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Information Technology — Learning, Education, and Training — Quality for Learning, Education and Training — Fundamentals and Reference Framework

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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ISO/IEC 36000 is the revision of the International Standard ISO/IEC 19796-1:2005, that was initially part of 1 of the multipart standard ISO /IEC 19796 published under the general title *Information technology — Learning, Education, and Training — Quality Management, Assurance and Metrics.*

In order to harmonize quality standards between ISO/IEC SC36 and ISO TC176/WG5 (currently withdrawn), a new ISO PC 288 was created and the parts of ISO/IEC 19796 multipart standard were redistributed and are being published as follows:

ISO/IEC 36000 ITLET Quality for learning, education and training – Fundamentals and Reference Framework (former ISO/IEC 19796-1)

ISO/IEC 36002 ITLET Quality for learning, education and training – Products and Services – Requirements (former ISO/IEC 19796-7) and,

ISO/IEC 36003 ITLET Quality for learning, education and training – Reference methods and metrics (former ISO/IEC 19796-3)

ISO/IEC 36000 was prepared by Technical Committee ISO/IEC JTC1, *Information Technology*, Subcommittee SC36, *Information Technology for Learning, Education, and Training*.

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Introduction

This International Standard provides the fundamentals and the reference framework for quality assurance, quality management and quality improvement in learning, education and training. This Standard primarily consists of the Reference Framework for the Description of Quality Approaches (RFDQ). It is a framework to describe, compare, and analyze approaches for quality management and quality assurance. These approaches can be mapped to RFDQ. Therefore, the framework is not a quality management or quality assurance model – it is a framework for the description of quality approaches. It serves to compare different existing standards and to harmonize these towards a common quality model. For a better understanding of the Reference Framework for the Description of Quality Approaches (RFDQ), several annexes show samples of its usage – the annexes are based on the German DIN PAS 1032-1 and the French code of practice in E-Learning. Additionally, an annex on Reference Quality Criteria (RQC) is included. These criteria shall serve as reference criteria for the analysis and evaluation of learning resources and scenarios. These criteria are also not a quality assessment approach itself, but a framework to compare different approaches for quality assurance and quality assessment.

ISO/IEC 36000 provides the fundamentals including specific vocabulary and the RFDQ Framework with its Process Model and Descriptive Model for the implementation and adaptation of the general quality standards within the fields of learning, education and training. It provides sector specific information that may be used to support the better integration of mandatory and voluntary quality approaches at the local, regional, national, and transnational levels. Through the application of this International Standard ISO/IEC 36000, organizations may continue to improve the quality of their processes, products, services, and solutions within the fields of learning, education, and training.

This International Standard ISO/IEC 36000 is compatible with and complementary to ISO 9000, ISO 9001 and other ISO quality standards, such as ISO 14001 and ISO 21001.

This International Standard follows the concept and philosophy of Total Quality Management like ISO 9000 and ISO 9001. However it is not a Management System Standard (MSS) like ISO 9001 but provides guidance and support for the introduction of quality management and improving learning quality.

This International Standard follows the concept and philosophy of Environmental Management like ISO 14001. However it is not an Environmental Management System Standard (EMSS) like ISO 14001 but provide guidance and support for introducing and improving quality processes in learning, education, and training.

This International Standard was carefully developed and revised over a period of more than 10 years to ensure compatibility with ISO 9001 and ISO 14001 standards to facilitate their use by organizations that wish to introduce and improve quality assurance, quality management and quality improvement in learning, education and training together with the implementation of both environmental and quality management systems to benefit themselves and their customers and stakeholders.

Overview of this International Standard ISO/IEC 36000:

This International Standard introduces and describes in its main Clause 6 the process-oriented Reference Framework for the Description of Quality Approaches (RFDQ).

Annex A (informative) describes the RFDQ Framework related to the PDCA Cycle and the IDEAL Reference Model and its introduction and provides answers on key questions in order to provide a clearer understanding of the RFDQ concept and its use.

Annex B (informative) shows the full German process model (DIN PAS 1032-1) as an example how the basic model can be extended.

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Annex C (informative) describes the use of the model describing the ~~"~~French Code of Practice in E-Learning" (AFNOR Z 76-001) as a second sample of the use of the standard.

Annex D (informative) provides a reference list of quality criteria which can be included in RFDQ for assessment and evaluation.

Annex E (informative) describes how other quality approaches can be mapped to RFDQ. Specifically, the Chinese Model CELTSC is used as an example of the mapping procedure.

Annex F (informative) describes the use of the model for specific quality objectives such as metadata quality.

Annex G (informative) lists references for explanatory purposes.

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Information Technology — Learning, Education, and Training— Quality for Learning, Education and Training — Fundamentals and Reference Framework

1 Scope

This International Standard provides the fundamentals and the reference framework for quality assurance, quality management and quality improvement in learning, education and training. It consists mainly of the Reference Framework for the Description of Quality Approaches (RFDQ): It is a common and generic framework to describe, specify, and understand critical properties, characteristics, and metrics of quality. The Reference Framework for the Description of Quality Approaches (RFDQ) combines an elaborated and extensive process model with a descriptive model for the processes. This International Standard harmonizes existing approaches, concepts, specifications, terms, and definitions related quality for learning, education, and training.

2 Conformance

A quality description conforms to this standard if each process included in a RFDQ instance corresponds to the appropriate specification in this standard and includes all sub-processes. A conforming description may contain descriptions of processes not included in this standard. The description may contain additional data elements.

This International Standard follows the concept and philosophy of Total Quality Management like ISO 9000 and ISO 9001. However it is not a Management System Standard (MSS) like ISO 9001 but provide guidance and support for the introduction of quality management and improving learning quality.

This International Standard follows the concept and philosophy of Environmental Management like ISO 14001. However it is not an Environmental Management System Standard (EMSS) like ISO 14001 but provide guidance and support for introducing and improving quality processes in learning, education, and training.

This International Standard was carefully developed and revised over a period of more than 10 years to ensure compatibility with ISO 9001 and ISO 14001 standards to facilitate their use by organizations that wish to introduce and improve quality assurance, quality management and quality improvement in learning, education and training together with the implementation of both environmental and quality management systems to benefit themselves and their customers and stakeholders.

3 Normative References

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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ISO 9000 Quality management systems – *Fundamentals and Vocabulary.*

ISO 9001 Quality management systems – *Requirements.*

ISO 9004 Quality management systems – *Guidelines for performance improvements.*

ISO 14001 Environmental management systems – *Requirements with guidance for use.*

ISO/IEC 19796-3, Information technology – *Quality management, assurance, and metrics – Part 3: Methods and Metrics.*

4 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

4.1
organization
group of people and facilities with an arrangement of responsibilities, authorities and relationships
[SOURCE: ISO 9000:2005, 3.3.1]

4.2
customer
individual or organization who consumes the product (studying and training) directly or indirectly
EXAMPLES learner, learner's parents, education institutions and potential employer

4.3
interested party
person or group whose interest is affected by performance or achievements of e-learning
EXAMPLES Learner, employee, provider, partner, investor, owner, society.
[SOURCE: ISO 9000:2005, 3.3.7, modified]

4.4
process
set of interrelated or interacting activities which transforms inputs into outputs
Note 1 to entry: Inputs to a process are generally outputs of other processes.

Note 2 to entry: Processes in an organization are generally planned and carried out under controlled conditions to add value.

Note 3 to entry: A process where the conformity of the resulting product cannot be readily or economically verified is frequently referred to as a ~~s~~special process".

4.5
product
result of a process
Note 1 to entry: There are four generic product categories, as follows:

— services (e.g. transport);

— software (e.g. computer program, dictionary);

— hardware (e.g. engine mechanical part);

— processed materials (e.g. lubricant).

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Many products comprise elements belonging to different generic product categories. Whether the product is then called service, software, hardware or processed material depends on the dominant element. For example, the offered product ~~"a~~automobile" consists of hardware (e.g. tyres), processed materials (e.g. fuel, cooling liquid), software (e.g. engine control software, driver's manual), and service (e.g. operating explanations given by the salesman).

Note 2 to entry: Service is the result of at least one activity necessarily performed at the interface between the supplier and customer and is generally intangible. Provision of a service can involve, for example, the following:

— an activity performed on a customer-supplied tangible product (e.g. automobile to be repaired);

— an activity performed on a customer-supplied intangible product (e.g. the income statement needed to prepare a tax return);

— the delivery of an intangible product (e.g. the delivery of information in the context of knowledge transmission);

— the creation of ambience for the customer (e.g. in hotels and restaurants).

Software consists of information and is generally intangible and can be in the form of approaches, transactions or procedures Hardware is generally tangible and its amount is a countable characteristic**.** Processed materials are generally tangible and their amount is a continuous characteristic. Hardware and processed materials often are referred to as goods.

Note 3 to entry: Quality assurance is mainly focused on intended product.

Note 4 to entry: In accordance with ISO 9000 and ISO 9001, the term "product" can also mean ~~"s~~service".

[SOURCE: ISO 9000:2005, 3.3.1, modified — Note 4 to entry has been added.]

4.6
service

intangible output that is the result of at least one activity necessarily performed at the interface between the provider and the customer

Note 1 to entry ~~"s~~service": Provision of a service can involve, for example, the following:

— an activity performed on a customer-supplied tangible product (e.g. a car to be repaired);
— an activity performed on a customer-supplied intangible product (e.g. the income statement needed to prepare a tax return);
— the delivery of an intangible product (e.g. the delivery of information in the context of knowledge transmission);
— the creation of ambience for the customer (e.g. in hotels and restaurants);

A service is usually experienced by the customer.

Note 2 to entry In accordance with ISO 9000 and ISO 9001, the term "product" can also mean ~~"s~~service

[SOURCE: ISO 9001:2015, 3.7.3.2, modified, Note 2 to entry has been added]

4.7
quality

degree to which a set of inherent characteristics fulfils requirements

Note 1 to entry: The term ~~"q~~uality" can be used with adjectives such as poor, good or excellent.

Note 2 to entry: ~~"I~~nherent", as opposed to ~~"a~~ssigned", means existing in something, especially as a permanent characteristic.

4.8
data quality

set of features that concern the collection, analysis, persistence, dissemination, and usage of data

EXAMPLES relevance, accuracy, timeliness, punctuality, accessibility, clarity, comparability, coherence

4.9
quality assessment

measures carried out consistently and systematically in order to insure conformity with the requirements of a defined specification

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4.10
quality assurance (QA)
part of quality management focused on providing confidence that quality requirements will be fulfilled
[SOURCE ISO 9000:2005, 3.2.11]

4.11
quality control
part of quality management focused on fulfilling quality requirements
[SOURCE ISO 9000:2005, 3.2.10]

4.12
quality improvement
part of quality management focused on increasing the ability to fulfil quality requirements
Note 1 to entry: The requirements can be related to any aspect such as effectiveness, efficiency or traceability.

[SOURCE ISO 9000:2005, 3.2.12]

4.13
quality management (QM)
coordinated activities to direct and control an organization with regard to quality
Note 1 to entry: Establishing quality plans (4.15) can be part of quality planning

Note 2 to entry: 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.

[SOURCE ISO 9000:2005, 3.2.8, modified, note 2 to entry has been added]

4.14
quality objective
something sought, or aimed for, related to quality (4.7)
Note 1 to entry: Quality objectives are generally based on the organization's quality policy.

Note 2 to entry: Quality objectives are generally specified for relevant functions and levels in the organization.

[SOURCE ISO 9000:2005, 3.2.5]

4.15
quality planning
part of quality management focused on setting quality objectives and specifying necessary operational processes and related resources to fulfil the quality objectives
Note 1 to entry: Establishing quality plans can be part of quality planning

[SOURCE ISO 9000:2005, 3.2.9]

4.16
quality policy
overall intentions and direction of an organization related to quality as formally expressed by top management
Note 1 to entry: Generally the quality policy is consistent with the overall policy of the organization and provides a framework for the setting of quality objectives.

Note 2 to entry: Quality management principles presented in this International Standard can form a basis for the establishment of a quality policy.

[SOURCE ISO 9000:2005, 3.2.4]

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296 **4.17**
297 **Total Quality Management (TQM)**
298 management approach of an organization, centered on quality, based on the participation of all its
299 members and aiming at long-term success through customer satisfaction, and benefits to all members of
300 the organization and to society

301 **4.18**
302 **Service quality**
303 overall collection of implicit and explicit characteristics that the service can satisfy the customer

304

305

306

307 5 Symbols and abbreviated terms

	Abbreviation	Full text
	CELTSC	Chinese E-Learning Technology Standardization Committee
	CWA	CEN Workshop Agreement
	DIN	Deutsches Institut für Normung e.V.
	RFDQ	Reference Framework for the Description of Quality Approaches
	RQC	Reference Quality Criteria
	SCORM	Sharable Content Object Reference Model
	W3C	World Wide Web Consortium
	IDEAL	Initiating, Diagnosing, Establishing, Acting, and Learning model
	PDCA	Plan-Do-Check-Act cycle
	SQ	Service Quality
	TQM	Total Quality Management
	QA	Quality Assurance
	QM	Quality Management

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