E-learning Quality Assurance: Approaches, Standards, Practices

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The article presents modern approaches and standards for the development of e-learning industry and the ultimate importance of international ISO/IEC IT LET standards for quality management and quality assurance in e-learning oriented universities and university clusters. It shows the high harmonization level between the national GOST R ICTE standards and the international ISO/IEC IT LET standards, and the experience of GOST R ISO/IEC standards implementation for quality assurance in Russian educational system.

At the turn of the third millennium, information and communication technologies have become a catalyst for the development of national and international educational system, the transformation of traditional technologies and teaching methods, new forms of e-Learning and the formation of cross-border and transnational educational structures of a new generation. Analysis of the best practices in different countries and development of additional national and international standards are particularly relevant in this dynamic area. The use of international standards for the development and certification of e-Learning is the basis for competitiveness and integration of educational systems.

The information society construction and the development of cross-border education necessitated the rapid adaptation of the Russian educational system to the global rules and standards for quality assurance, standardization, accreditation, licensing, conformity assessment and mutual recognition of test results.

The International Organization for Standardization and the International Electro-technical Committee jointly develop international standards in the field of information technology within the framework of the First Joint Technical Committee (JTC1), which includes from 1999 36th Subcommittee (SC36) "Information technology for learning, education and training" [1-3]. Currently, the SC36 operation involved representatives from 45 countries in the seven working groups. They ensure the development of international standards for terminology, technology, training, content management, quality assurance, e-learning, etc.

From the Russian Federation the functions of a permanent national working body of ISO/IEC JTC1/SC36 performs the GOST R TC 461 "Information and Communication Technologies in Education (ICTE)", established in 2004, and uniting 4 subcommittees of over 100 high-level experts from educational and research institutions, the leading domestic IT companies and other interested organizations. Since 2006, the Russian national delegations (TC 461) actively participate in the work of ISO/IEC JTC1/SC36, contribute to the development of international standards for terminology, metadata structure, quality management and harmonization of the standards of e-learning [4].

For a system approach to e-learning quality assurance the development of the ISO/IEC 19796 multipart standard (being developed in the SC36/WG5 "Quality and Structure Description") is of great practical interest. Fundamental to ensuring the quality of e-learning is the ISO/IEC 19796-1 standard "IT LET – Quality management, assurance

and metrics – General approach", where a common approach to quality management and quality assurance in relation to the area learning, education and training with the use of information and communication technologies is defined. The area is in a generalized form can be defined as e-learning in educational institutions at all levels and in organizations that provide training and retraining. The main provisions of the standard are applicable to different forms of organization of e-learning (mobile, network, self-mixed, joint, etc.) and types of distance learning technologies. In accordance with the provisions of the standard development of a common approach to quality for the organization, which provides educational services with the use of e-learning should include the following steps [5]:

a) integration of approaches to quality with the standards and profiles, and best practices;

b) the analysis and comparison of approaches to quality-based standard for describing the structure of approaches to quality (RFDQ) and standard quality criteria (RQC)

c) development of a harmonized model;

g) the localization and adaptation of a harmonized model in accordance with national, industry and corporate requirements.

The development of a common approach to quality must be performed on the basis of the application of fundamental principles and requirements, taking into account the relationship approach to quality based on standard structures: TQM, ISO 9000, regional and national standardization documents, associations and organizations in the field of education and e-learning, regulations of educational institutions   and corporate structures.

It enabled the usage of a harmonized process model of e-Learning, in which the quality management system (QMS) of an educational institution includes four groups of processes according to ISO 9001, and the life cycle of e-Learning has seven basic processes of ISO/IEC 19796-1. First of all, this will allow more effective use of terminological and methodological basis of the ISO 9000 series of standards, not only for the development of ISO/IEC 19796, but for dozens of standards developed by the ISO/IEC JTC1/SC36. Second, approval was obtained from the management of JTC1 and ISO secretariat to develop a new series of three international standards (ISO/IEC 36000), which will be further reflected aspects of creating a harmonized process model and quality management system specific to and quality assessment and the possibility of certification of the main components of e-Learning (systems, processes, resources, personnel, services). In this approach the standards of ISO/IEC 36000 will be the basis for the basic requirements profile for e-Learning systems with the standards in the field of systems engineering, functional safety, risk assessment, ergonomics, environmental management, etc.

Comprehensive certification systems and components e-Learning in this approach does not cover all aspects of quality assurance, it does not include procedures for assessing the content of educational resources, methodology and didactic point of view, as well as compliance to the requirements of national educational and professional standards. Therefore necessary to develop a comprehensive approach to assessing the quality of e-Learning in accordance with the best national and international practices, including in conjunction with an independent examination and public accreditation.

Many countries have already adapted the ISO/IEC 19796 for national. This standard is used in Europe, Russia, Canada, Japan, South Korea, etc. At present, Russia has

adopted three national standards (GOST 53625-2009, GOST R 53723-2009 and GOST R 54837-2011), which are modified versions of the relevant parts of the international standard and take into account the specifics of Russian law and the national education system. These standards can be used to create management systems and educational organizations for the certification of these systems [6].

ISO/IEC 19796 is of fundamental importance for the development of e-Learning, because it describes the structure of the processes of e-Learning. The evolution of the standard ISO/IEC 19796 has led to a new series of quality standards ISO/IEC 36000, which is based on the relationship of the principles of TQM and ISO 9000 process approach. The structure of the new series of standards will be structured according to ISO 9000 standards, and the content part will be adapted from the standard ISO / IEC 19796. In the long term can be extended process maturity model CMM and CMMI. In our view, the series of standards ISO/IEC 36000, along with standards for terminology ISO/IEC 2382-36 will be the basic document for the development of international standards in the field ITLET.

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