criteria: Information integrity, Site integrity, System integrity</li> </ul>	
	<b>Standards</b>	
	Dublin Core	

## 4.5.3.1 Additional Information

## 4.5.3.1.1 Selection Indicators

- Resource Quality
- Types of Users
- Types of Material
- Content quality (Content criteria, form criteria, process criteria)

### 4.5.3.1.2 Content Criteria

- **Accuracy:** the resource must be reliable, valid and produced by an authoritative source; information should be impartially presented; resources must not contain biases, mistakes or omissions.
- **Appropriateness:** the resource should contain information for the intended learners' level; the resource should use an appropriate and suitable vocabulary, language or concepts, avoid mistakes or stereotyping.
- **Clarity:** information should provide a clear tie between the purpose (goals, objectives) and the content and procedures suggested. Correlation should be comprehensive and obvious. Redundancy is usually unwelcome and isolated activities without a relationship are superfluous.
- **Completeness:** the resource should be complete, i.e., offer all essential information and elements, as well as inclusion of such components as self-contained activities, materials required, prerequisites, information for obtaining related resources, assessment criteria, links to quality indicators and standards. The resource should offer wide and in-depth information related to the topic.
- **Motivation:** the resource should achieve the active engagement of the learner and be interesting and appealing, build on prior knowledge and skills, and promote relevant action on the part of the learner.
- **Organization:** the resource should be easy to use and logically sequenced, with each segment of the resource related to other segments. It should flow in an orderly manner, using organizing tools (i.e. headings, a map, etc.) and avoiding use of unrelated elements that are potentially ineffective or overpowering; it should provide for references, bibliographies and other supporting materials available for the users.

### 4.5.3.1.3 Process criteria

- **Information integrity:** Information contained in the resources should be updated; the duration of the information should be indicated as well as their liability the passing of the time, the intervals of their updating, on times and proceeding of the updating. The provider should be responsible for these indications.
- **Site integrity:** The site integrity should permit the users to know if the site is current and accurate; in fact, the dates of the last update should be indicated; there should be no dead links; the resource version number should be provided. The updating frequency should be described. The organization or the person should be responsible for keeping and managing the resource in a stable way. The webmaster should be responsible for providing these indications.
- **System integrity:** The selected resources should be technically acceptable, currently accessible, and should not present frequent overloads. The system should be stable and adequate measures should be taken to keep the system integrity. The system administrator should be responsible for providing these indications.

## 4.5.4 ESSEN Learning Model

Table 6 — The Essen Learning Model

<b>Name</b>	Essen Learning Model (ELM)	
<b>Description</b>	“The Essen Learning Model is a generic development model, supporting developers, educators, and users on different levels of educational activities. The Essen Learning Model provides concepts for project management, quality assurance, process integration, curriculum development, and the development of learning sequences and learning units. Emerging learning technology standards such as SCORM and LOM are integrated in the development process, minimizing the authors’ specification effort. Additionally, a detailed specification for context and didactical models was developed.”	
<b>Source</b>	http://elm.wi-inf.uni-essen.de	
<b>Date</b>	2002-01-03	
<b>Method</b>		Product oriented
	X	Process oriented
<b>Target Group</b>	+	Developers
	O	Learners
	+	Teachers
	+	Content Providers
	+	Media Designers
<b>Processes</b>  + fully supported O partly supported - not supported	O	Institutional Support: IT-analysis, context analysis
	+	Course Development: Curriculum Design, Knowledge acquisition, user modeling, design of learning sequences
	+	Teaching/Learning: Communication design
	+	Course Structure: Course Design
	+	Student Support: Learning Objectives, Course Information
	O	Faculty Support: Curriculum Design
	+	Evaluation and Assessment: Evaluation Design
<b>Criteria</b>		
<b>Standards</b>	LOM, SCORM, Dublin Core	

## 4.5.4.1 Additional Information

The Essen Learning Model is a modular system (see figure below) supporting development processes as well as the system’s use on different levels: the support of curriculum design (C-level), the development of learning sequences (D-level), and the development of learning units (E-level). Three abstraction levels can be distinguished: The *generic development model* provides knowledge for a variety of contexts. This generic model is customized depending on the users’ needs and preferences, and transformed into a specific process model for each development project. The *process model* is implemented using the Architecture of Integrated Information Systems (ARIS) and provides a framework for educational technology projects. ARIS is a frame concept for a global description (modeling) of computer supported information systems, covering the whole life-cycle range - from business process design to information technology deployment.. The third level is the *result* of the development process in the form of certain implementations for each module.

Figure 2 represents the main processes of the Essen Learning Model. The result of ELM-C is a detailed network of learning objectives and goals, determining structure and relations of learning sequences (e.g. courses). Based on these results, learning sequences are developed in ELM-D. The focus of this phase is to find an adequate didactical method together with the right technology depending on learning objectives and user groups. Finally, single learning units are designed and implemented in ELM-E, using the Extensible Markup Language (XML).

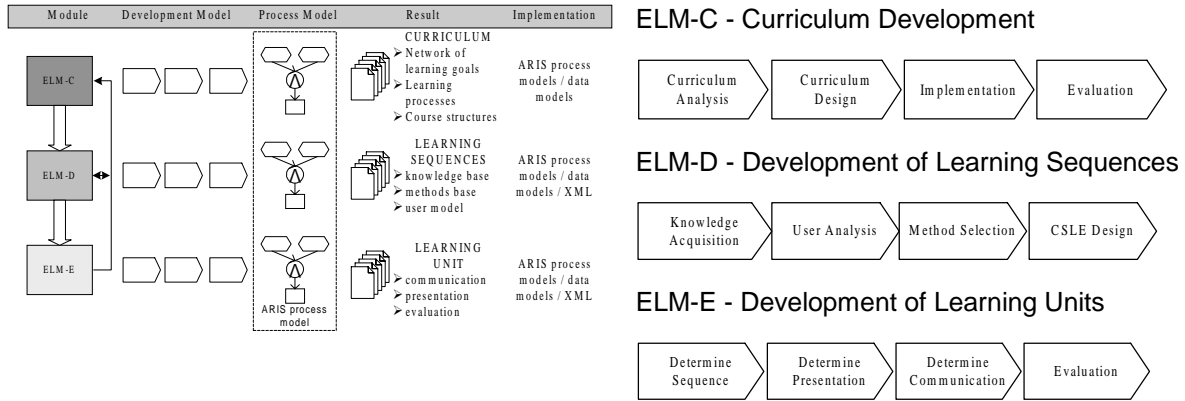


Figure 2 — The ELM Model (Information Flow)

## 4.5.5 BAOL Quality Mark for learning centres

Table 7 — The BAOL Quality Mark Model

<b>Name</b>	BAOL Quality Mark – British Association for Open Learning	
<b>Description</b>	Quality Mark for Learning Centres /Material Development	
<b>Source</b>	www.baol.org	
<b>Date</b>	2000-11-18	
<b>Method</b>		Product oriented
	X	Process oriented
<b>Target Group</b>	+	Developers
	+	Learners
	+	Teachers
	+	Content Providers
	+	Media Designers
<b>Processes</b>  + fully supported O partly supported - not supported	+	Institutional Support:
	+	Course Development:
	+	Teaching/Learning:
	+	Course Structure:
	+	Student Support: Customer Satisfaction, People Satisfaction
	+	Faculty Support: Management
	+	Evaluation and Assessment: Impact on Open Learning, Results
<b>Criteria</b>		
<b>Standards</b>		

## 4.5.5.1 Additional Information

The British Association for Open Learning has specified a complete approach for learning centers as a process oriented standard. The general categories (listed below) have been applied to different issues, such as learning centers and material development. Therefore, the reference processes are covered completely.

- 1 Management
- 2 Policy and Strategy
- 3 People Management
- 4 Resources
- 5 Processes
- 6 Customer Satisfaction
- 7 People Satisfaction
- 8 Impact on Open Learning

## 4.5.6 DESIRE - Development of a European Service for Information on Research and Education

Table 8 — The DESIRE Model

<b>Name</b>	DESIRE - Development of a European Service for Information on Research and Education	
<b>Description</b>	<p>“Selective subject gateways on the Internet are characterised by their quality control. The core activities of resource selection and description rely on skilled human input (by librarians, academics and experts) and are not activities that lend themselves to automation.</p> <p>This report describes methods and tools that have been created to assist the staff of subject gateways to develop and maintain their quality control systems:</p> <ul style="list-style-type: none"> <li>• A generic conceptual model is provided, which describes the processes involved in running a gateway and the quality issues that relating to each part of the process. The model can be used to monitor and review the quality of a gateway.</li> <li>• A comprehensive list of selection criteria is given, which incorporates 'tips' and 'hints' for evaluating Internet resources. This can be used as a reference tool for gateways interested in defining or refining the selection criteria their own use.</li> </ul> <p>Both the model and the list resulted from a 'state of the art' review of quality issues, both within subject gateways and in other sectors, notably the private sector and industry. They have both been tested by a number of existing subject gateways. The study and review carried out to develop these tools are described, together with the methods by which they were developed and tested.”</p>	
<b>Source</b>	<a href="http://www.ukoln.ac.uk/metadata/DESIRE/quality">http://www.ukoln.ac.uk/metadata/DESIRE/quality</a>	
<b>Date</b>	1999	
<b>Method</b>	X	Product oriented
	X	Process oriented
<b>Target Group</b>	+	Developers
	O	Learners
	O	Teachers
	+	Content Providers
	O	Media Designers
<b>Processes</b>  + fully supported O partly supported - not supported	+	Institutional Support:
	+	Course Development:
	+	Teaching/Learning:
	+	Course Structure:
	O	Student Support:
	+	Faculty Support:
	O	Evaluation and Assessment:
<b>Criteria</b>	See additional information	
<b>Standards</b>		

#### 4.5.6.1 Additional Information:

##### **1 Scope Policy: Considering your Users**

- Information Coverage
- Access
- Cataloguing Policy
- Geographical Issues

##### **2 Content Criteria: Evaluating the Information**

- Validity
- Authority and Reputation of Source
- Substantiveness
- Accuracy
- Comprehensiveness
- Uniqueness
- Composition and Organisation
- Currency, and adequacy of Maintenance

##### **3 Form Criteria: Evaluating the Medium**

- Ease of Navigation
- Provision of User Support
- Use of Recognised Standards
- Appropriate use of Technology
- Aesthetics

##### **4 Process Criteria: Evaluating the System**

- Information Integrity (Work of the Information Provider)
- Site Integrity (Work of the Web-Master/Site Manager)
- System Integrity (Work of the Systems Administrator)

##### **5 Collection Management Policy: Considering your Service**

- Collection Coverage and Balance
- Availability of Internet Resources
- Availability of Library Resources

## 4.5.7 QAA Code of Practice

Table 9 — The QAA Model

<b>Name</b>	QAA: <i>Code of practice for the assurance of academic quality and standards in higher education</i>	
<b>Description</b>	“The completed <i>Code</i> will identify a comprehensive series of system-wide expectations covering matters relating to the management of academic quality and standards in higher education. In so doing, it will provide an authoritative reference point for institutions as they consciously, actively and systematically assure the academic quality and standards of their programmes, awards and qualifications. The <i>Code</i> will assume that, taking into account nationally agreed principles and practices, each institution has its own systems for independent verification both of its quality and standards and of the effectiveness of its quality assurance systems. In developing the <i>Code</i> , extensive advice is being sought from a range of knowledgeable practitioners”	
<b>Source</b>	<a href="http://www.qaa.ac.uk/public/COP/codesofpractice.htm">http://www.qaa.ac.uk/public/COP/codesofpractice.htm</a>	
<b>Date</b>	2001	
<b>Method</b>		Product oriented
	X	Process oriented
<b>Target Group</b>	+	Developers
	+	Learners
	+	Teachers
	+	Content Providers
	+	Media Designers
<b>Processes</b>  + fully supported O partly supported - not supported	+	Institutional Support: Institutional policies and procedures,
	O	Course Development: Placement providers
	O	Teaching/Learning:
		Course Structure:
	+	Student Support: Student responsibilities and rights Student support and information
	+	Faculty Support: Staff development, Dealing with complaints
	+	Evaluation and Assessment: Monitoring and evaluation of placement learning opportunities
<b>Criteria</b>	See additional information	
<b>Standards</b>		

#### 4.5.7.1 Additional Information

6 This section of the *Code* provides a set of precepts, with accompanying guidance, on arrangements for placement learning. It is concerned with arrangements made for learning that is a planned and intended part of an academic programme, which typically takes place outside the institution with the support and cooperation of a placement provider.

7 An effective placement learning opportunity is one in which the aims and intended learning outcomes are clearly defined and understood by all parties and where the responsibilities of the higher education institution, placement provider and student are made explicit.

8 The responsibility for ensuring that a placement provides adequate opportunities for the intended learning outcomes to be achieved rests with the higher education institution.

9 Placements serve a variety of purposes. The intended learning outcomes from a placement may be highly specific, for example the development of practical skills and competencies that will be required for practice in professional or other employment; or they may be more general, for example the development of an understanding of the cultural or employment context of an academic discipline. The institution should clearly identify and approve the intended learning outcomes, whether specific or general.

10 The types of placements available to students take many forms (for example short, extended; full-time, part-time; paid, unpaid; assessed, non-assessed; formal learning, experiential learning; studying or working abroad). The institution's relationship with the placement provider will also vary with the nature of the placement. This may be, for example, a large scale placement with a single employer; enrolment of students on a programme of study at an overseas university; or a student-negotiated work placement.

11 The ways in which institutions discharge their responsibilities to ensure that placements provide appropriate learning opportunities will vary according to the nature of the placements. In all cases these should be clear and well documented. For example, in the case of student-negotiated placements, this might be done by advising students on the terms of letters requesting a placement, and providing a standard document that the placement provider could use to confirm that appropriate opportunities would be available to the student. In cases where a large scale placement is made with a single employer, the institution itself should normally enter into a written agreement (for example a partnership agreement) setting out the respective responsibilities of all parties. Where institutions use an agency to secure placements they will wish to assure themselves that their responsibilities for placement learning are being met by the agency.

12 Where the placement provides work experience, an emphasis should be placed on the partnership between the institution and the placement provider. The partnership should be one of mutual benefit that enables an institution and its students to have access to practical learning opportunities and enables a provider to be confident that access to competent and work-ready recruits will continue.

13 The QAA will have regard to the precepts of this section of the *Code* in its reviews of programmes that involve placement learning.

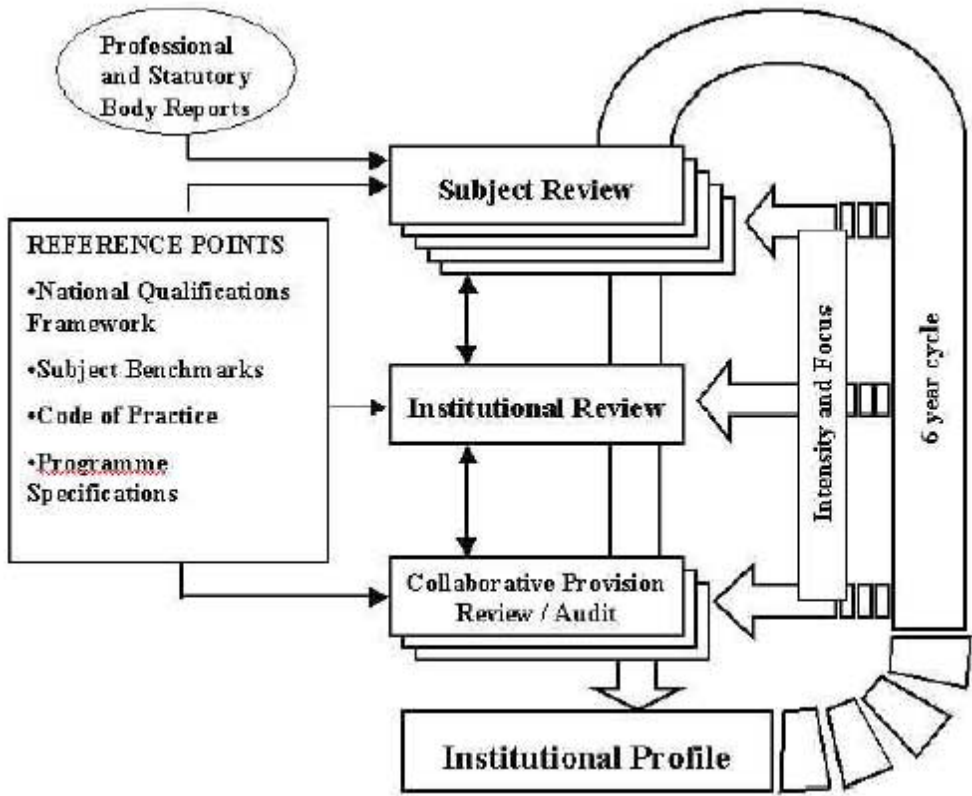


Figure 3 — QAA framework

## 4.5.8 EQUIS Model

Table 10 — The EQUIS Model

<b>Name</b>	EQUIS (European Quality Improvement System)	
<b>Description</b>	<p>General process oriented standard for evaluation and quality assurance of educational institutions. This standard is not limited to learning and teaching processes, but covers all activities of an educational institution.</p> <p>“The overall goals of EQUIS accreditation system are:</p> <ul style="list-style-type: none"> <li>▪ first, to assure stakeholders (students, companies, government, community) that the school meets a clearly defined set of quality standards.</li> <li>▪ second, to help the institution to improve itself through a self-assessment process. This process is designed to point out both the strengths and the weaknesses of the school.</li> <li>▪ third, to build a benchmarking system to compare different schools so that the whole management education system in the world can continuously be improved.”</li> </ul>	
<b>Source</b>	European Foundation for Management Development (EfMD)	
<b>Date</b>	2001	
<b>Method</b>		Product oriented
	X	Process oriented
<b>Target Group</b>	+	Developers
	+	Learners
	+	Teachers
	+	Content Providers
	+	Media Designers
<b>Processes</b>  + fully supported O partly supported  - not supported	+	Institutional Support: Context and Mission, Programme Quality, Resources
	+	Course Development: Programme Quality
	+	Teaching/Learning: Programme Quality
	+	Course Structure: Programme Quality
	+	Student Support: Students, Personal Development, Resources
	+	Faculty Support: Faculty
	+	Evaluation and Assessment: Programme Quality
<b>Criteria</b>		
<b>Standards</b>		

#### 4.5.8.1 Additional Information

##### **1- Context and Mission**

The purpose of this section is to situate the school's identity, mission and strategic objectives within the national and international context in which it operates. This section should form the foundation of the whole report and a comprehensive summary that demonstrates how the mission is translated into the main activities of the school.

- The Environment
- Statutes and Governance
- Vision and Mission
- Strategic positioning and Objectives

##### **2- Students**

The purpose of this section is to describe the type of student the school is seeking to develop and the use of selection processes, course support and career planning to maximise the school's contribution towards individual development, with special attention to international management skills. This should include a description and evaluation of performance in this area over the past five-year period and the objectives and plans for the next five-year period.

- Target Profile
- Selection
- Course Preparation and Progression
- Career Placement and Support

##### **3- Programme Quality**

The purpose of this section is to provide evidence for high standards in the quality of programmes and their contribution towards the school's international mission. This should include a description and evaluation of performance over the past five-year period and the objectives and plans for the next five-year period.

- Programme Design
- Programme Content
- Programme Delivery
- Student Assessment
- Programme Evaluation
- Compatibility with other European Systems

##### **4- Personal Development**

The purpose of this section is to describe the role of the school in developing the skills in individuals appropriate to a role in international management and consistent with the school's mission and individual programme objectives. This should include a description and evaluation of progress in this area over the past five-year period and the objectives and plans for the next five-year period.

- Development Process
- Personal Effectiveness Support
- Direct Application of Skills

## **5- Research and Development**

The purpose of this section is to describe the contribution of the faculty's research and development activities towards the school's mission and individual programme objectives. This should include a description and evaluation of progress in this area over the past five-year period and the objectives and plans for the next five-year period.

- Research Activities
- Development

## **6- Contribution to the Community**

The purpose of this section is to describe the school's role within the wider community in which it operates . It should evaluate its contribution to the local, national and international community in the past five-year period and describe the plans in this area for the next five-year period.

- External Relations
- Social and Economic Contribution
- Extra-Curricular Activities and Services to Education

## **7- Faculty**

The purpose of this section is to evaluate the overall effectiveness of faculty resources, faculty management processes and faculty development in meeting the school's mission and individual programme objectives. This section should include a description and evaluation of performance over the past five-year period and the objectives and plans for the next five-year period.

- Faculty Size and Composition
- Faculty Policy and Management
- Faculty Development and Education

## **8- Resources**

The purpose of this section is to evaluate the adequacy of physical resources and the associated management system in meeting the school's mission and objectives. This section should include a description and evaluation of performance over the past five-year period and the objectives and plans for the next five-year period.

- Financial Management
- Premises and Equipment
- Library and Research Facilities
- New Technology Infrastructures
- Support Facilities

## **9- Connections with the Corporate World**

This section should aim to describe the school's relationship with the international corporate world and evaluate the impact on the school's mission , strategic plan and current operations. This section should include a description and evaluation of performance over the past five-year period and the objectives and plans for the next five-year period.

## **10-International Issues**

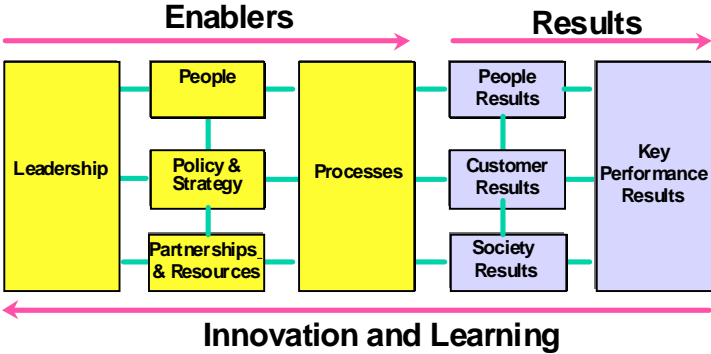
This section should aim to position the school in the international market for management education and evaluate its success in meeting its own international objectives. This section should include a description and evaluation of performance over the past five-year period and the objectives and plans for the next five-year period.

## 4.5.9 FQM Excellence Model

Table 11 — The FQM Excellence Model

<b>Name</b>	EFQM Excellence Model	
<b>Description</b>	<p>General process oriented standard for evaluation and quality assurance of educational institutions. This standard is not limited to learning and teaching processes, but covers all activities of an educational institution.</p> <p>“The EFQM Model provides a generic framework of criteria, which can be equally applied to any organisation regardless of size, sector and structure. Developed as a reference framework for the European Quality Award, the basic principle of the EFQM Model is that customer and staff satisfaction and integration into society are achieved via the role of the organisational leadership in setting the policy and strategy and the management of staff, resources and processes, culminating in excellence in key performance results.”</p>	
<b>Source</b>	<a href="http://www.efqm.org">http://www.efqm.org</a>	
<b>Date</b>	2001	
<b>Method</b>		Product oriented
	X	Process oriented
<b>Target Group</b>	+	Developers
	+	Learners
	+	Teachers
	+	Content Providers
	+	Media Designers
<b>Processes</b>  + fully supported ○ partly supported - not supported	+	Institutional Support:
	+	Course Development:
	+	Teaching/Learning:
	+	Course Structure:
	+	Student Support:
	+	Faculty Support:
	+	Evaluation and Assessment:
<b>Criteria</b>		
<b>Standards</b>		

4.5.9.1 Additional Information



*The EFQM Excellence Model is a Registered Trademark*

Figure 4 — EFQM Excellence Model (Information Flow)

## 4.5.10 EFQM Excellence Model / QAA

Table 12 — Mapping the QAA Framework and the EFQM Excellence Model

<b>Name</b>	Mapping the QAA Framework and the EFQM Excellence Model	
<b>Description</b>	<p>General process oriented standard for evaluation and quality assurance of educational institutions. This standard is not limited to learning and teaching processes, but covers all activities of an educational institution. It maps two approaches into a common framework.</p> <p>“This project set out to compare and contrast the principles and concepts of the EFQM Excellence Model® with the principles and framework of the new QAA Quality Assurance framework, including Institutional Review, Subject Review, and the Codes of Practice.”</p>	
<b>Source</b>	www.qaa.ac.uk	
<b>Date</b>	2001	
<b>Method</b>		Product oriented
	X	Process oriented
<b>Target Group</b>	+	Developers
	+	Learners
	+	Teachers
	+	Content Providers
	+	Media Designers
<b>Processes</b>  + fully supported O partly supported - not supported	+	Institutional Support:
	+	Course Development:
	+	Teaching/Learning:
	+	Course Structure:
	+	Student Support:
	+	Faculty Support:
	+	Evaluation and Assessment:
<b>Criteria</b>		
<b>Standards</b>		

## 4.5.11 National Grid for Learning (NGfL)

Table 13 — National Grid for Learning (NGfL)

<b>Name</b>	National Grid for Learning (NGfL)	
<b>Description</b>	<p>“The National Grid for Learning (NGfL) is both an <b>architecture</b> of educationally valuable content within the Internet, and a <b>programme</b> for the delivery of ICT infrastructure, services, support and training. Its purpose is to provide access to all sectors of education and lifelong learning. This appendix sets out the principles underlying the Grid, the ground rules for the acceptance of content, and a code of conduct for content providers. The Ground Rules and Code of Conduct apply to the main UK NGfL content hub which will be maintained and updated by the British Educational Communications and Technology Agency (Becta). Separate conditions may apply to NGfL sites maintained by the UK home countries, and to the development of content funded from the New Opportunities Fund. The Ground Rules and Code of Conduct and Technical Annex will be revised in future editions in the light of developments”</p> <p>In addition, a code of practice has been published as a guidance for content providers:</p> <p><a href="http://www.ngfl.gov.uk/downloads/NGfLAdviceToCP.pdf">http://www.ngfl.gov.uk/downloads/NGfLAdviceToCP.pdf</a></p>	
<b>Source</b>	NGfL	
<b>Date</b>	2001	
<b>Method</b>		Product oriented
	X	Process oriented
<b>Target Group</b>	+	Developers
	-	Learners
	-	Teachers
	+	Content Providers
	O	Media Designers
<b>Processes</b>	O	Institutional Support:
	+	Course Development:
	+	Teaching/Learning:
	+	Course Structure:
	+	Student Support:
	O	Faculty Support:
	+	Evaluation and Assessment:
<b>Criteria</b>		
<b>Standards</b>		

#### 4.5.11.1 Additional Information

##### 1.1.1.1.1 Content

1 The content must have educational, learning or administrative purpose. Decisions on whether to include content in, or link to it from, the main NGfL hub will be made by Becta. In cases of doubt Becta will refer to relevant bodies, including Government Departments, for advice.

2 Content providers should make clear through which main category or categories of the Grid (the top level buttons for schools, further education, libraries, etc.) the content is intended to be linked. Final decisions will rest with Becta.

3 Content must not contain 'unsuitable' material (that is, material which is not suitable for Grid users because, for example, it is obscene, offensive, inaccurate, or encourages illegal or anti-social behaviour) or links to such material. Becta will have the right immediately to cut the link from the Grid to any sites or pages found to contain, or have direct links to, such material, and to report such material to the appropriate authorities.

4 Providers must develop their sites in conformity with the Becta NGfL design specification, which will evolve to reflect developments in the technologies used to access the Grid. The purpose of this is to strike a balance between technological advance in site design and tools on the one hand, and maximising accessibility to the user on the other.

5 Additional public sector (e.g. Government and agency) and public service (e.g. local authority) content should seek to complement and enhance what is already available on the Grid. Duplication of content coverage will be permitted where there is value added, or where competition is likely to lead to improvement in quality.

6 No content site should be named in such a way that users might confuse it with other sites already on the Grid. In cases of doubt content providers should refer to Becta.

7 Content must comply with the evolving design specifications agreed for the Grid, including the addition of a Grid home page return button (to function also a badge of NGfL quality), in addition to home site and top of page return buttons.

8 The NGfL-badged pages must contain no direct advertising of products or services, but links to pages with advertising may be included, provided the page includes the expression '(includes advertisement)' immediately adjacent to the link.

9 No direct selling will be permitted from any NGfL-badged page. Where there are links to order forms or other forms of transaction, the expression '(link to sales material)' should appear immediately adjacent to the link.

10 Authority to use the Grid home page return button may be removed at any time by Becta, along with links from the Grid to the content site.

11 Sponsored material must not include sponsor-promotional material exceeding more than one quarter screen per item. Becta, in consultation with the Education Departments, will have the right to refuse or to disconnect sponsored material as necessary.

12 No content will be accepted unless it is accompanied by a satisfactorily completed Becta form which is returned via the Internet. Forms are available on the NGfL from the Becta site.

13 Content made available by any institution, corporate body, or organisation will not be accepted without proper authorisation. In the case of a school this means the authorisation of the headteacher or chair of governors.

##### 1.1.1.1.2 Code of Conduct for Content Providers

1 All providers of NGfL-linked sites for schools should have regard to the focus of the Grid on raising standards and ensure that, where appropriate, references and links to the Standards Site are in place.

2 All providers of NGfL-badged pages must undertake to maintain their material. Pages should indicate the date on which they were produced or revised.

3 Each NGfL-badged site or page will be the responsibility of the provider to maintain in an ethical and professional manner, having regard to the age of the intended users.

4 Content providers must undertake to co-operate fully with GridWatch, to take prompt action to remedy or make good any or all deficiencies relating to their content which come to light as a result of GridWatch activities and to inform GridWatch of any breach of copyright or inappropriate material on their site which affect the Grid and its content.

5 Providers should ensure that their site specifies a route for feedback.

6. Providers of NGfL-badged sites or pages should seek Becta approval of any press releases which have a bearing on the Grid. Use of the NGfL badge is not permitted on any sponsor or advertising material which is not related to the badged site.

#### 4.5.12 ISO 9000 Mapping

**Table 14 — Matching US Regional Accrediting Commission Distance Education Guidelines with ISO 9000**

<b>Name</b>	Matching US Regional Accrediting Commission Distance Education Guidelines with ISO 9000 (1994) Clauses	
<b>Description</b>	Matching US Regional Accrediting Commission Distance Education Guidelines with ISO 9000 (1994) Clauses	
<b>Source</b>	Neil Hynd, for the BFI Distance Education Quality Assurance Initiative	
<b>Date</b>	2001	
<b>Method</b>		Product oriented
	X	Process oriented
<b>Target Group</b>	+	Developers
	+	Learners
	+	Teachers
	+	Content Providers
	+	Media Designers
<b>Processes</b>  + fully supported O partly supported - not supported	+	Institutional Support:
	+	Course Development:
	+	Teaching/Learning:
	+	Course Structure:
	+	Student Support:
	+	Faculty Support:
	+	Evaluation and Assessment:
<b>Criteria</b>		
<b>Standards</b>		

4.5.12.1 Additional Information

Table 15 — ISO 9000 Quality System Requirements

ISO 9000 QUALITY SYSTEM REQUIREMENTS (1994 Issue)			
Clause	Title	Clause	Title
4.1	Management Responsibility	4.11	Control of Inspection, Measuring and Test Equipment
4.2	Quality System	4.12	Inspection and Test Status
4.3	Contract Review	4.13	Control of Nonconforming Product
4.4	Design Control	4.14	Corrective and Preventive Action
4.5	Document and Data Control	4.15	Handling, Storage, Packaging, Preservation and Delivery
4.6	Purchasing	4.16	Control of Quality Records
4.7	Control of Customer-Supplied Product	4.17	Internal Quality Audit
4.8	Product Identification and Traceability	4.18	Training
4.9	Process Control	4.19	Servicing
4.10	Inspection and Testing	4.20	Statistical Techniques

Table 16 — US Regional Accrediting Commission Distance Education Guidelines

US Regional Accrediting Commission Distance Education Guidelines (Copyright held by Originator)	ISO Clauses
<b>1. Institutional Context and Commitment</b> Electronically offered programs both support and extend the roles of educational institutions. Increasingly they are integral to academic organization, with growing implications for institutional infrastructure.	4.1
1a. In its content, purposes, organization, and enrollment history if applicable, the program is consistent with the institution's role and mission.	4.1
1b. It is recognized that a healthy institution's purposes change over time. The institution is aware of accreditation requirements and complies with them. Each accrediting commission has established definitions of what activities constitute a substantive change that will trigger prior review and approval processes. The appropriate accreditation commission should be notified and consulted whether an electronically offered program represents a major change. The offering of distributed programs can affect the institution's educational goals, intended student population, curriculum, modes or venue of instruction, and can thus have an impact on both the institution and its accreditation status.	4.1, 4.4, 4.9, 4.10
1c. The institution's budgets and policy statements reflect its commitment to the students for whom its electronically offered programs are designed.	4.1
1d. The institution assures adequacy of technical and physical plant facilities including appropriate staffing and technical assistance, to support its electronically offered programs.	4.9
1e. The internal organizational structure which enables the development, coordination, support, and oversight of electronically offered programs will vary from institution to	4.2, 4.3, 4.4, 4.5, 4.6, 4.7,

<p>institution. Ordinarily, however, this will include capability to:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Facilitate the associated instructional and technical support relationships.</li> <li><input type="checkbox"/> Provide (or draw upon) the required information technologies and related support services.</li> <li><input type="checkbox"/> Develop and implement a marketing plan that takes into account the target student population, the technologies available, and the factors required to meet institutional goals.</li> <li><input type="checkbox"/> Provide training and support to participating instructors and students.</li> <li><input type="checkbox"/> Assure compliance with copyright law.</li> <li><input type="checkbox"/> Contract for products and outsourced services.</li> <li><input type="checkbox"/> Assess and assign priorities to potential future projects.</li> <li><input type="checkbox"/> Assure that electronically offered programs and courses meet institution-wide standards, both to provide consistent quality and to provide a coherent framework for students who may enroll in both electronically offered and traditional on-campus courses.</li> <li><input type="checkbox"/> Maintain appropriate academic oversight.</li> <li><input type="checkbox"/> Maintain consistency with the institution's academic planning and oversight functions, to assure congruence with the institution's mission and allocation of required resources.</li> </ul>	4.8, 4.9, 4.10, 4.13, 4.14, 4.15, 4.16, 4.18, 4.19
1f. In its articulation and transfer policies the institution judges courses and programs on their learning outcomes, and the resources brought to bear for their achievement, not on modes of delivery.	4.4, 4.9
1g. The institution strives to assure a consistent and coherent technical framework for students and faculty. When a change in technologies is necessary, it is introduced in a way that minimizes the impact on students and faculty.	4.4, 4.9
1h. The institution provides students with technical support for each educational technology hardware, software, and delivery system required in a program.	4.19
1i. The selection of technologies is based on appropriateness for the students and the curriculum. It is recognized that availability, cost, and other issues are often involved, but program documentation should include specific consideration of the match between technology and program.	4.9
1j. The institution observes the legal and regulatory requirements of the jurisdictions in which it operates, e.g., requirements for service to those with disabilities, copyright law, state and national requirements for institutions offering educational programs, international restrictions such as export of sensitive information or technologies, etc.	4.10, 4.11, 4.12
<p><b>2. Curriculum and Instruction Methods change, but standards of quality endure.</b></p> <p>The important issues are not technical but curriculum-driven and pedagogical. The big decisions are made by qualified faculty and focus on learning outcomes for an increasingly diverse student population</p>	4.4, 4.9
2a. Through its formal processes of curriculum development and review, the institution assures that each program of study results in collegiate level learning outcomes appropriate to the rigor and breadth of the degree or certificate awarded by the institution, that the electronically offered degree or certificate program is coherent and complete, and that such programs leading to undergraduate degrees include general education requirements.	4.4
2b. Academically qualified persons participate fully in the decisions concerning program curricula and program oversight. It is recognized that traditional faculty roles may be unbundled and/or supplemented as electronically offered programs are developed and presented, but the substance of the program, including its presentation, management, and	4.4, 4.9, 4.18

<p>assessment are the responsibility of people with appropriate academic qualifications.</p>	
<p>2c. In designing an electronically offered degree or certificate program, the institution includes all courses necessary to complete the program. It provides a coherent plan for the student to access all courses necessary to complete the program, or clearly notifies students of requirements not included in the electronic offering. Hybrid programs or courses, mixing electronic and on-campus elements, are designed to assure that all students have access to appropriate services. (See also 2d below, concerning program elements from consortia or contract services.)</p>	<p>4.4, 4.9</p>
<p>2d. Although important elements of a program may be supplied by consortial partners or outsourced to other organizations, including contractors who may not be accredited, the responsibility for performance remains with the institution awarding the degree or certificate. It is the institution in which the student is enrolled, not its suppliers or partners, that has a contract with the student. Therefore, the criteria for selecting consortial partners and contractors, and the means to monitor and evaluate their work, are important aspects of the program plan. In considering consortial agreements, attention is given to issues such as assuring that incentives do not compromise the integrity of the institution or of the educational program. Consideration is also given to the effect of administrative arrangements and cost-sharing on an institution's decision-making regarding curriculum.</p> <p>Current examples of consortial and contractual relationships include:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Course material:             <ul style="list-style-type: none"> <li>- Courses or course elements acquired or licensed from other institutions.</li> <li>- Courses or course elements provided by partner institutions in a consortium.</li> <li>- Curricular elements from recognized industry sources, e.g., Microsoft or Novell certification programs.</li> <li>- Commercially produced course materials ranging from textbooks to packaged courses or course elements.</li> </ul> </li> <li><input type="checkbox"/> Course management and delivery:             <ul style="list-style-type: none"> <li>- WebCT, Blackboard, eCollege, etc.</li> </ul> </li> <li><input type="checkbox"/> Library-related services:             <ul style="list-style-type: none"> <li>- Database access services for library or instructional materials support.</li> <li>- Provision of library resources and services, e.g., online help desk, reference services, etc.</li> <li>- Bookstore services.</li> </ul> </li> <li><input type="checkbox"/> Services providing information to students concerning the institution and its programs and courses.</li> <li><input type="checkbox"/> Technical services:             <ul style="list-style-type: none"> <li>- Server capacity.</li> <li>- Technical support services, including help desk services for students and faculty.</li> </ul> </li> <li><input type="checkbox"/> Administrative services:             <ul style="list-style-type: none"> <li>- Registration, student records, etc.</li> </ul> </li> <li><input type="checkbox"/> Services related to advising, counseling, or tutoring.</li> <li><input type="checkbox"/> Online payment arrangements.</li> </ul>	<p>4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8, 4.9, 4.10, 4.11, 4.12, 4.13, 4.14, 4.15, 4.16, 4.18, 4.19, 4.20</p>
<p>2e. The importance of appropriate interaction (synchronous or asynchronous) between instructor and students and among students is reflected in the design of the program and</p>	<p>4.4, 4.9</p>

its courses, and in the technical facilities and services provided.	
<p><b>3. Faculty Support</b></p> <p>As indicated above, faculty roles are becoming increasingly diverse and reorganized. For example, the same person may not perform both the tasks of course development and direct instruction to students. Regardless of who performs which of these tasks, important issues are involved.</p>	4.4, 4.9, 4.18, 4.19
3a. In the development of an electronically offered program, the institution and its participating faculty have a considered issues of workload, compensation, ownership of intellectual property resulting from the program, and the implications of program participation for the faculty member's professional evaluation processes. This mutual understanding is based on policies and agreements adopted by the parties.	4.1, 4.18, 4.19
3b. The institution provides an ongoing program of appropriate technical, design, and production support for participating faculty members.	4.1, 4.18, 4.19
3c. The institution provides to those responsible for program development the orientation and training to help them become proficient in the uses of the program's technologies, including potential changes in course design and management.	4.1, 4.18, 4.19
3d. The institution provides to those responsible for working directly with students the orientation and training to help them become proficient in the uses of the technologies for these purposes, including strategies for effective interaction.	4.1, 4.18, 4.19
<p><b>4. Student Support</b></p> <p>Colleges and universities have learned that the twenty-first century student is different, both demographically and geographically, from students of previous generations. These differences affect everything from admissions policy to library services. Reaching these students, and serving them appropriately, are major challenges to today's institutions.</p>	4.1, 4.9
4a. The institution has a commitment – administrative, financial, and technical -- to continuation of the program for a period sufficient to enable all admitted students to complete a degree or certificate in a publicized timeframe.	4.1, 4.9
<p>4b. Prior to admitting a student to the program, the institution:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Ascertains by a review of pertinent records and/or personal review that the student is qualified by prior education or equivalent experience to be admitted to that program.</li> <li><input type="checkbox"/> Informs the prospective student concerning required access to technologies used in the program.</li> <li><input type="checkbox"/> Informs the prospective student concerning technical competence required of students in the program.</li> <li><input type="checkbox"/> Informs the prospective student concerning estimated or average program costs (including costs of information access) and associated payment and refund policies.</li> <li><input type="checkbox"/> Informs the prospective student concerning curriculum design and the time frame in which courses are offered, and assists the student in understanding the nature of the learning objectives.</li> <li><input type="checkbox"/> Informs the prospective student of library and other learning services available to support learning</li> <li><input type="checkbox"/> Informs the prospective student concerning the full array of other support services available from the institution.</li> <li><input type="checkbox"/> Informs the prospective student about arrangements for interaction with the faculty and fellow students.</li> <li><input type="checkbox"/> Assists the prospective student in understanding the nature and potential challenges of learning in the program's technology-based environment.</li> </ul>	4.1, 4.3, 4.9

<input type="checkbox"/> Informs the prospective student about the estimated time for program completion.	
<p>4c. The institution recognizes that appropriate services must be available for students of electronically offered programs, using the working assumption that these students will not be physically present on campus. With variations for specific situations and programs, these services may include:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Accurate and timely information about the institution, its programs, its courses, its costs, and related policies and requirements.</li> <li><input type="checkbox"/> Pre-registration advising.</li> <li><input type="checkbox"/> Application for admission.</li> <li><input type="checkbox"/> Enrollment/registration in programs and courses.</li> <li><input type="checkbox"/> Financial aid, including information about policies and limitations, information about available scholarships, processing of applications, and administration of financial aid and scholarship awards.</li> <li><input type="checkbox"/> Secure payment arrangements.</li> <li><input type="checkbox"/> Academic advising.</li> <li><input type="checkbox"/> Timely intervention regarding student progress.</li> <li><input type="checkbox"/> Tutoring.</li> <li><input type="checkbox"/> Career counseling and placement.</li> <li><input type="checkbox"/> Academic progress information, such as degree completion audits.</li> <li><input type="checkbox"/> Library resources appropriate to the program, including, where appropriate, reference desk services; access to databases, online journals, and full-text resources; fax services for documents; institutional agreements with academic libraries; and shipment of materials on a direct loan or interlibrary loan basis.</li> <li><input type="checkbox"/> Training in the use of library resources and in research techniques.</li> <li><input type="checkbox"/> Bookstore services: ordering, secure payment, and prompt delivery of books, coursepacks, course-related supplies and materials, and institutional memorabilia.</li> <li><input type="checkbox"/> Ongoing technical support, preferably offered during evenings and weekends as well as normal institutional working hours.</li> <li><input type="checkbox"/> Referrals for student learning differences, physical challenges, and personal counseling.</li> </ul>	<p>4.1, 4.7, 4.8, 4.19</p>
<p>4d. The institution recognizes that a sense of community is important to many students' success, and that an ongoing, long-term relationship is beneficial to both student and institution. The design and administration of the program takes this factor into account as appropriate, through such actions as encouraging study groups, providing student directories (with the permission of those listed), including off-campus students in institutional publications and events, including these students in definitions of the academic community through such mechanisms as student government representation, invitations to campus events including graduation ceremonies, and similar strategies of inclusion.</p>	<p>4.1, 4.9, 4.19</p>
<p><b>5. Evaluation and Assessment</b></p> <p>Both the assessment of student achievement and evaluation of the overall program take on added importance as new techniques evolve. For example, in asynchronous programs the element of seat time is essentially removed from the equation. For these reasons, the institution conducts sustained, evidence-based and participatory inquiry as to whether distance learning programs are achieving objectives. The results of such inquiry are used to guide curriculum design and delivery, pedagogy, and educational processes, and may affect future policy and budgets perhaps have implications for the institution's roles and</p>	<p>4.4, 4.9, 4.10</p>

mission.	
5a. As a component of the institution's overall assessment activities, documented assessment of student achievement is conducted in each course and at the completion of the program, by comparing student performance to the intended learning outcomes.	4.9, 4.20
5b. When examinations are employed (paper, online, demonstrations of competency, etc.), they take place in circumstances that include firm student identification.	4.9, 4.10
5c. Documented procedures assure that security of personal information is protected in the conduct of assessments and evaluations and in the dissemination of results.	4.7, 4.9, 4.15
5d. Overall program effectiveness is determined by such measures as: <ul style="list-style-type: none"> <li><input type="checkbox"/> The extent to which student learning matches intended outcomes, including for degree programs both the goals of general education and the objectives of the major.</li> <li><input type="checkbox"/> The extent to which student intent is met.</li> <li><input type="checkbox"/> Student retention rates, including variations over time.</li> <li><input type="checkbox"/> Student satisfaction, as measured by regular surveys.</li> <li><input type="checkbox"/> Faculty satisfaction, as measured by regular surveys and by formal and informal peer review processes.</li> <li><input type="checkbox"/> The extent to which access is provided to students not previously served.</li> <li><input type="checkbox"/> Measures of the extent to which library and learning resources are used appropriately by the program's students.</li> <li><input type="checkbox"/> Measures of student competence in fundamental skills such as communication, comprehension, and analysis.</li> <li><input type="checkbox"/> Cost effectiveness of the program to its students, as compared to campus-based alternatives.</li> </ul>	4.4, 4.9, 4.20
5e. The institution conducts a program of continual self-evaluation directed toward program improvement, targeting more effective uses of technology to improve pedagogy, advances in student achievement of intended outcomes, improved retention rates, effective use of resources, and demonstrated improvements in the institution's service to its internal and external constituencies. The program and its results are reflected in the institution's ongoing self-evaluation process and are used to inform the further plans of the institution and those responsible for its academic programs.	4.13, 4.14, 4.16, 4.17
5f. Institutional evaluation of electronically offered programs takes place in the context of the regular evaluation of all academic programs.	4.9, 4.10, 4.17

4.5.13 Education for Performance Excellence

**Table 17 — Education Criteria for Performance Excellence Education Criteria for Performance Excellence**

<b>Name</b>	2000 Education Criteria for Performance Excellence	
<b>Description</b>	<p>“The Criteria are designed to help organizations enhance their educational performance through focus on dual, results-oriented goals:</p> <ul style="list-style-type: none"> <li>▪ delivery of ever-improving value to students and other stakeholders, contributing to improved education quality; and</li> <li>▪ improvement of overall organizational effectiveness and capabilities as educational organizations.”</li> </ul>	
<b>Source</b>	<a href="http://www.quality.nist.gov">http://www.quality.nist.gov</a>	
<b>Date</b>	2001	
<b>Method</b>		Product oriented
	X	Process oriented
<b>Target Group</b>	+	Developers
	+	Learners
	+	Teachers
	+	Content Providers
	+	Media Designers
<b>Processes</b>  + fully supported O partly supported - not supported	+	Institutional Support:
	+	Course Development:
	+	Teaching/Learning:
	+	Course Structure:
	+	Student Support:
	+	Faculty Support:
	+	Evaluation and Assessment:
<b>Criteria</b>		
<b>Standards</b>		

4.5.13.1 Additional Information

The Core Values and Concepts are embodied in seven Categories, as follows:

- Leadership
- Strategic Planning
- Student and Stakeholder Focus
- Information and Analysis
- Faculty and Staff Focus
- Educational and Support Process Management

- Organizational Performance Results

Organizational performance areas:

- student performance results;
- student and stakeholder focused results; budgetary and financial results;
- faculty and staff results; and
- organizational effectiveness results.

#### 4.5.14 Survey of process oriented approaches in Germany

Four specific German approaches have been analyzed. Since these approaches are only available in German, we have summarized the approaches, providing a brief survey.

**Table 18 — Survey of process oriented approaches in Germany**

<b>Name</b>	a) IfGH: Guidelines for the development of CBT and WBT b) dmmv: Quality criteria for further education c) GMDS Catalog d) CALIBER-NET: A guide for developers of Open & Distance Learning.				
<b>Source</b>	a) <a href="http://www.ifgh.ac.at/index.asp?j=http://www.ifgh.ac.at/enms/richtlinien.htm">http://www.ifgh.ac.at/index.asp?j=http://www.ifgh.ac.at/enms/richtlinien.htm</a> b) <a href="http://www.dmmv.de">http://www.dmmv.de</a> c) <a href="http://www.gmde.de">http://www.gmde.de</a> d) <a href="http://www.caliber-net.org">http://www.caliber-net.org</a>				
<b>Date</b>	2001				
<b>Method</b>		<b>a) ifGH</b>	<b>b) dmmv</b>	<b>c) GMDS</b>	<b>d) CALIBER-NET</b>
	Product/Process	Process	Process	Process	Process
<b>Target Group</b>	Developers	+	○	-	+
	Learners	+	+	+	+
	Teachers	+	+	+	+
	Content Providers	-	-	-	○
	Media Designers	+	○	-	○
<b>Processes</b>	Institutional Support:	-	-	-	-
	Course Development:	+	+	+	○
	Teaching/Learning:				
	Course Structure:	○	+	-	+
	Student Support:	○	○	○	+
	Faculty Support:	+	○	-	+
	Evaluation and Assessment:	-	○	-	+
<b>Criteria</b>					
<b>Standards</b>					

## 4.6 Product-oriented approaches

Although the project team focused on the analysis of design and development processes, several representative product-oriented approaches have been taken into account. Two approaches will be presented in this report to provide an insight into this class of approaches. The criteria are mapped to the corresponding processes.

### 4.6.1 Erlangen Catalog

**Table 19 — Erlangen Catalog**

<b>Name</b>	Erlangen Catalog	
<b>Description</b>	The Erlangen Catalog is an evaluation for students and teachers, measuring the quality of learning environments. This evaluation was designed for CBT's., therefore several aspects (such as communication) of WBT's are not included.	
<b>Source</b>	<a href="http://www.fim.uni-erlangen.de">http://www.fim.uni-erlangen.de</a>	
<b>Date</b>	1998	
<b>Method</b>	X	Product oriented
		Process oriented
<b>Target Group</b>		Developers
	+	Learners
	+	Teachers
		Content Providers
		Media Designers
<b>Criteria</b>	Institutional Support: -	
	Course Development: Multimedia, Presentation, Audio/Video,	
	Teaching/Learning: Motivation	
	Course Structure: Didactics, usability	
	Student Support: Documentation, didactics	
	Faculty Support: -	
	Evaluation and Assessment: Assessments	

## 4.6.1.1 Additional Information

Below, the original classification is listed.

**Table 20 — Erlangen Catalog / Additional Information**

Usability	Installation, navigation, reliability, learning pace, ease of use
Presentation	Structure, presentation, aesthetics, readability, content, control elements, screen layout, difficulty
Didactics	Structure, additional information, help functions, glossary, explanations, didactical structure, text quality, levels, learning objective orientation
Multimedia	Graphics, animation, colors, explanations, visualization, realistic appearance, resolution
Audio-/Video	Audio-/Video quality, design, use, combination of media
Assessments	Questions, question design, feedback, reports, number of trials, relation to content, correction functions
Documentation	Quality of material, handbooks, additional material
Domain	Usability in different domains
Motivation	Individual adaptation, curiosity, utility, stress, acceptance, originality
Additional functions	print option, annotations, bookmarks, solutions, control of learning objectives, reports, uninstall

## 4.6.2 American Society for Training &amp; Development: E-Learning Certification

**Table 21 — American Society for Training & Development: E-Learning Certification**

<b>Name</b>	E-Learning Certification Standards	
<b>Description</b>	The E-Learning Certification by the American Society for Training & Development covers technical and pedagogical aspects. Although a certificate is presented, this standard does neglect important aspects of learning environments	
<b>Source</b>	<a href="http://workflow.ecc-astdinstitute.org/index.cfm?sc=help&amp;screen_name=cert_view">http://workflow.ecc-astdinstitute.org/index.cfm?sc=help&amp;screen_name=cert_view</a>	
<b>Date</b>	2001	
<b>Method</b>	X	Product oriented
		Process oriented
<b>Target Group</b>	+	Developers
		Learners
		Teachers
	+	Content Providers
	+	Media Designers
<b>Criteria</b>	Institutional Support: -	
	Course Development: Instructional design, technical standards	
	Teaching/Learning: Instructional design	
	Course Structure: Instructional design	
	Student Support: Usability, instructional design	
	Faculty Support: -	
	Evaluation and Assessment: Instructional design	

### 4.6.2.1 Additional Information

Below, the original classification is listed:

- *Usability*: Navigation, Orientation, Links, Links Labels, Help, Legibility, Text Production Quality.
- *Technical Standards* Technical Requirements, Install/Uninstall, Reliability, Responsiveness, Exit.
- *Instructional Design*: Communicate Purpose, Require Application, Gain Attention and Sustain Interest, Maintain Motivation, Elicit Relevant Knowledge, Show Examples and Demonstrations, Illustrate and Clarify Content, Provide Application Practice, Promote Near-Transfer Learning, Promote Far-Transfer Learning, Provide Integrative Practice Opportunities, Provide Feedback, Near-Transfer Feedback, Far-Transfer Feedback, Offer Instructional Help, Assess Learning, Use Media, Avoid Cognitive Load.

## 4.7 Learning Resource Transparency

The transparency of learning resources, such as learning environments, for the learner is a major requirement for a fair and open market in the educational sector. Currently, there is no standard for a description of a learning environment, informing the learner about the “product”. The learner has to rely on marketing information or recommendations. In this sense, we define quality as transparency of a product. The “Learning Resource Transparency” shall provide information about learning environments, so that a decision support for the learner (the customer) is provided.

In an analysis phase, we looked for aspects and elements which can be useful for a learner information. Related to the analysis from chapters 4.5 to 4.7 especially student support requirements can be used.

Secondly, other metadata standards have been analyzed. A focus was a student perspective on Learning Object Metadata (LOM).

### 4.7.1 Transparency and information for the learner in quality assurance approaches

Information about learning resources can be provided with different purposes : The goal of this proposal is to ensure that a student is informed properly about the characteristics of a learning environment. In our approach, we do not distinguish the level, i.e. the information shall be provided for any level (e.g. program, course, learning unit). We need to clarify that a learner information might be similar to metadata specifications – however, the focus of a learner specification is different: Focusing on non-technical users, the format and interpretation of a learner information is different.

In a first step, categories for learner information are provided. These categories are based on existing approaches, especially Learning Object Metadata and corresponding approaches. The categories identified are the following:

#### Categories

1. **General information** specifies basic requirements for the use of a learning environment. It should serve as an overview of the learning environment for the learner. Sample attribute: learning outcomes.
2. **Content** specifies the structure, content, and relation to other learning resource or skills.
3. **Educational concepts** describe the didactical and pedagogical concepts used in a learning environment. Sample attribute: teaching method.
4. **Support** describes the support provided by the responsible organization. Sample attributes: faculty support or hotlines.
5. **Presentation** describes methods and options for the design and layout of a learning environment. Sample attributes are navigation, presentation formats, or presentation guidelines..

6. **Communication / interaction** describes interactive phases of a learning resource. Sample attribute: communication applications.
7. **Assessment** describes different forms of tests and monitoring for performance monitoring and certification. Sample attribute: written exam.
8. **Administration** covers administrative data for enrolment, payment and related processes. Sample attributes: cost, payment method.
9. **Accessibility** provides information for special user groups, such as handicapped or disabled users. Sample attribute: special input devices.

## 4.7.2 Standard Analysis

In this section, different approaches will be analysed concerning their information for learners.

### 4.7.2.1 Syllabus Specifications

Most learning resources are based on the traditional syllabus specifications. It is obvious that certain characteristics of a learning resource cannot be mapped with this approach. However, this approach has to be taken into account because students are used to this form of specification.

Example:

1. Faculty and Teacher Information
  - Name
  - Phone
  - Office Location
  - Office Hours
  - E-Mail Address
2. Course Description
3. Course Objectives
4. Course Calendar
5. Course Requirements
6. Text, Material
  - Titles, authors, editions, URLs
7. Testing, Grading, Evaluation Policies
8. Attendance and Participation Policies
9. Disability Services
10. Miscellaneous Information

### 4.7.2.2 Student perspective on Learning Object Metadata

In this section, fields from LOM will be analyzed from a learner perspective. Learning Object Metadata mainly serve as a basis for developers and authors of learning environments. Learners usually use information for two main purposes: search and decision help. For search purposes (e.g., in search engines) the learner will search for specific resources which might be suitable. In the next step, the learning resources will be further evaluated in order to make a decision which specific resource is the best alternative. The information needed is different for these two steps. For search purposes, general classifications (or thesauri, taxonomies, etc) are used; for decision processes more detailed information is needed. Obviously, the information, criteria, and the format of information included in this decision process differs. For the average learner, LOM can

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provide basic information, mainly for search purposes but also as decision help. However, some fields are not necessary for decision processes, other fields need further clarification (e.g., fields for classification). It is obvious, that the relevance is primarily a subjective measure. It was derived from an informal student survey at university level. The perspective of relevance is the use of LOM for a buying decision.

**Table 22 — Student perspective on Learning Object Metadata**

Nr	Name	Student Relevance
1	General	-
1.1	Identifier	Not relevant for the student
1.2	Title	Relevant
1.3	Catalog Entry	Relevant for the Description is necessary to understand the catalog system.
1.4	Language	Relevant for international students.
1.5	Description	Relevant
1.6	Keywords	Not relevant in a description but for searching purposes
1.7	Coverage	Relevant as additional information
1.8	Structure	Relevant for informing the student about the structure
1.9	Aggregation Level	Relevant as additional information
2	Life Cycle	Only relevant for the purpose of identifying topicality
2.3.3	Date	"Last update" can be important decision criteria
3	Meta-Metadata	Not relevant for students
4	Technical	Relevant for students for identifying technical requirements – this should be limited to applications / systems
4.1	Format	Not relevant
4.2	Size	Relevant only for download purposes
4.3	Location	Relevant only for download purposes
4.4	Requirements	Relevant
4.4.1	Type	Relevant
4.4.2	Name	Relevant
4.4.3	Minimum Version	Relevant
4.4.4	Maximum Version	Relevant
4.5	Installation Remarks	Relevant
4.6	Other Platform Requirements	Relevant
4.7	Duration	Relevant
5	Educational	Relevant as additional information; an explanation of methods/didactics is necessary

5.1	Interactivity Type	Relevant as additional information
5.2	Learning Resource Type	Relevant as additional information
5.3	Interactivity Level	Relevant as additional information; an explanation of methods/didactics is necessary
5.4	Semantic Density	Not relevant, needs interpretation
5.5	Intended End User Role	Not relevant, since only learners are considered
5.6	Context	Relevant
5.7	Typical Age Range	Relevant
5.8	Difficulty	Relevant as additional information
5.9	Typical Learning Time	Relevant
5.10	Description	Relevant as additional information
6	Rights	-
6.1	Cost	Relevant
7	Relation	Not relevant because learning resource is described by the structure
8	Annotation	Only relevant if annotation is used for informing learners
9	Classification	Only relevant for search purposes, e.g. security, objective etc....

A good number of relevant aspects for the learner are covered within LOM. Nevertheless there is a great need for further information for those who want to check before deciding which learning resource fits best for them. As discussed one chapter ahead (student information quality approaches) there is a number of existing best practices which could lead towards a better understanding and a higher degree of usage of learning resources in private and business environments.

#### 4.7.2.3 ZFU: Quality requirements for accreditation of telecourses

**Table 23 — ZFU Quality requirements for accreditation of telecourses**

<b>Description</b>	ZFU is responsible for the accreditation of telecourses in Germany.
<b>Source</b>	<a href="http://www.zfu.de/Download/Ratgeber%201%202002%20komplett.pdf">http://www.zfu.de/Download/Ratgeber%201%202002%20komplett.pdf</a>
<b>Scope / Categories</b>	Quality requirements for accreditation of telecourses
<b>Vocabulary / Metadata for Student Information / Transparency</b>	<ul style="list-style-type: none"> <li>- Objective of the course</li> <li>- Beginning and duration</li> <li>- Structure of the course</li> <li>- Intervals for delivering of learning materials</li> <li>- Costs</li> <li>- Deferred Payment</li> <li>- Payment modalities</li> <li>- Incidental expenses for telecommunications</li> <li>- Prerequisites for course participation and admission</li> <li>- Term of contract and terms of termination</li> <li>- Place, duration, and frequency of instruction</li> <li>- Accreditation</li> </ul>

4.7.2.4 Typical ECTS Information

**Table 24 — Typical ECTS Information**

Description	ECTS Information
<b>Source</b>	
<b>Scope / Categories</b>	Description of courses within ECTS
<b>Vocabulary / Metadata for Student Information / Transparency</b>	<ul style="list-style-type: none"> <li>- Subject</li> <li>- Course title and code</li> <li>- Credits</li> <li>- Language of instruction</li> <li>- Prerequisites</li> <li>- Level</li> <li>- Study period</li> <li>- Course content</li> <li>- Instruction</li> <li>- Examination</li> <li>- Department responsible</li> <li>- Further information</li> </ul>

## 4.7.2.5 QAA Code of Practice

Table 25 — QAA Code of Practice

This approach covers a variety of aspects for information and support for students. It can be used as a best-practice approach providing extensive information.

<b>Description</b>	The pages which follow contain a <i>Code of practice for the assurance of academic quality and standards in higher education</i> . The <i>Code</i> is comprised of a suite of inter-related documents for the guidance of higher education institutions subscribing to the Quality Assurance Agency for Higher Education (the QAA).
<b>Source</b>	<a href="http://www.qaa.ac.uk/public/COP/codesofpractice.htm">http://www.qaa.ac.uk/public/COP/codesofpractice.htm</a>
<b>Scope / Categories</b>	<p><b>Sections of the code:</b></p> <ol style="list-style-type: none"> <li>1 Postgraduate Research Programmes</li> <li>2 Collaborative provision</li> <li>3 Students with disabilities</li> <li>4 External examining</li> <li>5 Academic appeals and student complaints on academic matters</li> <li>6 Assessment of students</li> <li>7 Programme approval, monitoring and review</li> <li>8 Career education, information and guidance</li> <li>9 Placement learning</li> <li>10 Recruitment and admissions</li> </ol>
<b>Vocabulary / Metadata</b>	<p>1 Postgraduate Research Programmes: Student information and induction</p> <p>Induction, which should normally occur within a short period of enrolment, can usefully include briefing and appropriate documentation on (6A):</p> <ul style="list-style-type: none"> <li>- the institution and its postgraduate portfolio;</li> <li>- the challenges that will typically face research students during the course of their studies and where guidance may be sought in the event of difficulties;</li> <li>- the institution's registration, enrolment, appeals and complaints procedures, assessment requirements, and research degree regulations;</li> <li>- the facilities that will be made available to the student and the institution's learning support infrastructure;</li> <li>- relevant health and safety and other legislative information;</li> <li>- student welfare;</li> <li>- supervision arrangements, including evaluation, monitoring and review procedures;</li> <li>- skills training programmes (both those available and those that may be required);</li> <li>- the opportunities that exist for meeting other research students and staff;</li> <li>- the opportunities that exist to develop scholarly competence and independence of mind;</li> <li>- the opportunities that exist to share experience and understanding beyond a research student's immediate study area.</li> </ul>

	<p><b>2 Collaborative provision</b></p> <p><b>Information for students</b></p> <p>When approving the information to be given to students the Awarding Institution should consider the need for:</p> <ul style="list-style-type: none"> <li>- details of the intended outcomes of the programme;</li> <li>- information on admission and qualification requirements and any assumed experience or necessary access to particular learning resources;</li> <li>- information about the time commitments required for study on the programme;</li> <li>- details of the assessment methods and conditions that will be used;</li> <li>- guidance to assist students who might transfer to study at the Awarding Institution;</li> <li>- information on the opportunities for students to use the Awarding Institution's learning and other resources;</li> <li>- information about fees and incidental expenses and how and when these are to be paid;</li> <li>- details about welfare, guidance and support services available;</li> <li>- information about the status of the student within the Awarding Institution and the entitlements that such status does or does not confer;</li> <li>- a clear statement about the nature of the relevant award and the information which a successful candidate would expect to have recorded on the award certificate and transcript;</li> <li>- named contacts at the Awarding Institution and the Partner Organisation;</li> <li>- information about complaints, grievance and appeals procedures and how to make use of these.</li> </ul>
	<p>In addition to the above, for arrangements involving <b>overseas Partner Organisations</b> or intended specifically for overseas students, an Awarding Institution should consider the need for students to be given:</p> <ul style="list-style-type: none"> <li>- details of the languages of instruction and assessment;</li> <li>- accurate and clear information about the recognition of the programme or award in other countries or by professional and statutory bodies in the UK or elsewhere;</li> <li>- information about the features of studying in different countries, including information about costs.</li> </ul>

	<p><b>6 Assessment of students</b></p> <p><b>A guidance note on published assessment information</b>  (<a href="http://www.qaa.ac.uk/public/COP/COPaosfinal/appendix2.htm">http://www.qaa.ac.uk/public/COP/COPaosfinal/appendix2.htm</a>)  The following list is illustrative of the type of information that institutions should consider including in their published documentation:</p> <ul style="list-style-type: none"> <li>the purpose, methods and schedule of assessment tasks during, and at the end of, a module or programme of study;</li> <li>any role played by Accreditation of Prior (Experiential) Learning and the processes involved;</li> <li>the criteria for assessment including, where appropriate, descriptors of expected standards of student attainment: what is expected in order to pass or to gain a particular grade or classification;</li> <li>what elements will, and which will not, count towards interim or final assessment and with what weighting or exemption procedures;</li> <li>the marking and grading conventions that will be used;</li> <li>the consequences of assessment, such as decisions about progression to the next level, final awards and the right of appeal;</li> <li>how and when assessment judgements are published;</li> <li>any opportunities for re-assessment.</li> </ul>
	<p><b>8 Career education, information and guidance</b></p> <p><b>Students</b></p> <p>8 Students should be provided with information on the services available to them while registered at the institution and those which will continue to be available to them when they have left.</p> <p>9 The institution should make clear in its information to prospective and present students how the skills and knowledge acquired during study are intended to be of use to them in the development of their careers.</p> <p>Institutions should consider:</p> <ul style="list-style-type: none"> <li>- promoting the importance of skills development for students in relation to employment and lifelong learning through, for example, progress files;</li> <li>- making reference to statements of transferable abilities contained in relevant subject benchmark statements;</li> <li>- ensuring that responsibilities for providing references for students, including their format coverage and quality, are clearly located and effectively discharged;</li> <li>- how best to promote CEIG provision as detailed in the statement of service to part-time/overseas/distance-learning students/e-learning students/students based on different campuses;</li> <li>- how best to use new technologies to promote and deliver CEIG.</li> </ul>

	<p><b>9 Placement learning</b></p> <p><b>Student support and information</b></p> <p>Institutions should ensure that students are provided with appropriate guidance and support in preparation for, during, and after their placements. Institutions should consider providing guidance to students, developed whenever possible in consultation with placement providers, on:</p> <ul style="list-style-type: none"> <li>- the support they provide to students where the responsibility for securing a placement rests with the student;</li> <li>- appropriate induction to the placement environment, including health and safety information;</li> <li>- any occupational health considerations or requirements, including immunisation (for example for health service or some international placements);</li> <li>- any legal or ethical considerations (for example client or patient confidentiality);</li> <li>- the means of recording the achievement of specific learning outcomes and progress, for example by adopting the HE Progress File initiative developed by Universities UK, ScoP, LTSN Generic Centre and the QAA;</li> <li>- availability of additional language or skills preparation;</li> <li>- the need for personal insurance cover particularly when on placement abroad;</li> <li>- cultural orientation and work expectations;</li> <li>- the institutional support services that will remain available to students during placements; and</li> <li>- appropriate re-orientation on students' return to institutions.</li> </ul>
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## 4.8 Conclusion

The presented approaches cover a variety of aspects and perspectives for the *quality* of learning environments. By presenting different approaches and comparing/mapping them to a reference scheme, we have shown similarities and differences of the scope, aspects, and perspectives.

As a next step, existing QA approaches should be mapped to scenarios in which they can be used properly. By describing scenarios, a decision help for users can be generated, showing which approach is adequate for a certain organization in a certain situation.

As a conclusion of the analysis, we have found that most of the standards focus on development and design, ensuring quality from the teachers/developers/managers perspective. The students perspective concerning transparency of learning environments, is often neglected. Therefore the PT decided to focus on this aspect of quality assurance.

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## 5 Synthesis

In this section we present two approaches: We propose a framework for quality assurance for designers and developers. This proposal is only a preliminary result of the working group serving as discussion input for other communities.

### 5.1 Proposal for a new quality assurance Framework

In this part, we describe a quality assurance approach for design and development processes based on a hybrid approach: Both, process and product-oriented approaches are combined into a common framework. This is the basis for further work, as specified in the CWA Quality Assurance.

For each process, a detailed process description or guidelines (e.g. similar to ISO 9000) should be prepared. If processes are not relevant for an organization, the irrelevance should be explained.

#### A. Strategic Planning:

1. Pre-analysis
  - a. Analysis of market potential
  - b. Requirement analysis: Market requirements
  - c. Requirement analysis: Student requirements
  - d. Requirement analysis: Competitors
  - e. Requirement analysis: Quality requirements
2. Decisions
  - a. Target group
  - b. Learning objectives
  - c. Quality Assurance Approach / Guidelines
3. Planning
  - a. Planning: Resources (HR, Resources)
  - b. Resource plan
  - c. Cost / Finance planning
4. Documentation

#### B. Framework / program:

1. Program planning
  - a. Curriculum
  - b. Tests and assessments
  - c. Schedule
2. Learning and teaching methods
3. Learning materials
4. Evaluation and documentation

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### C. Cooperation:

1. Cooperation with
  - a. Other content providers / domain experts / Organizations
  - b. Sponsors
  - c. Teachers
2. Establishing a cooperation network (incl. Evaluation)

### D. Course development:

1. Infrastructure
  - a. Reliability
  - b. Adequacy for target group
  - c. Adequacy for learning objectives
  - d. Practical relevance
2. Design
  - a. Navigation
  - b. Ergonomics
  - c. Presentation
  - d. Interactions
  - e. Additional functions
3. Didactics
  - a. Pedagogy
  - b. Methods
4. Motivation
5. Learning materials
  - a. Content
  - b. Structure
  - c. Availability
  - d. Accessibility
  - e. Relevance to presence
6. Assessments
  - a. Structure
  - b. Usage
  - c. Content
  - d. Relation to learning objectives / methods / target groups
  - e. Feedback
7. Student support methods

8. Evaluation and documentation

E. Marketing:

1. Marketing strategy

- a. Providing information (learner transparency, e.g. target group, learning objectives, methods, cost)
- b. Demonstration / test studies
- c. Evaluation and documentation

F. Introduction / starting an educational activity:

1. Documentation of access restrictions

- a. Prerequisites: degrees, certificates
- b. Prerequisites: Technology and content
- c. Cost

2. Student support, mentoring

3. Documentation

G. Introduction:

1. Explaining the program (Objectives, content, test, feedback, rules)
2. Training of learning methods
3. Explaining support methods
4. Documentation

**H. Realization**

1. Interactions (Email, Chat, Foren, VoIP)
2. Feedback system
3. Evaluation and Documentation

**I. Student support**

1. Continuous support for technical and content issues
2. Improving student motivation
3. Monitoring students' performance; special support for low performance students
4. Evaluation and documentation

**J. Teacher support**

1. Teacher support
  - a. Training of potential ODL methods
  - b. Technological and didactical support
2. Quality assurance
  - a. Continuous training for teacher
  - b. Continuous teacher evaluation / performance monitoring

## **CWA 14644:2003 (E)**

3. Motivation
  - a. Providing adequate resources (software, hardware, staff)
  - b. Fostering teamwork
  - c. Incorporating teachers' feedback
  - d. Common sense decisions
4. Documentation

### **K. Central database**

1. Collecting students' data
  - a. General data
  - b. Learner data (learning style, performance, feedback)
  - c. Alumni database
2. Documentation collection / synchronization
  - a. Strategic planning
  - b. Cooperation
  - c. Course design
  - d. Marketing
  - e. Course realization
  - f. Support data
  - g. Finances

### **L. Evaluation**

1. Evaluation of other phases
2. Evaluating quality assurance approaches
3. Controlling

This proposal is only a basic scheme in order to start a discussion on this issue. The detailed description and a vocabulary should be discussed and developed in a next step (see recommendations).

## 6 Recommendations

We have proposed an approach for QA for design and development processes. Since this proposal is only a preliminary result, further actions have to be taken:

### 6.1 Recommendation 1: European Quality Standard

<i>The need</i>	The analysis of quality assurance and quality management standards has shown that there is currently no harmonization effort towards a common (process oriented) European Quality Standard. The goal is to include a variety of related approaches in order to achieve consensus on a process oriented Quality Standard framework.
<i>Stakeholders</i>	Learners Developers Publishers  Governmental Organizations
<i>Action</i>	A study should identify widely accepted standards in all European countries. Each of these standard organizations will be invited for a common development.  Relevant organizations will develop a framework for a common European Quality Standard.
<i>Outcome</i>	A process oriented framework for the harmonization of European Quality Assurance Standards.
<i>Action priority</i>	High
<i>Organization</i>	CEN/ISSS WS/LT with other organizations active in this area.
<i>Timescale</i>	24 months

### 6.2 Recommendation 2: Learning Resource Transparency

<i>The need</i>	This report provides an outline of a format for information about learning resources, focusing on the learners perspective. This format shall be evaluated and harmonized with other organizations
<i>Stakeholders</i>	Learners Developers Publishers  Consumer organizations
<i>Action</i>	The approach will be proposed and evaluated in different organizations.
<i>Outcome</i>	The results of this proposal will lead to a common Learning Resource Transparency proposal.
<i>Action priority</i>	High
<i>Organization</i>	CEN/ISSS WS/LT to liaise with other organizations active in this area.
<i>Timescale</i>	12 months initially

### 6.3 Recommendation 3: Internationalization

<i>The need</i>	The proposed approaches should be extended for use in specific European countries. Therefore, translations and country- and culture-specific extensions should be implemented.
<i>Stakeholders</i>	Learners Developers Publishers
<i>Action</i>	The results will be translated, providing a guideline for all European countries.
<i>Outcome</i>	
<i>Action priority</i>	Low
<i>Organization</i>	CEN/ISSS WS/LT to cooperate with country-specific experts.
<i>Timescale</i>	24 months

### 6.4 Recommendation 4: Quality Assurance Repository

<i>The need</i>	<b>A repository for quality assurance standards should be implemented, providing information for the community.</b>  <b>Scenarios for use of each standard in the repository should be described, providing a decision support for users. This will lead to a quality assurance repository as a reference portal for educational users.</b>
<i>Stakeholders</i>	Developers Publishers  Organizations
<i>Action</i>	The results of the work of the PT QA will be mapped into a tool providing guidelines for developers supporting the evaluation based on the developed quality assurance approach.
<i>Outcome</i>	A web-based tool supporting the development of learning resources and the evaluation
<i>Action priority</i>	Medium
<i>Organization</i>	CEN/ISSS PT QA
<i>Timescale</i>	12 months initially / ongoing

### 6.5 Recommendation 5: Tool-Based Quality Assurance

<i>The need</i>	<b>A tool should be implemented, supporting developers to use both standards. Existing tools should be taken into account.</b>
<i>Stakeholders</i>	Developers Publishers
<i>Action</i>	The results of the work of the PT QA will be mapped into a tool providing guidelines for developers supporting the evaluation based on the developed quality assurance approach.
<i>Outcome</i>	A web-based tool supporting the development of learning resources and the evaluation
<i>Action priority</i>	Medium
<i>Organization</i>	CEN/ISSS PT QA
<i>Timescale</i>	18 months initially

## 6.6 Recommendation 6: Promotion

<i>The need</i>	Promotion activities in the scientific and development communities should be done
<i>Stakeholders</i>	Learners Developers Publishers Organizations
<i>Action</i>	The results of the work will be promoted using web-portals and other publications
<i>Outcome</i>	Periodical newsletter; ongoing information for other communities
<i>Action priority</i>	High
<i>Organization</i>	Liaisons with other quality related organizations
<i>Timescale</i>	ongoing

## 7 Useful Resources

### 7.1 Theories, Methods, Concepts

**Table 26 — Useful Websites for Theories, Methods and Concepts**

Website	Description
ARIADNE Educational Metadata Recommendation <a href="http://ariadne.unil.ch/metadata/ariadne_metadata_v3final1.htm#3.2.1%20mandatory">http://ariadne.unil.ch/metadata/ariadne_metadata_v3final1.htm#3.2.1%20mandatory</a>	ARIADNE is supported by the Commission of the European Union in the framework of the education and training program of the Telematics Applications Program. ARIADNE's primary goal is to foster the <i>share and reuse</i> of electronic pedagogical material, both by universities and corporations. In order to support this goal, ARIADNE has built the Knowledge Pool System: a Europe-wide distributed repository for pedagogical documents, with associated indexation and query tools. One of the key features of the Knowledge Pool System is the underlying metadata specification, which this document revises, in view of the results of our extensive experimentations. ARIADNE does not intend to develop metadata to describe the human actors involved in the process of education and training, to characterize or to record their educational performances. Neither is the intention of the present document to define the representation format for the metadata sets. For the latter purpose, use could be made of SGML, XML, RDF, a DBMS, etc. (The current Knowledge Pool System relies on a combination of XML and a DBMS).
Gateway to Educational Materials Workbench <a href="http://www.geminfo.org/Workbench/index.html">http://www.geminfo.org/Workbench/index.html</a>	The Gateway to Educational Materials (GEM) is... ... a consortium effort to provide "one-stop, any-stop" access to the substantial, but uncataloged, collections of Internet-based educational materials available on various federal, state, university, non-profit, and commercial Internet sites. ... a consortium of 300 + organizations and individuals who support the goals and mission of the GEM Project. ... a set of metadata standards and technical mechanisms that provides efficient, simple access to educational materials. ... The Gateway, a searchable, browseable catalog of metadata records for resources from GEM Consortium members' Internet sites. ... a project of the U.S. Department of Education and is a special project of the ERIC Clearinghouse on Information & Technology at Syracuse University.
CUBER <a href="http://www.cuber.net">http://www.cuber.net</a>	The aim of the project CUBER is to build an adaptive high-precision information system for information technology (IT) courses of European universities. Special emphasis will be placed on distance learning courses and other methods of "just-in-time and just-in-place learning". However, the perspective of the CUBER approach goes beyond the partners or the

	<p>present consortium and beyond the domain of IT courses.</p> <p>Metadata Specification</p> <p>The purpose of metadata in CUBER is to facilitate search, comparison and selection of study courses, packages and programmes offered by the course providers, i.e. universities and other educational institutions.</p>

## 7.2 Best-Practice

**Table 27 — Useful Websites for Best-Practice**

Website	Description
<a href="http://www.baol.co.uk/lcguide.htm">http://www.baol.co.uk/lcguide.htm</a>	British Association for Open Learning: Guide for Learning Centers

## 7.3 Projects & Examples

**Table 28 — Useful Websites for Projects & Examples**

Website	Description
ETB quality research ( <a href="http://www.en.eun.org">http://www.en.eun.org</a> )	<p>The aim of the ETB project is to build a Web educational resource Metadata Networking infrastructure for schools in Europe.</p> <p>The ETB thesaurus is a multilingual thesaurus in eight languages. It has been conceived within the ETB project as a documentary tool aimed to facilitate indexing and searching processes in two contexts:</p> <ul style="list-style-type: none"> <li>• a metadata infrastructure for information exchange, connecting European educational repositories that have their own indexing systems and documentary languages;</li> <li>• native repositories characterised by an European dimension from the very beginning.</li> </ul> <p>Being specifically oriented to learning/teaching materials, the thesaurus is mostly focused on content of formal, informal, non-formal education (core area). Only subordinately are taken into account aspects such as teaching methods and procedures; guidance and evaluation; administration problems; psychological/cognitive development; educational system (fringe area).</p>
DESIRE - Development of a European Service for Information on Research and Education ( <a href="http://www.ukoln.ac.uk/metadata/desire/quality/">http://www.ukoln.ac.uk/metadata/quality/</a> )	A list of quality selection criteria: a reference tool for Internet subject gateways

<p>SchoolNet Metadata Consultation</p> <p>(<a href="http://www.schoolnet.ca/meta/categories-e.html">http://www.schoolnet.ca/meta/categories-e.html</a>)</p>	<p>Through the help of SchoolNet and its partners, Canadian classrooms are connected to the Internet. As of May 2000, there were close to half a million connected computers in Canadian schools. As part of its ongoing efforts to improve the accessibility of information accessible through SchoolNet, Industry Canada is consulting members of the primary and secondary education communities on the feasibility of applying a potentially powerful approach to organizing and retrieving information.</p> <p>Most current Internet search engines are designed to seek out all instances of given "keywords" regardless of their context. As a result, much irrelevant material is often returned. A search on the word "curry", for example, typically retrieve such forms of "curry" as author, as subject, as place name, even as a verb. This problem will only get worse as the volume of information on the Internet grows.</p> <p>The application of "metadata" - essentially, information about information - to Internet-based material is a possible solution. Essentially, metadata is an indexing structure (or grid) on which details on a given piece of information may be mapped. This structure could include such categories as author, title, keywords and/or subject, type of material, etc. The information could be lesson plans, policies, research reports, and even Web sites.</p> <p>Information so categorized would be considerably easier to retrieve, as the searcher could indicate precisely in which categories particular terms are to be searched.</p>
<p>Virtual Teacher Centre</p> <p>(<a href="http://vtc.ngfl.gov.uk/docserver.php?docid=2190">http://vtc.ngfl.gov.uk/docserver.php?docid=2190</a>)</p>	<p>The VTC search mechanism features the capacity for users to drill down to very detailed search criteria. It does this using keywords defined in the VTC metadata scheme. This XML metadata vocabulary is based on popular standards such as Dublin Core and the Learning Object Metadata standard. The VTC has also been working with key partners, such as the National Curriculum web site, to ensure that its metadata is scaleable.</p> <p>By using keywords defined in the National Curriculum and VTC metadata schemes, your resources will register in the most detailed searches of a growing number of sites. The following documents describe the metadata and how to implement it effectively.</p> <p><a href="http://vtc.ngfl.gov.uk/metadata/Metadata-Handbook-07.rtf">http://vtc.ngfl.gov.uk/metadata/Metadata-Handbook-07.rtf</a></p> <p>By making use of meta-tagged information, the re-developed VTC site enables learners to quickly search, evaluate and acquire relevant content. Content exchange between partner sites can be aided by meta-aware computer agents, with the ability to understand the information they acquire.</p>

Staatliche Zentralstelle für Fernunterricht – ZFU <a href="http://www.zfu.de/Download/Ratgeber%201%202002%20komplett.pdf">http://www.zfu.de/Download/Ratgeber%201%202002%20komplett.pdf</a>	ZFU is responsible for the accreditation of distance education in Germany and has defined quality requirements for accreditation of distance education.
National Grid for Learning <a href="http://www.ngfl.gov.uk/downloads/NGfLAdviceToCP.pdf">http://www.ngfl.gov.uk/downloads/NGfLAdviceToCP.pdf</a>	Advice for content providers. The National Grid for Learning (NGfL) portal ( <a href="http://www.ngfl.gov.uk">http://www.ngfl.gov.uk</a> ) is the national focal point for learning on the Internet and is the largest educational portal in Europe.
BAOL Quality Mark <a href="http://www.baol.co.uk/qmwhat.htm">http://www.baol.co.uk/qmwhat.htm</a>	<p>The BAOL Quality Mark provides a Quality Assurance system using internal self assessment and external verification of those providing products and services for open and flexible learning. It is based on a framework of criteria adapted from the <a href="#">Business Excellence Model</a> promoted by the British Quality Foundation (BQF) and cross referenced against established Open Learning Guides so as to be relevant to all aspects of open learning provision and use. This provides a link to an internationally recognised model of excellence and underpins the Quality Mark approach.</p> <p>The BAOL Quality Mark for Learning Centres will benefit all those seeking quality in open learning provision and application including:</p> <ul style="list-style-type: none"> <li>• individual learners and customers</li> <li>• providers of education and training</li> <li>• corporate users</li> <li>• managers of learning centres</li> </ul> <p>learning centre network consortia</p>