

# Improvement the Competences of the Specialists Engaged with the Cultural and Scientific Heritage Digitization in the Information Security and Risk Management Systems: ISTRA Approach

Yanislav Zhelev

Burgas Free University, Burgas, Bulgaria  
jelev@bfu.bg

**Abstract.** The standards are crucial part of any activity on nowadays life. The necessity of education about standardization is already recognized at European level. As the culture sector evolves and changes, so do the skills required of individuals active in the sector. These changes can only be met by relevant and demand sensitive vocational and continuous vocational education and training (VET and C-VET). Application of the standards for information security and risk management systems in the digitization of cultural and scientific heritage and its preservation and relevant presentation is an issue of key importance. The current paper presents the main outcomes and results achieved so far in the framework of the Erasmus+ Project “International Standards training in VET for promotion of market relevant education” – ISTRA №2016-1-BG01-KA202-023738 aiming at the development and piloting of innovative training approaches and contents for VET and C-VET training on two widely applicable series of standards - ISO/IEC 27000 and ISO 31000.

**Keywords:** ISO/IEC 27000, ISO 31000, standardization, VET, C-VET, digitalization, cultural and scientific heritage, digital skills.

## 1 Introduction

The European Commission has already recognized the key role standards play on the internal market and internationally, for boosting the competitiveness of the economy and applying innovations, however, the impact of standards is highly dependent on the level of knowledge among the workforce. At a time when employability is a focal point in all of Europe and the need for innovating and creating business opportunities is key prosperity factor, it is crucial to raise knowledge about standards as a powerful tool to create growth, support employability and economic stability. Following the adoption of the Europe 2020 strategy and the European Agenda for Culture, the Commission has placed an increased emphasis on support to cultural and creative industries (CCIs) because the sector is generating increasing number of jobs while at the same time is contributing to innovation in other sectors, such as ICT.

According to results of a survey performed by the European standardization organisations CEN (CEN) and CENELEC (CENELEC) and the needs analysis provided (iFAN) there are obvious needs of education and training related to standards both in formal and in informal education. National standardization bodies are the ones that can provide the most relevant information and support for elaboration of curricula related to standards and standardization. The results show that less than half of them are involved in VET, aimed mainly at their members and support is needed towards VET activities.

## **2 ISTR A Project - the Rationale, Priorities, and Partnership**

As standardization is an activity performed at European and international level the most appropriate mechanism for elaboration of training materials on standards is the transnational consortium. European standards are developed jointly and in common agreement by European countries and adopted at national level. They are applicable in one and the same way in all of them. Consequently, the efforts for training on standards and standardization are a common European initiative. Moreover, the elaboration of educational path in standardization is in line with the European strategy for smart, sustainable and inclusive growth Europe 2020 in terms of increasing labor market relevance of VET. It also corresponds to the Agenda for New Skills and Jobs initiative regarding the equipping people with the right skills, contributing to better matching between skills and market labor needs and bridging the gap between education and work. CCI, which proved remarkably resilient through the crisis, are responsible for around 3.5% of all EU products and services annually, and employ 6.7 million people, or 3% of the European workforce. Following the adoption of the Europe 2020 strategy and the European Agenda for Culture, the EC has placed an increased emphasis on support to CCIs because the sector is generating increasing number of jobs while at the same time is contributing to innovation in other sectors, such as ICT. Taking into account the above as well as the priorities pointed out by the EC the international project “International Standards training in VET for promotion of market relevant education” -ISTR A (ISTR A) was launched in 2016. ISTR A is two-year project co-funded by the Erasmus+ Programme, KA2 Strategic partnership. In the ISTR A consortium are involved participants from four EU countries represented by the following organisations: Burgas Free University (BFU), Bulgaria– Coordinator; Vocational Trade School, Burgas, Bulgaria; Bulgarian Institute for Standardization (BIS); Latvian College of Culture; Latvian Standard Ltd. (LVS), Accreditation and Metrology Centre of Latvia (LVS); Technological High School “George Bibescu”, Craiova, Romania; The Secondary School of Technical and Electrical Engineering, Presov, Slovakia..

### **3 Main Objective and the Target Groups**

The project idea is in line with the Masterplan on Education about Standardization and the Policy on Education about Standardization of the European standardization organisations, supported by the European Commission.

The main objective of ISTRA project is the development and piloting of innovative educational approaches and contents for VET and C-VET training on two widely applicable series of standards. First is ISO/IEC 27000 (ISO, ISO 27000 standards), which is related to the information security. The second is ISO 31000 (ISO, ISO 31000 standards), which is related to the risk management.

The project target groups are secondary VET school students, professionals needing C-VET and trainers in topics related to standards and standardization. The project beneficiaries are:

- Internal beneficiaries – staff of the partner organisations not involved in the implementation of the project activities and outputs and NAVET experts;
- External beneficiaries –stakeholders at national, regional and international level, policy makers and representatives of umbrella organisations responsible for education, BDS member organisations, colleges and universities, European standardization organisations and European national standards bodies, chambers and employers organisations, etc.

VET and C-VET learners who will benefit from the knowledge and skills in applying standards in the process of the digitization, preservation and presentation of cultural and scientific heritage in addition to their basic studies/profession are very important segment of the ISTRA Project beneficiaries. Furthermore, VET lecturers and C-VET trainers will be qualified in the delivering of training and educational activities and contents via virtual learning environments in order to teach their trainees how to apply the ISO/IEC 27000 and ISO 31000 standards in their work activities and thus to achieve successful professional realization and carrier development.

### **4 Planned Activities and Key Outcomes Achieved**

The project's aim and objectives are achieved by the following activities:

- Designing of the technological educational model and setting up the ISTRA VLE based on the contemporary ICT-based approaches and contents and in line with the modern trends in the digital education;
- Development of e-learning course addressed to VET trainers of standards and standardization aiming at improvement of their digital skills and enhancement their pedagogical competences introducing contemporary ICT-based teaching approaches and techniques;
- Development of e-learning courses of standards ISO/IEC 27000 and ISO 31000 aiming to improve theoretical and practical knowledge and skills of VET trainees about the standards and their application in different situations and contexts.

- Piloting of the developed courses in the ISTRA VLE and collecting feedback from the users considering future improvement and enhancement of the methodology.
- Development of a system for transnational cooperation between VET and C-VET organisations from EU aiming the exchange of experiences and best practices in VET education.

Some of the main ISTRA Project results are:

1. ISTRA Virtual Learning Environment – modern educational environment where the lecturers/ VET trainers as well as students/VET trainees will be able to follow flexible learning paths in order to improve their key and transversal competences in accordance with the needs of modern digital education will be developed.
2. Training curriculum and e-course on standards for information security management systems - series ISO/IEC 27000. The training course on standards for information security management systems is composed of three modules:

*1:* Standards and standardization – Introductory module aiming to improve the knowledge and the awareness of the enrolled trainees on what standards are, what is the importance of standards as well as what are the benefits of standards. This module provides basic knowledge on standards and standardization using examples of everyday life.

*2:* Standards for information security management systems ISO/IEC 27000 - The module is focused on gaining knowledge on particular standards for information security management systems. The topics covered are as follows: impact on the standards' functioning of every business and organisation; general understanding about the series ISO/IEC 27000 standards in terms of principles for information security management; specific terms and definitions; implementing systems for information security, etc. Trainees are acquainted with the requirements for establishing, implementing, maintaining and continually improving an information security management system within the context of the organisation, requirements for the assessment and treatment of information security risks tailored to the needs of the organisation.

*3:* Practical aspect of standards implementation - Application of standards for information security management systems in the environment of different types of organisations and businesses, examples and success stories. Accent is put on the benefits for the trainees for their future professional realization and the added value of the knowledge and skills related to information security management standards to their professional development.

The educational materials about the series ISO/IEC 27000 standards were developed by experts from National Standardization Body of Latvia - Latvian Standard Ltd (LVC) who have high level of expertise in this domain. The developed materials were integrated in e-learning course designed by e-learning experts from Burgas Free University.

3. Training curriculum and e-course on standards for risk management systems - series ISO 31000. The training course on standards for risk management systems is composed of three modules:

1: Introductory module aiming to provide basic knowledge on standards and standardization using examples of everyday life. The aim is to improve the trainees understanding about the nature of the standards their importance and the main benefits of their application.

2: Standards for risk management systems - the series ISO 31000 - The module is focused on particular standards for risk management systems and their impact on the functioning of every business and organization aiming at general understanding about the ISO 31000 standards in terms of principles for risk management, specific terms and definitions, implementing systems for risk management, etc. The requirements for establishing, implementing, maintaining and continually improving a risk management system within the context of the organisation as well as the requirements for the assessment and treatment of the risks tailored to the needs of the organization are presented as well.

3: Practical aspect of standards implementation – In this module the accent is put on the application of standards for risk management systems in different environments and businesses. The trainees are presented variety of illustrative examples and success stories. Special focus is put on the benefits the future professional realization and the added value of the knowledge and skills related to risk management standards to their professional development.

The learning contents dedicated to the series ISO 31000 standards were developed by the highly qualified experts from the Bulgarian Institute for Standardization (BDS). The developed learning contents were integrated into the e-learning course by the specialists from Burgas Free University.

4. Contact Database of Key Stakeholders –the contact datafor the identified project stakeholders in all countries involved to be collected and saved in a structured and reliable way assuring easy authorized access and efficient data management.

In this DB are saved records containing data such as name, postal and e-mail addresses, phone numbers and other contact details about the representatives of all identified target groups, beneficiaries and parties interested in the ISTR A project and its outputs and results. In the DB are stored contact data about experts in the corresponding standardization domains, VET schools and centers, universities, lecturers and VET trainers, management bodies responsible for the educational policies on all levels, employers' associations, CCIs, NGOs, professional associations and interested individuals. The promotion materials and other information about the project are delivered to the registered stakeholders via all possible channels. The collected data are used for recruitment of participants in all the project activities connected with the reviewing and evaluation of the outputs as well as with the training and learning activities of the project piloting stage. In this context, this DB is very useful in order to enhance the sustainability of the project outputs and results. The database is available on the web-site private area.

## **5 Expected Impact, Ongoing Activities and Future Steps**

The direct impacts could be summarized as follows:

- On the educational organisations: elaborated modules ready to be included in their educational curricula, innovative training content to the needs of the business;
- On the Standardization organisations: applying standards will be promoted, innovative knowledge on standards will be provided, and the courses will be easily adapted to their training programs;
- On the direct participants and representatives of the target groups: innovative competences to respond to the modern requirements, better knowledge on two of the most popular standards ISO 27000 and ISO31000, adaptability and better quality of the training.

The expected long-term impacts are:

- Promotion and awareness on standards and standardization among VET students and C-VET learners;
- Raised competence of staff in elaboration of VET training programs in cooperation with educational institutions;
- The trained VET students and C-VET learners are expected to keep their interest in standards and standardization and some of them to be more actively involved in the future as professionals in the national and European standardization activities.

The developed e-courses were tested in the ISTRA VLE and evaluated by the external experts in the corresponding domains. After the receiving of positive experts' evaluation currently the courses are in the process of piloting with active involvement of the target groups' representatives from all involved countries. The future steps are related to the integration of the developed courses in the regular curricula of the VET and C-VET organisations in the countries involved. The project results would be further enhanced by developing training programmes for other standards, such as standards for quality management systems, for social responsibility, for environmental management systems, etc.

## References

- CEN. (n.d.). *European Committee for Standardization*. Retrieved from CEN : <https://www.cen.eu>
- CENELEC. (n.d.). *European Committee for Electrotechnical Standardization*. Retrieved from CENELEC: <https://www.cenelec.eu/>
- iFAN. (n.d.). *iFAN-Guide-4 Education*. Retrieved from iFAN: <http://www.ifan.org/IFAN-GUIDE%204-Education-2014-09.pdf>
- ISO. (n.d.). *ISO 27000 standards*. Retrieved from <https://www.iso.org/isoiec-27001-information-security.html>
- ISO. (n.d.). *ISO 31000 standards*. Retrieved from ISO 31000 standards: <https://www.iso.org/iso-31000-risk-management.html>
- ISTRA. (n.d.). *ISTRA Project*. Retrieved from ISTRA: <http://www.istraproject.eu/>

Received: June 10, 2018

Reviewed: June 26, 2018  
Finally Accepted: July 06, 2018

