International Workshop Agreement

IWA 2

Quality management systems — Guidelines for the application of ISO 9001:2000 in education

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Systèmes de management de la qualité — Lignes directrices pour l'application de l'ISO 9001:2000 dans l'éducation

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). ISO's technical work is normally carried out through ISO technical committees in which each ISO member body has the right to be represented. International organizations, governmental and nongovernmental, in liaison with ISO, also take part in the work.

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Introduction

0.1 General

This International Workshop Agreement provides guidance to educational organizations for implementing an effective quality management system in conjunction with and based on ISO 9001:2000.

The objective of this International Workshop Agreement is to assure the overall effectiveness of the education organization's quality management system and the delivery and continual improvement of its educational service to the learner.

0.2 Quality management principles

The guidance to management offered in this International Workshop Agreement and ISO 9001 to lead organizations toward improved performance is based on the eight quality management principles. Four additional principles could be considered to sustain success. An example for educational organizations follows.

— **Process approach**: educational organizations should adopt a process approach when developing and implementing a quality management system. The organization should identify the degree to which each operational process creates learner value. For this reason it should include the processes related to the aim of the organization. Understanding interactions among processes is important for the educational organization to improve processes while balancing the system at large.

— **Understanding core competence** (customer focus) includes various enablers to ensure competitive advantage of the educational organization. These enablers include technology, skill, expertise and educational organization's culture. The collective strength specific to the educational organization leads to creation of learner value. The educational organization's core competence should support innovation by adapting to changes in the education environment to maintain its competitive advantage.

— **Total optimization** (systems approach to management) enables each operational process to achieve its objectives from an administrative standpoint.

— **Visionary leadership** (leadership) in educational organizations establishes vision, creates policy to realize the vision, and leads the educational organization in responding promptly to change in the education environment.

— **Factual approach** (factual approach to decision making) ensures administrative decisions based on clearly understood facts and not on convenient speculation. To this end, information and wisdom are combined with analysis, logical thinking, and the scientific approach.

— **Collaboration with partners** (mutually beneficial supplier relationships) is important to obtain optimal wisdom, skill, and creativity to achieve learner value.

— **Involvement of people** is the most effective and efficient way for an educational organization to achieve its objectives, to facilitate involvement of all people in the educational organization, and to make a maximum use of its people's competence, wisdom, skill, and creativity.

— **Continuous improvement** of the educational organization's learning process and the learner's personal learning enables educational organizations to keep creating values. This enables sustained growth in the external educational environment. It increases learning, personal wisdom, and the educational organization's wisdom in an innovative and constructive way.

The four additional principles for sustaining success include the following:

— **Creating learner value** to encourage learners to feel satisfied with the value they are receiving. Satisfaction measures determine the degree to which values meet learners' needs and expectations. Measurement results help educational organizations to increase value by improving their processes for creating learner value.

— **Focusing on social value** means attending to how learners and other interested parties feel about ethics, safety, and environmental conservation. Educational organizations can ensure sustainable growth only when the larger society appreciates value-added output of learners.

— **Agility** is essential to sustained growth in a drastically changing education environment and turns an ever-changing education environment into an opportunity for continuing successes in education.

— **Autonomy** is based on circumstance analysis and self-analysis. The educational organization should make its own value decisions and take actions on its own, free from stereotyping.

0.3 Relationship with ISO 9001

ISO 9001 specifies requirements for a quality management system that can be used for internal application by organizations for certification or for contractual purposes. It focuses on the effectiveness of the quality management system in meeting requirements.

This International Workshop Agreement is not intended for certification nor for contractual purposes. Rather, it provides guidance on a wide range of topics for the continuous improvement of an organization's performance, efficiency, and effectiveness. This International Workshop Agreement is recommended as a guide for educational organizations whose top management wishes to move beyond the requirements of ISO 9001, in pursuit of continuous improvement and sustainability of success.

Quality management systems — Guidelines for the application of ISO 9001:2000 in education

1 Scope

This International Workshop Agreement provides guidance for a quality management system in educational organizations.

The guidelines contained within this International Workshop Agreement do not add to, change or otherwise modify the requirements of ISO 9001:2000, and are not intended for use in contracts for conformity assessment or for certification.

Annex A provides a self-assessment questionnaire for educational organizations. Annex B lists examples of educational processes, measures, records and tools.

2 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.

ISO 9000:2005, *Quality management systems — Fundamentals and vocabulary*

ISO 9001:2000, *Quality management systems — Requirements*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 9000:2005 and the following apply.

3.1
educational organization
organization providing educational services

NOTE An educational organization can be a school at any academic level, or a training centre providing services independently or as part of a larger organization.

3.2
education provider
person who delivers education to learners

EXAMPLE Teacher, instructor, lecturer, professor and trainer.

4 Quality management system in the educational organization

4.1 General guidance

The educational organization should define the scope of the quality management system and the areas included for its application. Examples include departments within a larger educational organization, an entire educational organization, or all educational organizations in a given government.

The educational organization should define and manage the processes for the quality management system. Processes related to the aim of the organization should be included during and following the provision of the educational service:

a) education design;

b) curriculum development;

c) education delivery;

d) assessment of learning.

A list of processes carried out typically in educational organizations is given in B.1.

The organizational structure, responsibilities, resources, and services should support improvement of the quality management system.

Educational organizations should identify and ensure compliance with statutory, regulatory and accreditation requirements or any other norms that apply to them.

4.2 Documentation

4.2.1 General

The quality manual of an educational organization's quality management system should include terms and definitions required by the organization, applicable laws and regulations, accreditation and certification programmes, and support services, among others.

4.2.2 Quality manual

The quality manual should describe the scope of the educational organization's quality management system and interactions of its educational and support processes. It should include, or contain, references to all applicable documented procedures and other criteria upon which the quality management system is based.

4.2.3 Control of documents

The purpose of document control is to ensure that documents from the quality management system are continuously updated and are available for use in their current version only. The educational organization should establish documented procedures for:

a) editing, reviewing and approving internal documents, including their identification and revision status;

b) controlling external documents, mainly relevant regulations, that should be continuously updated;

c) ensuring that documents are available to the organization's personnel;

d) managing and controlling the learner's legal documents;

e) ensuring the traceability of educational services; and

f) verifying the fulfilment of requirements in the established educational stages.

Educational organizations should determine which documents define, direct, and control instruction and support activities; these documents should be controlled (see 7.1). Documents generated internally should be reviewed and approved for adequacy and conformity with the quality management system.

Information about the edition of textbooks or learning material, text supplements, workbooks or other instruction resources should be controlled and traceable to the design and development process. (See 7.3).

Procedures for activities such as course registration, lesson planning, research reporting should be maintained to provide the complete and current documents needed.

The document control system should include provisions for control of external documents such as legislation, rules, government circulars, accreditation regulations, and interested parties' concerns.

4.2.4 Control of records

A record provides information about the activities carried out in the organization, such as the results obtained in each stage of the learning process (provision of education).

The educational organization should establish retention times and record disposal – that are generally specified by legislation or regulation.

Learner and instructional records within the guidelines of privacy protection, such as those listed in B.3, are maintained by educational organizations.

5 Management responsibility in the educational organization

5.1 Management commitment

Top management should identify the educational service which satisfies the needs and expectations of the learner.

NOTE 1 In this International Workshop Agreement, the learner is the customer.

NOTE 2 In this International Workshop Agreement, the education service is the product.

Top management should identify and show its commitment to continuous improvement of the educational service and the quality management system.

Some strategies that top management should consider include:

a) communicating the quality management system plan throughout the educational organization;

b) strategic planning considering the aim and future goals of the educational organization;

c) encouraging the identification and use of best practices;

d) establishing a quality policy ensuring all the members of the organization know the vision and mission and its relation to the members' work;

e) establishing quality objectives to realize aims and intentions that are expressed in the quality policy to be realized in operating actions;

f) ensuring availability of human and material resources, necessary for achieving the objectives; and

g) measuring the organization performance to monitor the fulfilment of the established policies and objectives.

5.2 Customer focus

The educational organization top management should identify and document the needs and expectations of learners, defined as curriculum requirements that include learning outcomes and specific performance indicators. Learners' requirements are often implied.

5.3 Quality policy

The educational organization's top management should use the quality policy for guiding and leading the decision-making involved in the continuous improvement of the educational processes.

The quality policy should be documented.

The quality policy should be consistent with professional education standards, government rules and regulations, accreditation requirements and other policies of the educational organization. Top management should ensure that the quality policy is communicated and understood, implemented, and maintained by the organization.

The highest authority in the organization signing the quality policy should ensure its continued suitability.

5.4 Planning

5.4.1 Quality objectives

Objectives should be measurable and relevant to the activities and processes of the quality management system, aligned with the organization's quality policy, and with the requirements of accreditation programmes.

Quality objectives should be integrated in the educational organizations' overall objectives, support service specifications, and include performance measures or indicators. An educational organization should align its educational service outcomes with its objectives and provide performance measures through indicators. See B.2.

5.4.2 Quality management system planning

Top management should be responsible for planning the quality management system. Planning should include the activities and resources needed to ensure the effectiveness of the quality management system for the achievement of the educational organization's objectives.

5.5 Responsibility, authority and communication

5.5.1 Responsibility and authority

The educational organization's top management should clearly describe the organizational structure, with a focus on processes which support the development and deployment of the quality management system as well as the educational organization's objectives. This should include responsibility and authority delegation per functional area of the personnel involved in the quality management system processes.

5.5.2 Management representative

The management representative serves as liaison with the certifying body, when the educational organization aims to certify its quality management system.

A management representative should be appointed and given authority by the top management to monitor, evaluate and maintain the operation of the quality management system. This responsibility is for ensuring that the requirements of ISO 9001:2000 are met on an on-going basis to enforce the effectiveness and improvement of the quality management system. The representative should report to top management, and communicate with learners and other interested parties, on issues pertaining to the quality management system.

The appointed person(s) should develop appropriate skills in the areas of communication and inter personal relations. This person should be familiar with ISO 9000 standards, the principles of continuous improvement as well as with learner requirements, and should also be available for advice on the standards' implementation.

5.5.3 Internal communication

Top management of the educational organization should establish and implement effective processes for communicating all issues related to the performance of the quality management system, such as the quality policy, quality requirements, objectives, and achievements. Providing such information should aid in the improvement of the quality management system's performance, directly involving the organization's personnel in these achievements. Top management should actively encourage communication feedback from personnel as a means of involving them.

Examples of activities related to internal communication are listed in B.3.

The educational organization top management should ensure that communication takes place among different organizational levels, as well across different areas and departments.

5.6 Management review

5.6.1 General

The educational organization top management should conduct periodic reviews of the quality management system, according to the organization's needs, to assess the effectiveness of the quality management system in fulfilling objectives and satisfying requirements.

Outputs from reviews should provide data for strategic planning to promote performance improvement of the quality management system.

Records should be kept of the management reviews. See B.3.

The complexity and criticality of an educational organization's services and associated structure or support services are significant factors that should be considered in determining the frequency of a quality management system's reviews

5.6.2 Review input

A review of the quality management system should include the scheduled periodic review of the instructional and support systems, learner satisfaction, assessment criteria, evaluation results, documented improvements and design and development review when new curriculum is initiated. This list is neither exhaustive nor prescriptive. See ISO 9001:2000, 5.6.2.

5.6.3 Review output

As a result of reviewing the quality management system, the educational organization top management should carry out actions to improve the performance of the quality management system and its processes.

Outputs from the review of the quality management system should be recorded and communicated to all personnel of the educational organization.

6 Resource management in the educational organization

6.1 Provision of resources

The educational organization should identify the resource needs for the provision of the educational service. The organization should also ensure resource availability for the effective functioning of the quality management system, as well as providing resources for enhancing learner satisfaction by meeting learner requirements. The organization should:

a) establish information inputs for detecting the needs for resources;

b) perform resource planning for the short, medium and long term;

c) carry out follow-up of verification and assessment tasks; and

d) provide the resources to communicate effectively to the teaching staff, the administrative staff, employees and learners, to maintain and improve the effectiveness of the quality management system and to ensure that learner needs are met.

6.2 Human resources

6.2.1 General

The educational organization should identify all type of resources needed for the provision of the educational service and ensure their availability for the effective performance of the quality management system. See B.3 and ISO 9001:2000, 6.2.1.

6.2.2 Competence, awareness, and training

Top management should provide employees with information on how their competence, awareness, and training are aligned with their responsibilities, authorities, and academic-administrative activities.

The educational organization should carry out systematic actions for comparing competence needs to curriculum requirements. See B.1 and ISO 9001:2000, 6.2.2.

6.3 Infrastructure

The educational organization should identify the specific infrastructure, facilities, environment and equipment needed to support the teaching-learning processes, as well as the educational service.

The organization should define responsibilities and authorities for carrying out bidding, purchase, receipt, storage, safeguarding, installation, usage, and maintenance activities.

The educational organization should determine programmes for planning, providing and maintaining the necessary infrastructure, and for analyzing the associated risks regarding people's security, safety, and hygiene.

Infrastructure includes but is not limited to buildings, working spaces: classrooms, laboratories, workshops, libraries, green areas, online components and related services, such as health facilities, physical security, transport, bookstore, and cafeterias, among others.

6.4 Work environment

The provision of the educational service should include creating and maintaining conditions conducive to a learning environment that meets learner requirements.

The educational organization should provide evidence that the work environment is periodically assessed, as well as evidence of actions taken in this regard, when applicable. Outputs of this assessment should be included in the management review (5.6.2) and should serve as part of the basis for continuous improvement (8.5).

7 Realization of the educational service

7.1 Planning the realization

The educational organization should plan the different stages of the educational service, including design and development of teaching methods, design, developing, reviewing and updating study plans and curricula, learning assessment and follow-up, support services activities, resource allocation, evaluation criteria, and improvement procedures to achieve the desired results.

The organization should plan the necessary resources for all processes (6.1).

In educational organizations, processes for realization (transforming curriculum into learner behaviour) of the educational service are included in B.1.

The learning processes that should be controlled may include needs assessment, instructional design, development and delivery, and outcome measurement. The major support processes described in ISO 9001 should also be controlled. The control methods should be part of the management review (5.6) to assure that instructional specifications are met and that the control methods are consistent with accepted quality practices. Changes in the control methods of these major processes should be documented and the instruction should be evaluated after any change has taken place.

Monitoring should be carried out to verify that control methods are effective, and records should be kept.

7.2 Learner-related processes

Educational organizations typically provide a service that is intangible, not storable, and consumed during delivery. Educational organizations should provide the opportunity for learners to study existing knowledge and to practice its application. When learning takes place in an educational organization’s classroom buildings, expectations may include (but are not restricted to) the following:

a) safe, clean facilities with someone in charge;

b) two-way communication procedures between interested parties and the educational organization are responsive;

c) the organization’s personnel treat everyone with respect; and

d) appropriate activities are conducted by qualified personnel.

7.2.1 Determination of educational service-related requirements

The education requirements are typically expressed as behaviour needed to meet academic, professional and society’s expectations.

The specific requirements of the learner may be contained in his/her study plans and curricula and the educational service provided by high studies educational organizations, among others.

The educational service must comply with the legal, regulatory and accreditation requirements related to education.

Service-related requirements in an educational organization also include the requirements established by the organization to provide the educational service to the learner. This may include proof of previous studies, personal documents to be provided by the learner, the organization's administrative rules, and codes of conduct for learners, among others.

7.2.2 Review of requirements related to learning

The educational organization should review the requirements related to learning to ensure that

a) requirements are defined,

b) requirements differing from those previously expressed are resolved, and

c) it has the ability to meet the defined requirements.

When the learning requirements are changed, the organization should ensure that relevant documents are amended and that relevant personnel are made aware of the changed requirements.

Records should be kept of this review of learning requirements. See B.3.

7.2.3 Learner communication

The educational organization should determine and implement effective arrangements for communicating with learners in relation to:

a) course information,

b) learning plans, including curriculum, and

c) learner feedback, including learner complaints.

7.3 Design and development in the educational organization

7.3.1 Design and development planning

Top management should consider the design and development of education for the benefits of learners.

Design control activities should be appropriate to the purpose and duration of the education service.

Procedures should ensure that appropriate instruction materials match instruction requirements.

Calibrated equipment may be needed for some instructional purposes.

Needs assessments should include learner achievement and system effectiveness. These assessments should include potential or actual performance requirements to determine:

a) how instruction can help learners to become competent;

b) how new requirements can be met;

c) which specific measures of instructional effectiveness are appropriate; and

d) what skills match curricular requirements.

These assessments should provide information that can be used in the instruction review process. Where experimental validation of instruction is not permitted, a peer review process could be adopted.

A needs analysis report should provide input to the instructional design process, describing the results of the needs assessment and stating the goals for design.

A development process should be documented and used by developers. There may be a specific process statement for each delivery medium, or a generic process for all media. These processes include the sequence of steps in the development process; the personnel involved, the review process, and associated criteria.

7.3.2 Design and development inputs

The educational organization should identify the inputs to the design of curricula and keep records of these inputs. See B.3 and ISO 9001:2000, 7.3.2.

7.3.3 Design and development outputs

Design and development outputs should, at least, include skills and knowledge to be acquired, instruction strategies, and assessment of performance, among others. See B.3.

7.3.4 Design and development review

Participants from relevant functions at each identified stage should review the design and development results versus the corresponding requirements (e.g. professional profiles, competence certification). Records for complex matters could be minutes of formal meetings.

A design review (assessment and evaluation) process should be used for all instructional designs. The review should be accomplished by those who are responsible for the design, interested parties, and persons not responsible for the design. These people reviewing the design review reports should be responsible for judging the adequacy of the design to meet the requirements.

The design process should be evaluated in terms of the instructional outcome desired. This review should be based upon experience of successful projects and information from the subsequent development and implementation phases.

A development report or checklist should be generated to document the procedures used and how they ensure that the instruction meets the design specifications.

An instruction review process should be used for all instructions. Functions responsible for participating in the review should be identified. Consideration should be given to the fact that design review is an advisory activity. It is intended primarily to provide synergistic verification of the work of the development team. Functions responsible for authorizing the progression of the design to the next phase should be identified. Criteria for acceptance, in terms of readiness for use in instruction, should be specified and may include the following:

a) approval of content accuracy by one or more subject-matter specialists who did not participate in the development of the instruction;

b) approval of the prose, illustrations, and appearance by editorial and graphics specialists;

c) approval of the technological soundness by a technology specialist; trials of both the instruction and the criterion-referenced assessments with learners from the target population, and revisions made based upon the experience of learners; and

d) at least one of the trials should be in an environment similar to that in which the instruction will be conducted, including the support materials for learners as well as procedures and support materials for preparing instructors.

In the implementation phase, organizations should describe how the development process should be reviewed and revised based upon successive project-by-project experience with the process, including any learner complaints that become available during the process.

7.3.5 Design and development verification

Design verification should be performed in one or several stages according to the design and development plan. This activity should be performed internally by any specialist who has not participated in the design and development review, or externally, to carry out an independent verification of the review. The design and development output stage should match the design and development input specifications. Records of the verification outputs and any necessary actions should be maintained.

Records should be kept of this verification. See B.3.

7.3.6 Design and development validation

This process is carried out to ensure that planned characteristics of the educational services are met by the resulting curriculum or syllabus design.

Validation should be performed, generally, on the final design stages. Among others, piloting and certification are accepted validation methods. Records of the validation outputs and any necessary actions should be maintained.

Records should be kept of the results of this validation. See B.3.

7.3.7 Control of design and development changes

In the education environment the rapid evolution of knowledge leads to periodic curricula and syllabus review, and resulting revision. These changes should be identified, documented, authorized and communicated.

The revision of any subject should include the evaluation of its effect on the entire curriculum, and records should be maintained.

Records should be kept of these design and development changes. See B.3.

7.4 Purchasing

Top management of the organization should ensure that effective purchasing processes are established. They should include the evaluation and control of purchased educational services so that they really satisfy the needs and the requirements of the educational organization. Purchasing processes should comply with legal and regulatory requirements.

7.4.1 Purchasing process

To make an efficient use of financial resources, purchasing processes should include the timely, effective and accurate identification of needs and purchase of educational services to specifications. Evaluation of the cost of purchased educational services should take into account educational services performance, price and delivery.

Selection and evaluation of educational services suppliers should be based on criteria that ensure the compliance of the educational organization’s requirements as well as with current legislation.

7.4.2 Purchasing information

Purchasing information should describe appropriately the educational services to be purchased for ensuring they meet the needs of the educational organization and to establish an effective communication with suppliers.

7.4.3 Purchasing verification

Appraisal of purchased educational products or services should be made to be sure that they meet specified purchasing requirements.

Records should be kept of supplier assessments and of actions taken in this regard. See B.3.

7.5 Provision of the educational service

7.5.1 Control of the provision

Top management together with education providers should identify overall topics and themes of the subject matter to be taught, and the accepted methods of instruction. They should also establish various accepted measures for determining compliance with the learning objectives.

The educational organization should ensure the control of processes.

If a contract agreement requires further support of learners after completion of their programme of studies, the organization should indicate how such support would be given and monitored.

The aptitude, knowledge, skills, and ability of new learners should be assessed to ensure that the instruction can be provided at an appropriate level and at an appropriate pace. Advertising, course brochures, and other items produced by the educational organization should state clearly how prior education, training, and experience are related to the learning needs of learners. The absence of specific entrance requirements need not negate an assessment of individual learner needs that may be then used to adjust the instruction to those individual needs.

Records should be established and kept to identify the actual instruction provided. See B.3.

7.5.2 Validation of processes

See B.1 and ISO 9001:2000, 7.5.2.

7.5.3 Identification and traceability

Where traceability is a requirement, the educational organization should control and record the unique identification of the educational service (see 4.2.4).

Identification and traceability of relevant information should include, as necessary:

a) curricula, course and content unit codes;

b) learner identification records;

c) learner group schedules;

d) textbooks/notes;

e) laboratory equipment; and

f) research contracts.

NOTE Controlling this information is sometimes referred to as configuration management.

External documents which show evidence of the learner's academic status, should be consistent with the information required by the educational organization.

The ongoing monitoring and performance status of learners/groups should be identified and recorded.

7.5.4 Customer property

In the educational organization, property provided by learners is that provided at the moment of admission for registration or registration renewal purposes and during the education service provision.

Learner's property includes items such as textbooks, workbooks, case studies, special education provisions, computers, software, art supplies, or facilities supplied by companies that purchase instruction for employees.

Standards and specifications may be established for supplied materials to ensure suitability for use in instruction.

If any learner property is lost, this should be reported to the learner and records maintained. See B.3.

7.5.5 Preservation

The educational organization should consider preserving academic documents such as syllabus, curricula and printed or electronic materials (books, course notes, video tapes, computer programmes).

Supplies for education and/or training processes could also be included, e.g. chemicals for laboratories, raw or processed materials for pilot plants, and limited shelf-life educational services for teaching purposes or research and development work.

There may be some limited applications of this element in ISO 9001 which include the method of delivery, how materials should be presented to the learner, equipment that needs to be available (e.g. video tapes), etc.

For resident learners there may also be products or services provided related to health, counselling, personal safety, lodgings, and food services among others.

7.6 Control of monitoring and measuring devices

The educational organization should establish valid tests or learning assessment tools.

Monitoring and measurement should be carried out during instruction to assure conformity with the study plans, curricula, and educational programmes. These should include, without being limited to, learner performance profiles, assessments of personnel records, written course assessments, observations which note whether instructors are following the plan, and final examinations.

Educational organizations should establish means for ensuring that tests are secure and their results are valid.

When tests, assessment tools, or software are found to be invalid, the educational organization should record actions taken to correct the invalidity. See B.3.

8 Measurement, analysis and improvement in the educational organization

8.1 General guidance

Outcomes from monitoring and measurement may be used to identify areas for improving the quality management system and educational processes. See B.1.

8.2 Monitoring and measurement

8.2.1 Customer (learner) satisfaction

The educational organization should determine the learner's perception of the degree to which the educational service meets his or her expectations. Trend data of learner satisfaction should be supported by objective evidence. The educational organization should discuss with learners their satisfaction perceptions. See B.3.

8.2.2 Internal audit

The educational organization should conduct internal audits according to an audit programme to assess the performance of the quality management system and educational processes. Audits should verify the use of established methods for educational processes. See B.1.

The educational organization should document the final report of the internal audit. Feedback from the audit results should be used to identify the need for corrective and preventive actions. See B.4.

Records should be kept of internal audits. See B.3.

8.2.3 Monitoring and measurement of processes

The educational organization should measure and monitor the performance and the effectiveness of the processes used to manage and deliver the educational service. Measurement of key and supporting educational processes should be carried out at appropriate stages during the realization of the processes.

The educational organization should document methods used to measure the performance and the effectiveness of the processes. See B.1 and B.3.

8.2.4 Monitoring and measurement of the educational service

The educational organization should establish and use methods for monitoring and measuring the educational service at planned intervals during its realization as well as the final outcomes, to verify that they meet established design requirements as well as statutory, regulatory and accreditation requirements as applicable.

For all types of education, specific evaluation tools, such as assessments, tests, examinations, or demonstrations should be used to measure the progress toward fulfilling the curriculum requirements.

Performance appraisal of learning providers should also be carried out as part of the educational service. A range of measures from observation of performance to a full set of examinations may be used.

The results of this evaluation process should be recorded and used to demonstrate the degree to which the learning process achieved the planned objectives. See B.3.

8.3 Control of nonconforming products

The educational organization should establish a documented procedure to identify educational services as well as final outcomes, which are nonconforming to established design, statutory and regulatory requirements, or organizational objectives and curriculum. This should be carried out at appropriate stages of the realization of the educational service, to prevent their unintended use or delivery.

Responsibilities and authorities should be clearly assigned to personnel for dealing with nonconforming educational services and for releasing the educational service after it is corrected and the nonconformity has been eliminated. See B.1.

The educational organization may establish alternative means by which to correct nonconforming achievement in individual learners to avoid learner's abandonment of the educational programme.

Records should be kept of the nature of nonconformities and actions taken in this regard. See B.3.

8.4 Analysis of data

The educational organization should analyze collected data and information, making use of, but not limited to, accepted methods of analysis and solution of problems.

Data should be used to support continuous improvement through improvement projects, as well as corrective and preventive actions (see 8.5.2 and 8.5.3).

Applicable statistical techniques should be applied for analyzing every aspect of the quality management system. Statistical analysis of the variability for such measures as performance indicators, drop-out rates, achievement records, learner satisfaction, and trend analysis may help assure learners that effective process control is a part of the quality management system.

Measurement and evaluation should be continual and direct during the instruction. Effectiveness is not always known until the enhanced skills and knowledge are applied.

The educational organization should analyze data from various sources to compare the performance of the quality management system and the educational processes to identify areas for improvement. See B.4 and ISO 9001:2000, 8.4.

8.5 Improvement

8.5.1 Continuous improvement

The educational organization should continuously improve the effectiveness of its quality management system and its educational processes by encouraging personnel to identify and establish improvement projects within their scope.

Appropriate methods used to identify potential improvement are based on quality analysis and statistical methods. See B.4.

The improvement process should also include the actions taken to address complaints, suggestions, and comments of learners and interested parties. See B.3.

8.5.2 Corrective action

The educational organization should establish a documented procedure for implementing corrective actions that are identified from an analysis of the causes of nonconformities and of improvement opportunities. Corrective actions should be taken to eliminate nonconformities occurring during the performance of the quality management system and the educational service. See B.1 and B.2.

Corrective actions should be recorded. See B.3.

8.5.3 Preventive action

The educational organization should establish a documented procedure for implementing preventive actions that result from analyzing potential nonconformities and improvement opportunities within the quality management system and the educational service. See B.2.

Preventive actions should be recorded and communicated to the appropriate areas of the organization.

The learning resulting from the preventive action process should be reviewed and communicated throughout the organization. See B.3.

Annex A
(informative)

Self-assessment for educational organizations

Name of person providing assessment: Date:

Educational organization:

Instructions

Typically it takes less than one hour to complete your self-assessment. Please use the following "level scale" to indicate your basis for answering questions on the numbered topics. Please record the level you use in the blank following each statement. For example,

Example

"Process used by education providers routinely to determine, review, and improve learner's proficiency __2__"

The "2" means when you answer questions about this process you rely on responses to complaints or mandates as needed. Data are reviewed as required and limited additional educational organization data on results are available.

Level scale

Level 1 — No formal approach
Guidance - No systemic approach is evident. There are poor results or unpredictable results. Data are available, but not used for improvement of performance.

Level 2 — Reactive approach
Guidance – Problem-based approach. The educational organization responds to complaints or mandates as needed. Data are reviewed as required. Limited additional educational organization data on results is available.

Level 3 — Stable approach
Guidance - Data and detailed, timely local data are used to guide conformance to requirements. There is an established method or an approach. There is concern for improvement.

Level 4 — Systematic approach
Guidance - Systemic process alignment with good results and sustained improvement trends. The data are effectively used and learner performance continuously improved. State standards are consistently met.

Level 5 — Substantial continuous improvement
Guidance - Strongly integrated system management with institutionalized improvements. Learners are proficient according to educational organization criteria.

Statements

The levels you assign to each statement are for the sole purpose of planning. It may help you establish a baseline, for identifying needs for setting priorities and for measuring progress. It may also be useful to help you identify appropriate applications for your educational organization. The following statements relate to the main clauses of a quality management system based on ISO 9001:2000.

Clause 4 — Quality Management System

1) Process used to determine, review, and improve learner's proficiency ____
2) Activities enabling each learner to achieve proficient performance ____
3) Assessments verifying each learner's knowledge and skill required ____
4) Alignment of standards, curriculum, instruction, testing, and improvement ____
5) Measures of each learner's motivation for meeting requirements ____
6) Learning support proven to be effective for each learner ____
7) Systematic monitoring of all processes related to each learner's proficiency ____
8) Effectiveness of classroom facilities and resources ____
9) Validation of curriculum to meet both career and education requirements ____

Clause 5 — Quality policy in the educational organization

1) Selection and use of information to support management system ____
2) Timely data that are effective in improving learning and teaching processes ____
3) Criteria and methods for comparing data to improve processes ____
4) Analyzing data from outside your educational organization ____
5) Integration of information from all parts of your educational organization ____
6) Translating your review findings into quality system effectiveness ____
7) Records of effective changes made to your quality system ____
8) Evidence of system changes have improved results ____

Clause 6 — Education resources management

1) Effective administration of learner learning processes ____
2) Critical curriculum design requirements for each learner ____
3) Support services to enable learners to meet educational requirements____
4) Processes monitored on a day-to-day basis ____
5) Assessing processes and implement changes ____
6) Processes that improve learner proficiency ____
7) Reduced wasteful activities ___

Clause 7 — Realization of the educational services

1) Evidence of substantial and continuous performance improvement ____
2) Successful projects to improve existing or new processes ____
3) Small-step improvements that have been made within existing processes ____
4) Effective breakthrough improvements that have been made to your system ____
5) Ongoing process improvements aligned with learning requirements ____
6) Curriculum aligned with learning improvements ____
7) Resources and planning aligned with learner improvement ____
8) Measurable performance targets for learning processes ____
9) Employee's work assignments support quality management systems____
10) Verified credentials on skills and performance required for employees ____
11) Employee's work processes related to learner achievement ____
12) Verified employee's understanding of assigned responsibilities ____
13) Verified parent's understanding of the educational expectations for their child____
14) Leadership that aligns system priorities with each learners' requirements ____
15) Goals set for future opportunities to sustain a learning environment ____
16) Assigned decision-making responsibility and accountability ____
17) People closest to problems are central in problem solving ____
18) Records of performance results documenting leadership effectiveness ____
19) Developed leadership abilities among your learning providers ____

Clause 8 — Measurement, analysis, and improvement

1) Measured community perceptions of satisfaction organization ____
2) Improved community satisfaction with educational effectiveness ____
3) Follow-up processes to provide information to community members ____
4) Effective corrective actions responses to community complaints____
5) Planning actions based on community needs____
6) Effective relationships with educational organizations ____
7) Effective learners' transitions to the next grade ____
8) Verified responses to community needs ____
9) System goals related to the needs of your community priorities ____

Annex B
(informative)

Examples of educational processes, measures, records and tools

B.1 Processes

1) accrediting and certifying programmes
2) acquiring materials and other resources
3) administering services
4) admitting applicants
5) allocating resources necessary to carry out off-campus and online instruction
6) allocating spaces for classrooms, laboratories, workshops, libraries, and other similar spaces
7) allocating teaching loads
8) assessing performance
9) communicating best practices
10) communicating the quality management system plan throughout the organization
11) converting information into knowledge
12) corrective and preventive actions
13) deciding which measurements will be of value to monitor
14) teaching methods
15) designing and developing validation results of curricula or syllabus
16) designing and developing curricula
17) developing course catalogues
18) developing course material
19) developing, reviewing and updating study plans and curricula
20) ensuring availability of human and material resources, necessary for achieving the objectives
21) ensuring that ISO 9001 requirements are known, implemented, and maintained
22) establishing information inputs for detecting the needs for resources
23) establishing a quality policy that allows all the members of the organization to know the vision and mission

24) establishing methods to verify academic performance

25) establishing quality objectives to realize aims and intentions, expressed in the quality policy, in operating actions

26) evaluating current curriculum

27) hiring of administrative and teaching staff

28) identifying preventive action

29) identifying the target learner population

30) inventorying infrastructure maintenance schedules

31) inventorying laboratory equipment

32) learning process management

33) maintaining facilities

34) management review

35) management review of the quality management system

36) marketing and recruitment process

37) measuring the organization performance to monitor the fulfilment of the established policies and objectives

38) mode of delivery

39) monitoring and measurement of educational processes

40) operating libraries, workshops, and laboratories

41) performing resource planning at a short, medium and long term

42) providing library, audiovisual equipment, computers, and other services

43) providing practice manuals for laboratories and workshops

44) providing security, safety and civil protection services

45) providing support services for the learning process in classrooms, laboratories, and libraries, among others

46) providing teaching capability

47) publishing organization bulletins for communicating to learners and interested parties

48) securing accreditation of programmes, professional degrees, and post-graduate studies

49) selecting and enrolling learners

50) specifying changes in instruction activities

51) stating how the gaps are to be met in performance terms and state the rationale

52) strategic planning considering the aim and future goals of the organizations

53) training support personnel

54) tutoring and consulting on vocational opportunities

55) verifying that quality management system requirements have been achieved

56) verifying that sufficient resources have been provided to achieve quality objectives

57) verifying that the procedures for the achievement of educational objectives have been fully implemented

B.2 Measures

1) approval rate

2) difficulty level of objectives

3) dropout rate

4) high rates of dropout

5) higher education, graduation or certification rates

6) low job and education placement rates of learners

7) measurements of variables related to learners, teaching and support staff

8) number of academic and clerical agreements

9) number of accredited academic programmes

10) number of international awards granted to academic personnel

11) number of national awards granted to academic personnel

12) number of research projects sponsored by external sources

13) observing and making qualitative and/or quantitative measurements

14) performance outcomes from the quality management system and the educational processes

15) reliable of media

16) revalidation frequency

17) satisfaction surveys of learners and other identified interested parties

18) specific measures of instructional effectiveness

19) success rate for graduate learner's level

20) success rates

21) teaching capability of the education providers

22) teaching staff and learner performance

23) competencies of the teaching staff (educational providers)

24) trends

25) yearly number of achieved patents

26) yearly number of advanced degrees granted

27) yearly number of research publications

B.3 Records

1) achievement of quality objective

2) activities of the organization personnel that affect quality

3) administration of enrolments and assessments

4) annual self-assessments

5) applicable laws and regulations

6) applications, records or documents given by the learner for his registration or registration renewal

7) audio-visual and electronic media usage

8) certification, licenses or occupational requirements

9) classroom observations

10) communication plan for reviewing and follow-up

11) complaints

12) control of design and development changes in curricula, course calendars, timetables and prerequisites

13) copyright or permission to use information

14) course notes and examination papers

15) curricula, course, and content unit codes

16) curriculum design

17) learners' goods and properties

18) data on research of learner learning capacity

19) design report

20) development report

21) deviations from educational programmes and training plans for the organization's personnel

22) documents given by learners, such as certificates, diplomas of previous scholar levels, personal

23) educator and course questionnaires

24) equipment approval and teachers' qualifications

25) evidence of completion (certificate, credit transcript, diploma)

26) exams, tests or paperwork performed by the learner

27) facilities for courses provided at the learner's premises

28) ID documents (birth certificate, identifications and other similar ones)

29) information coming from trends, indicators of teaching and administrative personnel performance

30) inputs from learners and other identified interested parties: parents, industry, government and society

31) instruction strategies

32) instructor certifications or qualifications

33) intellectual property agreements, theses, dissertations, and copyrighted materials

34) learner course records

35) learner group schedules

36) learner identification records

37) learner performance records and instruction reviews

38) learner/learner owned equipment and

39) learner's study plan

40) learners' enrolment

41) learners' organizations

42) list of instructors' names

43) loss, damage, or unsuitable use of learner supplied materials

44) medical exams, studies or certificates of the learner

45) national public policies related to the educational field

46) non-achievement of educational objectives

47) nonconforming educational service

48) organization quality policies

49) output data from design review, verification, and validation

50) modification of educational service design and development

51) outputs from audits and management review

52) performance of educational services

53) prerequisites for courses

54) quality records as stated in the quality management system

55) records and documents of the learner's academic history

56) records of academic and administrative staff competence

57) regulatory and organizational policies

58) relevant pre-requisite knowledge or experience

59) research contracts

60) research outcomes

61) results on effectiveness of instructional materials

62) skills and knowledge to be acquired

63) study plans and curricula

64) teaching-learning activities

65) textbook and edition

66) the course syllabus

67) the learner group schedule

68) the next grade level curriculum

69) training plans for the organizations' personnel

70) works, prototypes developed and others

B.4 Tools

1) cause and effect diagrams

2) control graph

3) cost analysis related to the achievement of quality objectives

4) learner and other identified interested party satisfaction surveys

5) employee surveys and suggestion schemes

6) failure mode and effect analysis

7) financially focused methodologies to ensure that expenditures are justified in relation to the resulting benefits

8) flow charts

9) force field analysis

10) formal and informal assessments

11) histograms

12) impact evaluation

13) needs analysis for the provision of education

14) Pareto charts

15) process conceptual diagrams

16) statistical control graphs

17) verification and validation of methods

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