

Auditing Educational Quality Management Systems - Now and in the Near Future

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Abstract— The paper presents important standards that need to be considered by educational organizations when auditing their quality management systems. Traditionally, these quality management systems are based on ISO 9001, and are audited based on ISO 19011. Starting in 2018, a new standard - ISO 21001 provides requirements and guidance for the management systems of educational organizations, including universities. In 2025 all of the three standards mentioned above are undergoing changes that will affect the way educational quality management systems are developed, implemented, audited, and improved.

Keywords— auditing, educational management system, quality management systems.

I. INTRODUCTION

Quality management systems (QMS) have been standardized at international level by ISO, the International Organization for Standardization, since the 1980s with the publication of the ISO 9000 series of standards. The requirements for a QMS of organizations of any size and sector are specified in ISO 9001. Its current fifth edition – ISO 9001:2015 [1], was last reviewed and confirmed in 2021, but in November 2023 a decision for its revision was made. An amendment to ISO 9001:2015 was published in February 2024 and it reflects the need to adapt QMS with elements dealing with climate action changes [2].

The history of standardization of educational QMS can be traced back to the two editions of the International Workshop Agreement (IWA) “Quality management systems - Guidelines for the application of ISO 9001:2000 in education” IWA-2:2003 [3] and IWA-2:2007 [4]. Publications [5], [6] and [7] present the period preceding the publication of ISO 21001 [8].

The first standard with guidelines for auditing QMS was published in 1990 as ISO 10011. In 2002 it was replaced by ISO 19011 “Guidelines for quality and/or

environmental management systems auditing”. The wide variety of management systems caused a change in the title and applicability of its second edition ISO 19011:2011 “Guidelines for auditing management systems”. The third edition of ISO 19011 was published in July 2018 and is still valid today [9].

The purpose of this paper is to demonstrate key elements of auditing educational QMS nowadays, and to shed light onto the upcoming changes.

II. MATERIALS AND METHODS

The main method used in this paper is comparative analysis.

The first analysis is based on the comparison of the structure of ISO 9001:2015 – the basic QMS standard, and ISO 21001:2018 – the standard for educational organizations.

The second analysis is the effect of the latest edition of Annex SL, Appendix 2 “Harmonized structure for Management System Standards with guidance for use” [10] on the future revisions of ISO 9001 and ISO 21001.

The third comparative analysis is of the QMS implemented in two Bulgarian universities.

The three segments of the comparative analysis are then used as inputs to establish the auditing process and its typical documentation – audit programme, audit plan, audit questionnaire, audit report, etc. Auditing methods are presented as on-site and remote auditing as performed during the COVID-19 pandemic at the abovementioned universities.

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III. RESULTS AND DISCUSSION

A. Comparison of the structure of ISO 9001:2015 and ISO 21001:2018

In general, both standards share the common structure and common requirements of Annex SL. As expected, because ISO 21001 is published 3 years later than ISO 9001, it is adapted to a more recent version of Annex SL.

There are no major differences in Clause 4 “Context of the organization” and for both standards it is comprised of: 4.1 “Understanding the organization and its context”, 4.2 “Understanding the needs and expectations of interested parties”, 4.3 Determining the scope of the quality management system (QMS)/Management system for educational organizations (EOMS), and 4.4 “QMS and its processes”/EOMS.

The overall structure of Clause 5 “Leadership” is also identical for ISO 9001 and ISO 21001: 5.1 “Leadership and commitment”, 5.2 “Policy”, and 5.3 “Organizational roles, responsibilities and authorities”. The first difference is in Clause 5.1. ISO 9001 has 5.1.1 “General” and 5.1.2 “Customer focus” which is a direct reference to the first quality management principle. Even though ISO 21001 has the same name for Clause 5.1.1 “General” its content is richer than the one of ISO 9001. “Customer focus” is replaced by 5.1.2 “Focus on learners and other beneficiaries” which is the first management principle of EOMS. Furthermore, ISO 21001 has one more clause - 5.1.3 “Additional requirements for special needs education”.

Clause 6 “Planning” has the same structure for the two standards considered in this comparison. It comprises of: 6.1 “Actions to address risks and opportunities”, 6.2 “QMS/EOMS objectives and planning to achieve them”, and 6.3 “Planning of changes”.

Clause 7 “Support” has identical overall structure: Clause 7.1 “Resources”, Clause 7.2 “Competence”, Clause 7.3 “Awareness”, Clause 7.4 “Communication”, and Clause 7.5 “Documented information”. The main additions in EOMS in comparison to QMS are:

- Clause 7.1.6 “Organizational knowledge”: expanded with a new element 7.1.6.2 “Learning resources”;
- Clause 7.2.2 “Additional requirements for special needs education”;
- Clauses 7.4.2 “Communication purposes” and 7.4.3 “Communication arrangements”.

Just like most ISO management system standards, the core processes in ISO 9001 and ISO 21001 are concentrated in Clause 8. Here too, ISO 21001 is richer in content and expands basic QMS requirements.

For example, Clause 8.1 “Operational planning and control” is enriched with:

- Clause 8.1.2 “Specific operational planning and control of educational products and services”, and

- Clause 8.1.3 “Additional requirements for special needs education”.

Clause 8.2 “Requirements for products and services” has different number of sub-clauses and content in the two standards discussed (see Table 1).

TABLE 1 COMPARISON OF REQUIREMENTS FOR PRODUCTS AND SERVICES

ISO 9001:2015	ISO 21001:2018
8.2.1 Customer communication	8.2.2 Communicating the requirements for the educational products and services
8.2.2 Determining the requirements for products and services	8.2.1 Determining the requirements for the educational products and services
8.2.3 Review of the requirements for products and services	
8.2.4 Changes to requirements for products and services	8.2.3 Changes to requirements for the educational products and services

Clause 8.3 “Design and development of products and services” in ISO 21001 has the following additional elements:

- Clause 8.3.4.2 “Educational service design and development controls”;
- Clause 8.3.4.3 “Curriculum design and development controls”, and
- Clause 8.3.4.4 “Summative assessment design and development controls”.

All requirements for Clause 8.4 “Control of externally provided processes, products and services” in ISO 9001 and ISO 21001 are the same.

Clause 8.5 “Delivery of the educational products and services” in ISO 21001 is much more industry specific than ISO 9001. The content of Clause 8.5.1 “Control of production and service provision” is augmented in ISO 21001 with the following clauses:

- 8.5.1.2 “Admission of learners” that includes pre-admission information and conditions for admission;
- 8.5.1.3 “Delivery of educational products and services”;
- 8.5.1.4 “Summative assessment”;
- 8.5.1.5 “Recognition of assessed learning”, and
- 8.5.1.6 “Additional requirements for special needs education”.

Clause 8.5.2 “Identification and traceability” has the same title in both standards.

Nevertheless, its content is substantially different due to the different nature of educational services when compared to industrial products and other types of services.

Clause 8.5.3 “Property belonging to customers or external providers” in ISO 9001 is very similar to Clause

8.5.3 “Property belonging to interested parties”. The main differences are in the “Note” to this clause in ISO 21001 that lists “certificates, diplomas and other relevant documents” as examples of property of interested parties.

The requirements of Clause 8.5.4 “Preservation”, and only the “Note” from ISO 9001 is missing in ISO 21001.

Practically, Clause 8.5.5 “Post-delivery activities” of ISO 9001 is entirely different from Clause 8.5.5 “Protection and transparency of learners’ data” in ISO 21001 that deals with legal requirements and technological measures for data protection.

There are no differences in the content of Clause 8.5.6 “Control of changes in the educational products and services” in both standards.

Clause 8.6 “Release of products and services” is clarified with a “Note” in Clause 8.6 “Release of the educational products and services” in ISO 21001.

There is a minor change in the numbering of Clause 8.7 “Control of nonconforming outputs” in the two standards. ISO 21001 has an additional requirement to retain documented information that “describes the delivery of the programmes”.

Clause 9 “Performance evaluation” contains the same 3 sub-clauses in both ISO 9001 and ISO 21001. But their structure and focus are different. Clause 9.1.1 “General” is very similar in both standards, and Clause “Analysis and evaluation” in ISO 9001 is numbered as “9.1.3”, whereas in ISO 21001 it is “9.1.5”. Clause 9.1.2 “Customer satisfaction” is replaced in ISO 21001 by the following elements:

- Clause 9.1.2 “Satisfaction of learners, other beneficiaries and staff” which includes monitoring of satisfaction and handling of complaints and appeals;
- Clause 9.1.3 “Other monitoring and measuring needs”, and
- Clause 9.1.4 “Methods for monitoring, measurement, analysis and evaluation”.

Clause 9.2 “Internal audit” is substantially the same for both standards. Still, ISO 21001 requires that “Auditors shall not audit their own work.”. Both standards direct their readers and implementers to use ISO 19001 for guidance on auditing.

The differences in Clause 9.3 “Management review” are mainly in the inputs. In addition to the inputs required in ISO 9001, ISO 21001 also requires “formative and summative assessment outcomes” and “staff feedback related to activities to enhance their competence” are taken into consideration.

Clause 10 “Improvement” is structurally different in the two standards, the sequence of text is changed but the approach to improvement is identical (see Table 2).

TABLE 2 COMPARISON OF CLAUSE 10 “IMPROVEMENT”

ISO 9001:2015	ISO 21001:2018
10.1 General	10.3 Opportunities for improvement
10.2 Nonconformity and corrective action	10.1 Nonconformity and corrective action
10.3 Continual improvement	10.2 Continual improvement

B. Effect of Annex SL on the Future Revisions of ISO 9001 and ISO 21001

In 2024, Annex SL which serves as the backbone for creating the structure of both ISO 9001:2015 and ISO 21001:2018 has been changed. It now incorporates 20 terms and definitions that shall constitute an integral part of any ISO management system standard.

Climate change is the other factor that organizations shall deal with in their management systems.

There is a new requirement in Clause 4.1 “Understanding the organization and its context”: “The organization shall determine whether climate change is a relevant issue.”.

A “Note” was added to Clause 4.2 “Understanding the needs and expectations of interested parties”: “Relevant interested parties can have requirements related to climate change.”. In case they do have such requirements, organizations will have to prove that this issue is addressed in their QMS or EOMS.

To solve this emerging problem organizations may find helpful the following information by ISO:

- Guide 82 “Guidelines for addressing sustainability in standards” [11];
- Guide 84 “Guidelines for addressing climate change in standards” [12], and
- IWA 42 “Net Zero Guiding Principles” [13].

Another flagship ISO document that is related to the Annex SL structure and will have a significant impact on ISO standards, their linkage to the UN Sustainable Development Goals (SDGs), and their implementation in organizations is ISO/UNDP PAS 53002:2024 [14].

C. The Quality Management Systems of Two Bulgarian Universities

From a chronological perspective, ISO 9001 became popular in the early 1990s with the development of market economy and private businesses. Similar to the universities in other countries, Bulgarian universities aspire for ISO 9001 certification of their QMS in order to attract partners, researchers and students.

The QMS of the universities in Bulgaria is based on their internal management system that has to conform to the requirements of the National Evaluation and Accreditation Agency (NEAA). Thus, for some universities, the certification to ISO 9001 is considered an added cost with little or no value.

Only the universities with visionary leaders and staff who are competent in quality management and standardization see the untamed potential of developing, maintaining and improving a QMS/EOMS.

The first university considered in this paper was among the forerunners in teaching quality management. Initially it started as individual courses such as Quality Control, Quality Management Systems, Auditing Quality Management Systems, etc. Then it went on to create complete Bachelor's and Master's degree courses in the field of quality management. The professors were involved in internal and external auditor training and supported the development of the university's QMS. Even though efforts were made to develop and implement an ISO 21001-based EOMS, the lack of top management engagement and support suffocated the initiative.

The other university started in a similar manner. The main difference is that it focused more on the performance of the management system. This made the QMS leaner, agile and adaptable to the current context and emerging needs.

D. Auditing Educational Quality Management Systems

Both universities undergo internal audits performed by trained internal auditors, and external audits for accreditation done periodically by the NEAA. All three types of accreditation procedures (institutional accreditation [15], programme accreditation for professional field [16], and programme accreditation for a doctorate programme [17]) have specific criteria that are listed in 10 standards. Several of them deal with the "internal system of quality assurance". These NEAA audits are done by a team of experts from identical or similar scientific fields and coming from competitor higher education institutions.

The internal audits planned in the audit programme and initiated by an order of the rector of the university. Due to the nature of the academic calendar, usually internal audits are done twice a year, or once per semester.

Most often, the audits are done on-site by visiting the locations specified in the audit plan. The lead auditor establishes the concrete offices and timing based on the availability of the auditees who normally are professors and administrative staff. The preliminary audit plan is communicated to the team of internal auditors which is composed by the lead auditor (usually the Vice Dean for Quality of Education and Accreditation) and other audit team members who may be professors, administrative staff, students, involved representatives of business organizations, etc.

Another item to be considered in the preparation for the audit is risk. For example, the risk may occur from not closing nonconformities from previous audits, not auditing a specific department or degree programme for too long, turnover of teaching staff, introduction of new programmes, changes in curricula, changes in relevant legislation, upcoming accreditation procedures, etc. All these factors trigger an increase of the number and frequency of audits.

During the on-site audits the auditors complete their audit checklists and audit reports. Most of the questions are standardized and cover items such as: completeness and maintenance of educational documentation (curricula, test questions, ECTS information pages, exam grades and reports, graduation exams, etc.), planning and justification of classes taken, outsourcing of professors, assessments of teaching and administrative staff, awareness of the quality policy of the university, and other relevant elements.

The audit report is submitted to the Centre for Quality of Education (or a similar function within the university) and a copy is forwarded to the audited faculty and/or department. The audit findings are classified as: conformity, nonconformity (major or minor), opportunity for improvement or best practice/lesson learned. In case of a nonconformity, the auditee proposes corrective actions that are subject to approval by the auditor and/or the top management of the university.

The collected information and all audit files are stored at the Centre for Quality of Education. They are being summarized and presented at management reviews for the rector, the rector's team and the academic council. The information about internal audits is integrated in the yearly report of the university. Its public version is communicated to relevant interested parties, if necessary and upon request.

During the COVID-19 pandemic audits were done in a mixed mode. Everything that was available online was audited remotely using videoconferencing and sharing screens or files stored online. Physical distancing and limited working hours were respected in order to minimize health risks for the auditors and the auditees.

E. Recent developments in ISO 9001, ISO 21001, and ISO 19011

The standard with requirements for quality management systems is being updated as of 2025-01-17. The draft of the sixth edition of ISO 9001 is being reviewed by Technical Committee ISO/TC 176 "Quality management and quality assurance"/SC 2 "Quality systems" [18].

The second edition of ISO 21001 is at the Final Draft stage as of December 2024 [19]. Auditing requirements for EOMS are available since October 2023 when ISO/TS 21030 has been published [20].

The draft of the fourth edition of ISO 19011 is under development as of January 2025 [21].

IV. CONCLUSIONS

Education is intrinsically related to quality and one cannot go without the other.

This paper has demonstrated how the internal management system of a university can be established in accordance with the requirements of ISO 9001. For universities that wish to go beyond basic quality management, a solution to migrate the QMS to ISO 21001 is suggested. Both standards are auditable using ISO 19011.

In 2025 all of the abovementioned standards will be replaced by new editions and universities will have to update their existing management systems and practices.

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