

Workshop "Promoting the Green Transition through University Education on Green Standards"

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Abstract. The seminar "*Promoting the Green Transition via University Education with Green Standards*" presents the approach and concept of the international project *Boosting the Green Future via University Micro-Credentials (B-Green-ED)*, funded by the Erasmus+ program KA220-HED - Cooperation partnerships in higher education, aiming to contribute to the achievement of the sustainable, green and digital goals of the European Union by providing innovative university micro-credentials related to environmental and management standards to improve the digital and green capabilities of the higher education sector. Some findings and results of the B-Green-ED research conducted in four EU countries - Bulgaria, Lithuania, Spain, and Romania are presented.

Keywords: Green Transition, Digitalization, Standards, Micro-credentials, Higher Education.

1 Introduction

The importance of standards for businesses has increased dramatically over the last decade. It is widely recognized that standards provide a range of benefits, including enhancing the competitiveness of European economy, facilitating trade, fostering innovations and being a policy tool for a resilient EU single market.

The International standards organizations ISO and IEC and the European standards organization CEN and CENELEC demonstrated their support for green and digital transition by endorsing the London Declaration (CEN-CENELEC, 2022) on the commitment of the standardization to climate action. At the same time, several analyses and papers explain the lack of proper university education on standards at European level, which leads to a reduction in the competitive abilities of European businesses compared to other regions.

The EU Strategy on Standardisation Setting global standards in support of a resilient, green and digital EU single market (European Commission, 2022) calls for "stronger

standardization skills across industry and academia” and emphasizes on the need for education and skills.

The development of university micro-credentials focused on green, environmental and governance standards is a step forward for European universities to invest in greening curricula and providing standards-related training that will prepare their students for real business by providing them with knowledge and skills relevant to the current labour market needs imposed by the digital and green transition.

The next sections of the paper present some results and findings of research conducted in Bulgaria, Lithuania, Romania, and Spain under B-Green-ED project (B-Green-ED, 2022) related to identifying the current state of the provision of university training programs focused on standards and standardization and implementation of micro-credential courses paradigm in university education.

2 National Policies Regarding Training in Standards

There isn't a national policy or regulation regarding the training in standards in higher education institutions in Bulgaria. There isn't a national policy or regulation regarding the training in standards with a special focus on green standards either.

Despite the clear political orientations towards a green transition in Romania there are still no regulations regarding the introduction of training in green standards into the university curriculum.

Currently, there is no national policy or regulation regarding the training in standards in higher education institutions in Spain. There is no national policy or regulation regarding the training in standards with a special focus on green standards either.

The 17 SDGs are adapted to the national context and incorporated into national legislation and strategic documents in Lithuania such as the Strategy for Progress "Lithuania 2030" which goal is to ensure that the country's progress and economic development is based on the principles of sustainable development and the green growth concept. It emphasizes the need to develop technologies that minimize environmental impacts and ensure sustainable, resource-efficient growth.

3 The Current State of Training in Standards

14 out of 54 Universities (25,92%) in Bulgaria have an active membership in different Technical Committees of the Bulgarian Institute for Standardization (BIS). The Technical Committee is a BIS working body responsible for a specific area(s) of standardization. The Technical Committees for Standardization are established and closed by the Technical Councils for Standardization. The work on standardization is carried out with the active assistance of the members and experts of the technical committees for standardization at BIS (BIS/TC). At present, 78 technical committees at BIS (BIS/TC) are actively working in the various sectors of the industry. The areas of activity of BIS/TC overlap with about 80% of the technical committees of CEN, CENELEC, ISO and IEC.

31 out of 88 Universities (35,22%) in Romania have an active membership in different Technical Committees of the Romanian Standards Association (ASRO). Technical Committees are entities without legal personality, attached to the National Standardization Body. The Technical Committees of ASRO consist of groups of experts representing economic stakeholders interested in the standard-drafting process, in various areas of activity, coordinated by a representative of ASRO. There are 151 technical committees at ASRO (ASRO/TC), that are actively working in the various sectors of the industry: approx. 100 TCs related to the general standardization domain, and 51 TCs are in the electrotechnical domains. The areas of activity of ASRO/TC overlap about 93,6% of the technical committees of CEN, CENELEC, ISO, and IEC. The distribution of members in ASRO's Technical Committees, by category, is as follows: 10,3% are research institutions, and 11,36% are represented by universities.

Even though there are no national policy or regulation regarding the training in standards in higher education institutions in Spain, industries use ISO standards on a regular basis to check the suitability of their activities. Una Normalización Española (UNE) is the only Standardization Organization in Spain, designated by the Ministry of Economy, Industry and Competitiveness before the European Commission. UNE promotes the development of the quality infrastructure, promoting the transfer of knowledge and the strengthening of companies. UNE represents the interests of Spanish companies in European and international standardization organizations. UNE has a catalog in Spanish of more than 33,500 standards, which mostly adopt European and international standards prepared with the contribution of the Spanish sectors. UNE adopts ISO standards through the ISO strategy 2016-2020. UNE works in cooperation with the European Committee for Standardization (CEN) and the European Committee for Electrotechnical Standardization (CENELEC). Together with the European Telecommunications Standards Institute (ETSI) CEN represents the three European Standardization Organizations (ESOs) recognized under EU law (Regulation 1025/2012). They are the exclusive providers of voluntary European Standards and related products and services. UNE's associative base is made up of more than 500 members who represent practically the entire business fabric of Spain. Due to its associative nature, any entity and natural or legal person, public or private, that has an interest in the development of standardization can be a member of the Spanish Association for Standardization, UNE. Among them are the main business associations, leading companies in Spain and a good representation of Public Administrations at all levels.

In Lithuania the National Standardization Body manages the standardization information system, which collects Lithuanian standards and standardization publications, standards and standardization publications of the international standardization bodies and European standardization organizations of which it is a member. Lithuanian higher education institutions strive for continuous and systematic improvement of the quality of study, research, and administration processes. In order to improve the quality of studies, first of all, a quality management system adapted to the specifics of the activities of higher education institutions, complying with the requirements of the international ISO 9001 standard, is implemented, implementing the standardized requirements for quality assurance formulated by the European Association of Universities; the goal is to achieve continuous improvement of studies, science and other areas of university

activities, based on the criteria and measures of the global assessment model for quality management, the European EFQM performance excellence model (EFQM , n.d.) or the general evaluation model developed and adapted for the improvement of the performance of public-sector organizations, or in accordance with it..

4 National and Institutional Approach to Micro-Credential Courses

There are no regulations and procedures in Bulgaria specified at national and institutional level regarding micro-credential courses and their approval, certification, and recognition. Since 1990, the principle of academic autonomy in the management of universities as a legal institute has been introduced in Bulgaria. Higher education institutions develop and approve, in dialogue with staff users, specialties and qualification characteristics, curricula and programs for training and upgrading the qualifications of specialists with higher education on the basis of the established mandatory state requirements and criteria for recognition of completed education and acquired qualifications and determine the forms of education of the students; organize and carry out in dialogue with users the activity to increase the qualification and requalification of specialists with higher education and confirm the educational content of the training.

By virtue of the prevalence that institutions have in the field of education in Romania, they must have an initiative role, by adopting an action plan that includes specific educational actions and policies, in the approach regarding the implementation of the certification system through micro-credentials. Thus, at the level of the institutions (Ministry of Education, National Authority for Qualifications (ANC), the Romanian Agency for Quality Assurance in Higher Education (ARACIS), the Executive Unit for the Financing of Higher Education, Research, Development, and Innovation (UEFISCDI) and higher education institutions members, a series of directions of action have been identified:

- At the level of the Ministry of Education a new Education Law which will ensure the legislative framework of adopting micro-credentials in the Romanian higher education system and exploring the possibilities of financing specific actions for the adoption of micro-credits is going to be released in March 2023.
- The National Authority for Qualifications (ANC) must provide the tools of integration of micro-credits into the National Qualifications Framework. Currently, in Romania is implemented the National Register of Qualifications (RNC) which, in the frame of micro-credits approach, need an extension like a National Register of Micro-Certifications synchronize by the adaptation of the ECTS credit system.
- The Romanian Agency for Quality Assurance in Higher Education (ARACIS) must develop methodologies for accreditation and evaluation of micro-study programs.
- The Executive Unit for the Financing of Higher Education, Research, Development, and Innovation (UEFISCDI) must adapt the Integrated Educational Register (REI) and the Single Matriculation Register (RMU) to

integrate micro-certifications from higher education into the personal educational paths of students and graduates.

- Universities must develop common methodologies for the automatic recognition of certified learning through micro-certification and micro-credentials.

In Spain, the term “micro-credential” has been officially included for the first time in the higher education specific legislation by two Royal Decrees approved in 2021. However, the concept of micro-credential has only been introduced but it is not fully developed. The Spanish National Accreditation Agency (ANECA) published in July 2021 a Framework Document about Quality Assurance of Micro-credentials. This document provides some insights about the status and definition of micro-credentials in Spain. In this document, ANECA provides two definitions of the concept of micro-credentials. Short definition: A micro-credential is (the record of the results of) a brief learning experience, the reliability of which is backed by transparent quality assurance procedures. Long definition: A micro-credential is (the record of the results of) a short learning experience linked, where appropriate, to a qualifications framework, and validated, in any case, by an assessment. Micro-credentials may be designed and issued by various providers in different learning environments and will be awarded for learning experiences characterized as being relevant (having a clear objective), easy to accumulate by supporting flexible learning pathways, having guidance services, and being centered on the learner (European Commission, 2022) . Micro-credentials must ensure their quality in accordance with agreed standards in the relevant sector or field of activity, in accordance with principles of transparency, authenticity, portability and recognition that reinforce the reliability and trust of the micro-credential.

There are no regulations and procedures specified at national and institutional level regarding micro-credential courses and their approval, certification, and recognition in Lithuania. Since 1991, the principle of academic autonomy in the management of universities as a legal institute has been introduced in Lithuania. Higher education institutions develop and approve, in dialogue with staff users, specialties and qualification characteristics, curricula and programs for training and upgrading the qualifications of specialists with higher education on the basis of the established mandatory state requirements and criteria for recognition of completed education and acquired qualifications and determine the forms of education of the students; organize and carry out in dialogue with users the activity to increase the qualification and requalification of specialists with higher education and confirm the educational content of the training.

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