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# BEQUEL

# Benchmarking Methodology and Tools

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KA2 - Cooperation for Innovation and the Exchange of Good Practices

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## ABBREVIATIONS

ASFOR – Italian Association for Managerial Training

BEQUEL – Benchmarking for Quality Assurance in e-learning provision of VET education

CNIPA – National Center for Information Technology in the Public Administration

ENQA – European Association for Quality Assurance in Higher Education

EOMS – Educational Organisations Management System

EQAVET – European Quality Assurance in Vocational Education and Training

EUA – European University Association

HAHE – Hellenic Authority for Higher Education (Greece)

HOU – Hellenic Open University

ICT – Information and Communication Technology

LMS – Learning Management Systems

MERS – Ministry of Education, Science, Research and Sport of the Slovak Republic

MIUR – Ministry of Education, University and Research (Italy)

MIT & MPA – Minister for Innovation and Technologies and the Minister of Public Function

MOOC – Massive Open Online Course

OECD – Organisation for Economic Co-operation and Development

OERs – Open Educational Resources

OLC – Online Learning Consortium

PLE – Personal Learning Environments

QA – Quality Assurance

QAF – Quality Assurance Framework

QAS – Quality Assurance System

QAU - Quality Assurance Unit

SAAHE – Slovak Accreditation Agency for Higher Education

SIOV – Štátny inštitút odborného vzdelávania

UK – United Kingdom

VET – Vocational Education and Training

# PREFACE

Transforming education and facilitating its transition to the digital era has been a priority in the EU past years, even before COVID-19. The Digital Education Action Plan (2018) identified three priorities and set out measures to help member states and education institutions address the challenges of digital transformation and distance learning provision. In October 2020, the new Digital Education action plan was announced, which acts as a call to action for stronger cooperation at the EU level to learn from the COVID-19 crisis and make education and training systems for the digital age.

The COVID-19 crisis has brought a new reality to education provision, especially Vocational Education and Training (VET). Many education providers, including VET, turned to e-learning to ensure the continuity of education for their learners. But what about quality in e-learning? It is evident that applying quality assurance in e-learning is hard to encompass in VET education in such a short time.

This document defines the basic terminology used and shows the quality assurance framework and main elements of benchmarking methodology, the benchmarking questionnaire tool, and the benchmarking questionnaire usage scenario.

# 1. DEFINITIONS

## ORGANISATION

Person or group of people that has its own functions with responsibilities, authorities and relationships to achieve its objectives. The term organisation includes, but is not limited to sole trader, company, corporation, firm, enterprise, authority, partnership, charity or institution, or part or combination thereof, whether incorporated or not, public or private (ISO, 9000).

Note: In the following text, the term organization is used, but also the term institution, especially in connection with higher education institutions (HEIs) and companies for training centres.

## BENCHMARKING

Benchmarking is a practice used by organisations as a tool to increase and improve their performance. There are many definitions of benchmarking, for example:

- Society for Human Resources Management (Jurevicius, 2021):

  Benchmarking is the systematic process of comparing an organisation's products, services and practices against those of competitor organisations or other industry leaders to determine what they do to achieve high-performance levels.

- iSixSigma (iSixSigma, 2021):

  Benchmarking is the concept of discovering what is the best performance being achieved, whether in your organisation, by a competitor, or by an entirely different industry. It is also:

  * an improvement tool whereby an organisation measures its performance or process against other organisations' best practices, determines how those organisations achieved their performance levels and use the information to improve their performance;
  * a continuous process where by an enterprise measures and compares all its functions, systems and practices against strong competitors, identifying quality gaps in the organisation and striving to achieve competitive advantage locally and globally.

Benchmarking also referred as "best practice benchmarking" is a process used in management, particularly strategic management, in which organisations evaluate various aspects of their processes concerning best practices, usually within a peer group defined for comparison.

## E-LEARNING

e-Learning, according to The Economic Times (2021), is a learning system based on formalised teaching with the help of electronic resources. While teaching can be based in or out of the classrooms, using computers and the internet forms the major component of e-learning.

According to ENQA (2018), e-Learning is understood as encompassing every form, including blended learning but excluding Massive Open Online Courses (MOOCs) and Open Educational Resources (OERs)[1], and that is facilitated through the use of Information and Communication Technology (ICT).

## VOCATIONAL EDUCATION AND TRAINING

Vocational Education and Training (VET), sometimes simply called vocational training, is the training in skills and teaching of knowledge related to a specific trade, occupation or vocation in which the student or employee wishes to participate.

Vocational Education and Training provide learners with essential skills supporting their personal development, enhancing their employability and encouraging active citizenship (European Commission, 2022). VET ensures skills development in a wide range of occupational fields through school-based and work-based learning (OECD, 2022).

Vocational education may be undertaken at an educational institution as part of secondary or tertiary education or may be part of initial training during employment, for example, as an apprentice or as a combination of formal education and workplace learning (Eurostat, 2021).

Vocational education and training prepare people for work and develop citizens' skills to remain employable and respond to the needs of the economy (European Commission, 2022).

[1] For instance, teachers and trainers would use existing teaching/learning materials they created and used for Moodle lessons and activities, modify them and publish them as OERs (Mičunović, Rako, & Feldvari, 2021)

## 2. QUALITY ASSURANCE OF E-LEARNING IN VET ORGANISATIONS: THE STATE OF PLAY

The starting point for the quality assurance research in VET organisations was the analysis of the existing quality assurance frameworks for e-learning practices in VET and other education levels developed by International, European, and National organisations.

Digital competencies have become vital for citizens' participation in today's social, economic, and civic life. Digitalisation is transforming the nature of work and poses new challenges (European Commission, 2018): 90% of future jobs will require digital skills; 44% of Europeans lack basic digital skills; more than 48,000 schools lack a broadband connection. Digital wellbeing is threatened by misinformation, cyberbullying, and data privacy issues.

To create a "Benchmarking methodology and tools", it was necessary to determine the current state of directives and legislation in force in the European Union (EU).

A literature review culminated in a collection of frameworks, tools and best practices structured according to the different institutions at international, European Union, and national levels.

To create an overview of the current state of knowledge and practice in the quality assurance of e-learning in schools and VET organisations, we examined the available electronic resources and grouped them according to (Figure 1), and organised them into two closely related groups:

- Vocational Education and Training (VET)
- e-Learning

These resources are presented on three hierarchical levels:

- Global level
- European level
- National level

Related e-Learning in VET documents with references structured according to the different institutions at the international, European Union, and national levels are summed up in Table 1.

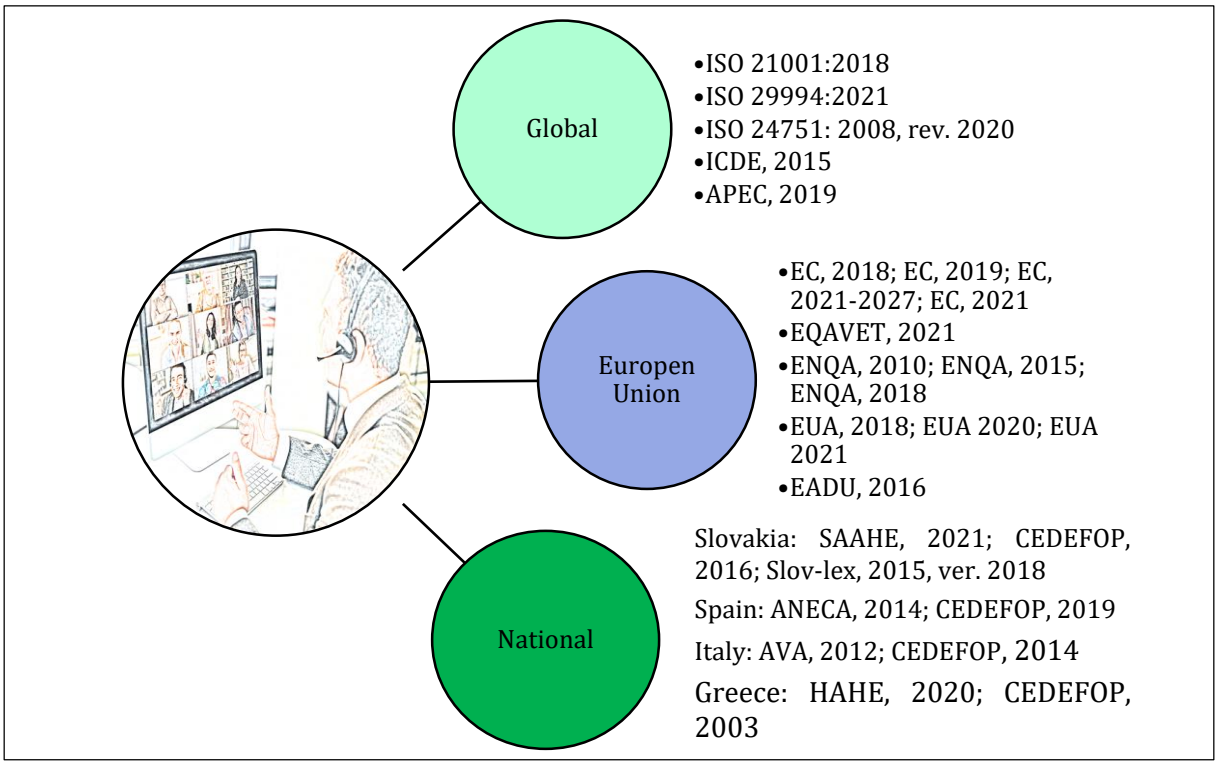



Figure 1 – Collection of e-Learning in VET frameworks structured according to the different institutions at the International, European Union, and National levels.

Table 1 – Overview of documents with references at the International, European Union, and National levels.

| Level | Documents | Reference |
|---|---|---|
| International | Educational organisations – Management systems for educational organisations – Requirements with guidance for use | (ISO 21001, 2018) |
| | Education and learning services – Requirements for distance learning | (ISO 29994, 2021) |
| | Information technology – Individualised adaptability and accessibility in e-learning, education and training | (ISO/IEC 24751, 2008, rev. 2020) |
| | Quality models in online and open education around the globe: State of the art and recommendations | (ICDE, 2015) |
| | Quality Assurance of Online Learning Toolkit | (APEC, 2019) |
| European Union | The digital education plan: 2018 | (European Commission, 2018) |
| | Digital education action plan: 2021-2027 | (European Commission, 2021-2027) |

| Level | Documents | Reference |
|---|---|---|
| | European framework for digitally competent educational organisations DigCompOrg | (European Commission, 2019) |
| | SELFIE toolkit | (European Commission, 2021) |
| | European quality assurance in vocational education and training | (EQAVET, 2021) |
| | Standards and guidelines for quality assurance in the European higher education area | (ENQA, 2015) |
| | Considerations for quality assurance of e-learning provision | (ENQA, 2018) |
| | Quality Assurance of e-learning | (ENQA, 2010) |
| | Digital learning and teaching: Ensuring quality during the Covid-19 crisis | (EUA, 2020) |
| | Internal quality assurance in times of Covid-19 | (EUA, 2021) |
| | 13th European quality assurance forum | (EQAF, 2018) |
| | Quality assessment for e-learning: A benchmarking approach | (EADTU, 2016) |
| National* | Slovakia | (SAAHE, 2021)<br>(CEDEFOP, 2016)<br>(Slov-lex, 2015, ver. 2018) |
| | Spain | (ANECA, 2014)<br>(CEDEFOP, 2019) |
| | Italy | (AVA, 2012)<br>(CEDEFOP, 2014) |
| | Greece | (HAHE, 2020)<br>(CEDEFOP, 2003) |

Notes:

*HEI and VET accreditation bodies

## 2.1 THE STATE OF PLAY IN SLOVAKIA

The accreditation systems, according to (Law no. 131/2002 Coll.), (Law no. 269/2018 Coll.) and (Law no. 61/2015 Coll.) assure the quality of VET programmes in Slovakia.

The Accreditation Commission for Further Education, which is an advisory body of the Ministry of Education, Science, Research and Sports of the Slovak Republic (MESRS), is responsible for lifelong learning within the framework of the State Education Programs (SEPs). The mandatory content of education "core curriculum" is defined in the SEP and guaranteed by the SIOV (SIOV, 2022) after negotiations with employers, school founders and their professional and interest associations with national scope and with departmental ministries within the scope of their departmental competence in accordance with generally binding legal regulations. The curriculum is developed for each group of branches. The title corresponds to the name of the group of branches. Curriculum frameworks are binding curricular documents for creating school educational programs, textbooks, teaching texts and workbooks and for evaluating and controlling educational results. Quality assurance is monitored systematically by the (MESRS, 2022). (MESRS, 2022)

Higher education institutions (HEIs) can obtain accreditation for VET study programs from SAAHE in two ways:

- If the HEI meets the SAAHE standards for an internal quality assurance system (QAS), HEI obtains accreditation and can create study programs and accredit them by HEI's internal, independent accreditation team.
- If the HEI does not have SAAHE accreditation yet, the institution must apply to the agency for accreditation of each new study program or its change.

HEIs have been in transformation since 2019 in order to ensure the harmonisation of standards for quality assurance in higher education with the ESG European standards (ENQA, 2015). HEIs must have established an internal set of procedures, criteria and indicators according to "Standards for the Higher Education Internal Quality Assurance System" (SAAHE, 2020) through which the review panels of the SAAHE evaluate compliance with these standards. Study programmes' accreditation is based on "Standards for Study Programmes" (SAAHE, 2020).
After the transformation process, it is planned to include requirements for the quality assurance of e-learning into these standards (ENQA, 2018).
Some HEIs already have frameworks for the quality assurance of e-learning. For instance, Comenius University in Bratislava developed an internal manual, "How to Online Education," and a questionnaire based on the university's experience and immediate needs of the Covid-19 pandemic situation (Comenius University in Bratislava, 2022). Another good practice example is the Vysoká škola manažmentu/CityU of Seattle (VSM/CityU, 2022), which offers study programmes accredited in the USA by the Northwest Commission on Colleges and Universities

[2] VET stakeholders are: the beneficiaries of VET activities, VET providers - including VTCs, schools and Universities – Policy makers - Ministry of Labour, Ministry of Education, Regions and Local Authorities – Enterprises, Trade Unions and others

and in Slovakia by SAAHE. Vysoká škola manažmentu has its online model (City University of Seattle, 2021).

The University of Prešov (UNIPO, 2021) uses a survey instrument based on the Kirkpatrick evaluation method (eLearning Industry, 2021) to evaluate and improve e-learning processes.

The vast majority of the HEIs use Learning Management Systems (LMS) for delivering and managing e-learning courses as one of the ways to improve the quality of e-learning, among which the Moodle LMS is the most used.

Recently, the Slovak Accreditation Agency has organised the "Quality of Distance Education" event, which aimed at discussing the specifics of quality assurance of distance learning and sharing experiences of the participating HEIs. The HEIs presented different approaches to assure e-learning quality, from internally created questionnaires measuring selected e-learning quality elements to e-learning models based on European and international frameworks.

**Related documents for Slovakia**

- Act no. 61/2015 Coll. Act on Vocational Education and Training and on Amendments to Certain Acts (as amended by No. 209/2018 Coll., 209/2018 Coll./Zákon č. 61/2015 Z. z. Zákon o odbornom vzdelávaní a príprave a o zmene a doplnení niektorých zákonov v znení č. 209/2018 Z. z., 209/2018 Z. z.).
- National action plan for external quality assurance of HEIs in the Slovak Republic (SAAHE, 2021)

**Conclusion for Slovakia**

The State Educational Programmes define the compulsory content of education – the core curriculum – in the VET field, which is guaranteed by the state. They are issued and published by the Ministry of Education, Science, Research and Sport after consultation with employers, school founders, and professional and interest associations with nationwide scope and with line ministries with relevant sectoral competencies. These consultations are under general legislation. The curricula are developed for each group of disciplines. The curriculum frameworks are necessary to develop educational curricula, textbooks, teaching materials and workbooks and assess and control learning outcomes (SIOV, 2022).

For VET, where study programs are provided in e-learning form, there are still no common strategies, procedures, criteria or requirements for quality assurance in Slovakia. Some educational institutions and organisations have developed guidelines and assessment criteria for quality assurance of e-learning, and after the Covid-19 pandemic, more and more VET organisations are working on quality assurance of their e-learning programmes.

## 2.2 THE STATE OF PLAY IN GREECE

The Hellenic educational system does not possess an official national framework for quality assurance regarding e-learning. Higher Education Institutions are being monitored and certified by the Hellenic Authority for Higher Education (HAHE) according to both national and European requirements, but certifications received from the HAHE do not relate to e-learning yet.

Apart from the external evaluation by HAHE, most HEIs have internal evaluation and quality assurance units (QAU). These QAUs (HQA, 2020) set the requirements that the Institution must preserve internally and are responsible for maintaining high standards. Some Greek institutions implement e-learning quality assurance frameworks that are European or international. For instance, the Aegean University follows some international standards regarding its online courses. Questionnaires and guides used for this purpose include the ECB Check for Courses and Programs, the "Guide To Online Course Design And Quality Standards", The iNACOL etc.

Furthermore, the Hellenic Open University (HOU) also follows some guidelines regarding online courses through its internal quality assurance unit. These guidelines are provided through various international guides or questionnaires used for evaluating e-learning. For example, The HOU uses the Administration of online programs OLC quality scorecard suite created by the Online Learning Consortium (OCL, 2021); additionally, foreign quality assurance guides such as the Swedish Higher education quality evaluation system are used as references.

The Hellenic Open University has just recently conducted and delivered a study on behalf of the Ministry of Education, specifically for the General secretariat of lifelong learning in Greece, regarding the quality assurance framework for online courses. The study was based primarily on, but not limited to, the following papers and frameworks:

- Quality Assessment for e-Learning: a Benchmarking Approach (Ossiannilsson, 2016).
- Quality in e-learning: a framework for promoting and assuring quality in virtual institutions (Masoumi & Lindström, 2011).
- Business Models for Opening up Education: Sustainability of MOOCs, OER and related online education approaches in European higher education (Project: D-TRANSFORM, 2016).
- Sloan-C Institute –The Online Learning Consortium (Online Learning Consortium, 2022)

### Related documents for Greece

- Quality certification of the internal security system quality (HQA, 2016)
- Legislation for vocational education, training and lifelong learning (ΕΦΗΜΕΡΙΔΑ ΤΗΣ ΚΥΒΕΡΝΗΣΕΩΣ , 2020)
- Internal and external assessment of primary and secondary schools (e-nomothesia, 2020)
- Evaluation of teachers: Apprenticeship quality framework. (Κοινή Υπουργική Απόφαση 26385/2017 - ΦΕΚ 491/Β/20-2-2017 (Παύση ισχύος), 2017)

### Conclusion for Greece

Some educational institutions have implemented some of the existing e-learning quality assurance frameworks which were developed, e. g. ECB Check for Courses and Programs; Guide to Online Course Design and Quality Standards; iNACOL; OLC Quality Scorecard Suite and the e-Learning Quality Model (ELQ) developed by NAHE.

The Hellenic Open University has just recently conducted and delivered a study on behalf of the Ministry of Education specifically for the General secretariat of lifelong learning in Greece regarding quality assurance framework on online courses.

The results of this study will be published by the General Secretariat of lifelong learning in Greece and are expected to become the quality assurance framework for online courses, which is going to be used by the Greek public education providers.

## 2.3 THE STATE OF PLAY IN ITALY

In the state of play that follows, we consider the existing Italian quality assurance frameworks for e-learning in VET education. Over the years, the focus on e-learning, following European initiatives, has given rise to an extensive literature of articles, studies, research and projects aimed at:

- investigating the quality of e-learning provision,
- comparing the stakeholders' viewpoints,
- measuring the pedagogical impact of e-learning
- eventually, making th most of the policies implemented in various European contexts at the National level.

The best-known Italian regulatory interventions that have defined the parameters, guidelines, methodologies and standards of distance learning and/or e-learning initiatives at different levels of VET are:

- Ministerial Decree establishing "Criteria and procedures for the accreditation of distance study courses of state and non-state universities and university institutions authorised to issue academic qualifications" ordered by the Ministry of Education, University and Research (MIUR, 2021), in collaboration with the Ministry for Innovation and Technologies D.M. n°98 -17.04.2003;
- Ministerial Directive Stanca "Training projects in e-learning mode in public administrations by the Minister for Innovation and Technologies and the Minister of Public Function (MIT & MPA) and "Guidelines for training projects in e-learning in public administrations" integrated into the directive mentioned above and prepared by the CNIPA (National Center for Information Technology in the Public Administration) Dir. C.M. 06.08.2004;
- Guidelines for the use of distance learning/e-learning method in the training paths to regulated professions whose training has been held by the regions and autonomous provinces by the State-Regions-Autonomous Provinces Conference and Agreement 20/51/CR8/C9 on 31 March 2020 by State, Regions, Autonomous Provinces Conference establishing operational indications for VET e-learning, applicable during the emergency phase of Covid-19 Agreement 20/51/CR8/C9;
- Guidelines for Integrated Digital Teaching by MIUR D.M. n°39 on 26-06-2020;
- Reference Practice n. 89/2020 by UNI (Italian Standardisation Body) (UNI ENTE Italiano, 2020).

During the pandemic, all relevant authorities (the Ministry of Education, the Ministry of Labour, and national and local authorities) encouraged universities, schools and accredited VET providers to offer e-learning opportunities and provided some operational directions on distance learning. They also signed agreements with the national broadcasting organisation (RAI) and other organisations and associations to allow VET agencies and schools to use e-learning platforms for free. They provided instructions on the design of teaching and training activities, special support for vulnerable groups (learners with disabilities, youth-at-risk, laid-off workers and migrants) and evaluation/assessment of distance learning activities. To assure the quality of

e-learning training services, the majority of VET providers have revised the existing QMS tools in light of the new didactic and pedagogical reality, focusing, above all, on collecting feedback from learners, trainers and families to review training processes and products.

Nonetheless, they all focused on monitoring parameters - such as login data, the effectiveness of learners' connection, tracking attendance, intermediate tests and interactivity with trainers and learning simulation - rather than the whole quality process of any training provision (PDCA Cycle).

### Related documents for Italy

- Ministerial Decree 17 April 2003 GU n.98, 29-04-2003 (Gazzetta Ufficialle, 2003);
- Ministerial Directive 06 August 2004 and Annex Guidelines (Sanca & Gazzella, 2004);
- Guidelines 19/140/CR8/C9 on 25 July 2019 and Agreement 20/51/CR8/C9 on 31 March 2020 by State, Regions, Autonomous Provinces Conference establishing operational indications for VET e-learning, applicable during the emergency phase of Covid-19 (Conferenza Delle Regioni E Delle Province Autonome, 2020);
- Ministerial Directive establishing the Adoption of the Guidelines for the integrated digital education 26 June 2020 n. 39 and annex (Il Ministro dell'Istruzione, 2020);
- Reference Practice n. 89/2020 by UNI (Italian Standardisation Body) (UNI ENTE Italiano, 2020)

### Conclusion for Italy

In coping with the pandemic, schools and VET organisations proved to be ready to embrace digital education. Yet, to ensure that learning places are in step with the digital age and to consolidate their capacity for resilience and innovation, it becomes necessary to reflect on the use of e-learning in education and training systems and to define a complete quality assurance framework to have digitally competent educational organisations.

Such a framework should consider all "areas" of digital education: not only the reliability, adequacy and safety of infrastructures and equipment, which facilitate digital learning and/or the use of digital tools and resources to update and innovate teaching methods, but also the leadership engagement, the collaborations and interactions for sharing experiences and methods for effective learning; the ongoing investment in the professional development of staff; renewed assessment practices overcoming a traditional view of assessment; the digital competence of students.

Out of the documents referenced above, UNI Reference Practice seems closer to the aim of BEQUEL project, at least for the project's target group. Out of the documents mentioned above, UNI Reference Practice is most closely aligned with the aim of BEQUEL project, at least for the project's target group.

## 2.4 THE STATE OF PLAY IN SPAIN

The National Institute for Educational Evaluation (INEE) is the agency of the Ministry of Education and Vocational Training responsible for evaluating the Spanish educational system, a mission that it carries out in three different areas —National evaluations, international evaluations and Educational indicators— in accordance with current national legislation. The INEE is framed within the General Directorate of Evaluation and Territorial Cooperation of the Ministry, in collaboration with the autonomous educational administrations.

However, the INEE does not possess a specific quality framework for the evaluation of e-learning education.

Educational institutions have their own assessment criteria. For example, UNED (the National University for Online Education) has designed a questionnaire for the evaluation of the quality in online courses. The tool has been designed to evaluate the virtual courses in three main areas:

- general quality of the learning environment or platform;
- teaching methodology, that is, the teaching strategies and methods used in the virtual classrooms;
- and, the Technical Quality of the courses that assesses the basic aspects of the technology that a virtual classroom must have.

Another example is The Group of Online Teaching Managers of the Public Universities of Castilla y León, which has prepared a guide with recommendations to help teachers and universities in the process of transformation of the face-to-face classes into an online format. The essence of this guide is shared online (García-Peñalvo, Corell, Abella-García, & Grande, 2020) to make these recommendations available to a higher number of teachers worldwide.

Another assessment model has also been developed by a professor from the University of Cartagena, in Murcia, in a 3-step easy to follow indicators format (Educación 3.0, 2022).

Not every institution has a reference document for the quality assurance of e-learning. The majority of the higher education and VET institutions started offering online courses after the Covid-19 pandemic. The centres had to quickly adapt to the use of new technologies and the new virtual classroom model, and they are still in the process of being able to establish their own quality assessment criteria as they do not have a common framework for all institutions.

### Related documents for Spain

- Basque VET Law 4/2018 (Vasco, Formación Profesional del País, 2018)
- Basque Lifelong Learning Law 1/2013 (Agencia Estatal Boletín Oficial del Estado, 2013)
- Regulation for the Implementation and Organization of Distance VET Education

### Conclusion for Spain

In conclusion, in Spain there is a need for a common quality assurance framework regarding e-learning at VET institutions.

Some education institutions have implemented some of the existing e-learning quality assurance frameworks which were developed, e. g. ECB Check for Courses and Programmes; Guide to Online Course Design and Quality Standards; iNACOL; OLC Quality Scorecard Suite and the e-Learning Quality Model (ELQ) developed by NAHE.

## 3. VET ORGANISATIONS E-LEARNING QUALITY ASSURANCE FRAMEWORK

The model of the Quality Assurance Framework (Figure 1) is located in an external supportive environment that explicitly recognises quality as the value of work and enables the educational institution's objectives to be achieved. The external environment must provide support and advice at the national level for continuous improvement.

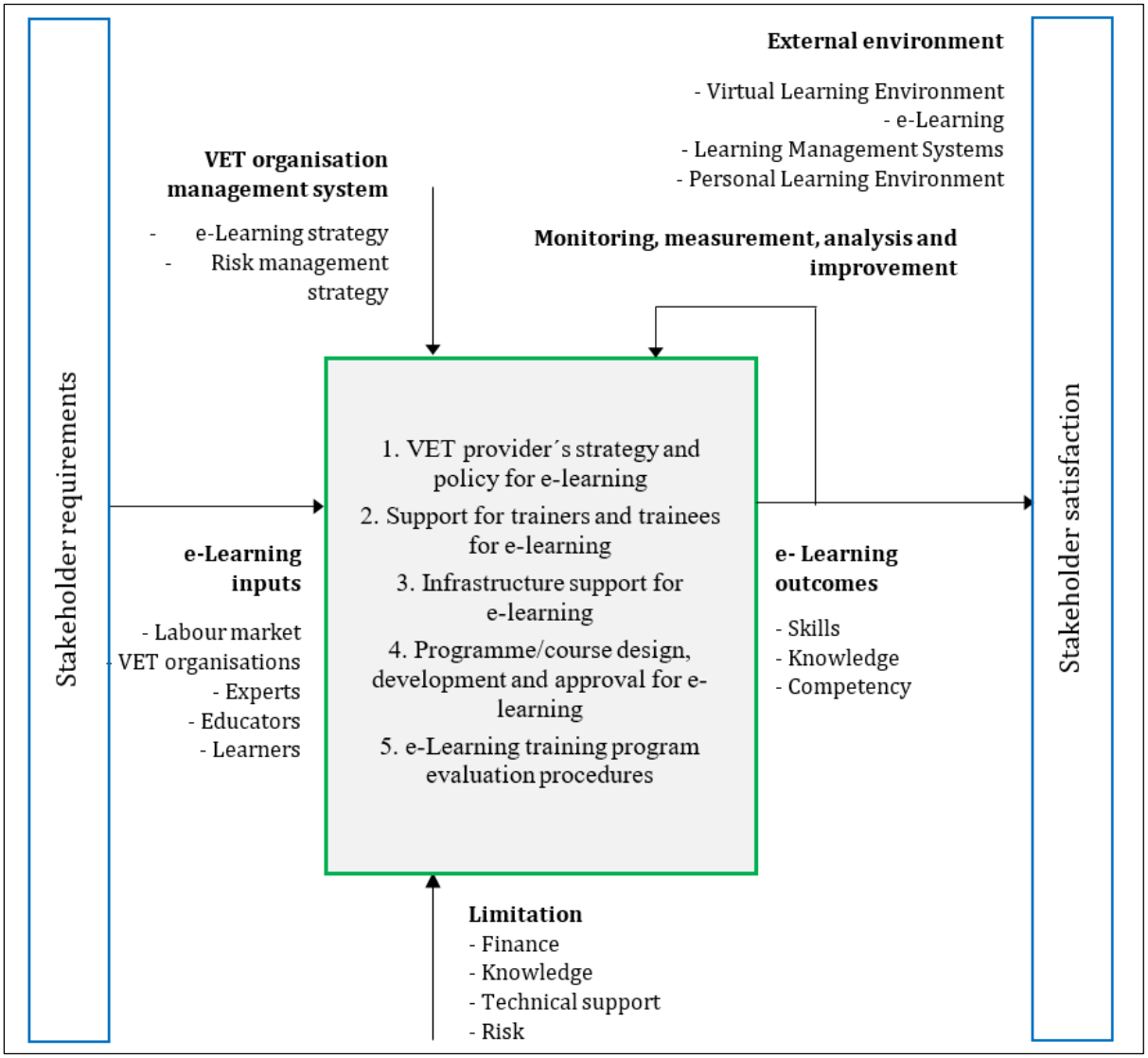



Figure 2 – Quality Assurance Framework for e-learning provision in VET organisations

Notes:

**External environment:** it is assumed that e-Learning for VET can only be implemented successfully if certain external requirements are met. These include legal frameworks being in place, and the institution/organisation having access to the necessary hardware and software

**Strategic management:** means that the e-Learning goal meets students' requirements from any location, uses and works with their knowledge and skills, and prepares them for the professional

and academic arena to contribute to a democratic and sustainable global development within society in the 21st century. Further objectives are to encourage widening recruitment and lifelong learning, facilitate attractive study and learning environments both on Campus and virtually, and increase and encourage strong development of the leader, teacher, and employee excellence (ENQA, 2010).

**Risk**: means according to (ISO 21001, 2018) "the effect of uncertainty where an effect is a deviation from the expected – positive or negative and uncertainty is the state, even partial, of deficiency of information related to, understanding or knowledge of, an event, its consequence, or likelihood".

The **curriculum design**, **course conception,** and **course delivery:** mean continuous quality assurance through validation processes and planned according to student requirements, scientific development, and community needs (ENQA, 2010).

The **staff support:** means a greater focus on scholarships for teaching and learning, constructive alignment, and encouragement of pedagogical qualification and recognition (ENQA, 2010).

**e-Learning inputs:**

- Experts for creating e-Learning courses.
- Trained teachers in creating and providing e-Learning courses.
- Students are involved and have access to electronic infrastructure (i.e. e-Resources and the e-Library independent of place, time, and languages).

**e-Learning outcomes:**

- Learning outcomes – are a detailed description of what a learner knows, understands, and can do at the end of the learning process to ensure that the individual learning objectives of the programme are fulfilled. It is stated in the content of knowledge, skills, and competencies.
- Skills – the ability or art of easily and accurately applying knowledge and performing a certain cognitive, psychomotor or social activity.
- Competency – is the proven ability of a person to perform a specific professional activity.

Skills, together with knowledge and competencies, serve as the structural characteristics of learning outcomes.

**Monitoring and measurement:** determining the status of a system, a process or an activity. Measurement process to determine a value.

**Limitations and risks:** finance, knowledge, and technical support can limit the process of providing quality e-Learning. The effect of uncertainty manifests itself as a risk.

# 4. MAIN ELEMENTS OF BENCHMARKING METHODOLOGY

## 4.1 GENERAL

The central idea of the BEQUEL project is to develop an online benchmarking tool for quality assurance of e-learning provision practices in VET institutions. BEQUEL is a continuation of the previous BEQUAL and BEQUAL.App projects which developed benchmarking tools for quality assurance in organisational practices and apprenticeships.

Benchmarking can be defined as the process of measuring services and processes against those of other organisations with similar operations. Benchmarking provides necessary insights to help organisations understand how they compare with similar organisations, even if they are in a different country or education level. Benchmarking can also help organisations identify areas, systems, or processes for improvement.

The BEQUEL benchmarking tool will help VET providers assess their performance according to core quality criteria and compare themselves with their peers in the same country or other countries.

BEQUEL targets VET providers of all types of institutes at all levels of education. The users of the tool will be quality managers, general managers, and training managers responsible for e-learning of the organisation etc., of their organisations that have a thorough knowledge of their own quality processes.

The benchmarks will be derived from the comparison of the performance of the users; thus, a quantitative rating system is required.

The benchmarking questionnaire will be easy to fill in and will not be very time-consuming to ensure that a critical mass of users complete it and a credible and reliable amount of benchmarking data is generated. The questionnaire results will be stored but not used for benchmarking purposes unless a critical mass of responses has been gathered to allow comparisons. For the BEQUEL benchmarking to be reliable, a total of 20 responses per language version (100 in total) will be collected before launching the benchmarking tool.

## 4.2 STRUCTURE AND CONTENT OF BENCHMARKING QUESTIONNAIRE

The benchmarking questionnaires for VET providers offering e-learning opportunities are based on the quality assurance framework for e-learning practices for VET schools and organisations. This framework has been developed as a part of the BEQUEL project and is based on:

- The Digital Education Plan (2021-2027) was published by the European Commission in October 2020.
- Digital Education Action Plan, published in 2018 (also by the European Commission).

- Considerations for quality assurance of e-learning provision by the European Association for Quality Assurance in Higher Education (ENQA, 2018)
- Quality Assurance of E-learning, by European Association for Quality Assurance in Higher Education (ENQA, 2010)
- A European Framework for Digitally-Competent Educational Organisations (JRC, 2015)
- The SELFIE tool (created by the European Commission)
- Other quality frameworks set at the national level.

The benchmarking questionnaire is based on the quality assurance framework and consists of 6 sections:

- Technical infrastructure
- Curriculum and course design
- Training material
- Learner and trainer support
- Training provider strategy for e-learning in VET
- Evaluation procedures

In each section, quality indicators are measured based on quality criteria. The quality criteria have been phrased as statements that the users have to review and assess on a four-level frequency Likert scale:

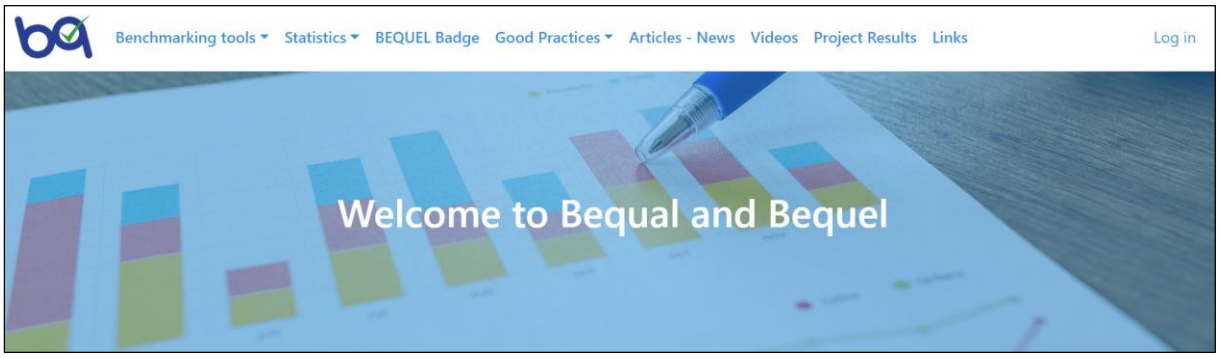
- Not at all true
- Somewhat true
- Mostly true
- Completely true

## 4.3 FURTHER CONSIDERATIONS

**Language:** The online benchmarking tool is available in the partners' countries' languages to facilitate access to the target group. The different language versions are not just translations of the original English version of the tool but instead adaptations of the tool to the national context. The different versions have the same questions for reasons of comparability but are translated in such a way that they correspond to particular national situations. The language used is kept as simple as possible and avoids jargon.

**Privacy:** The questionnaire will be filled in anonymously. Users should register first and can only access their questionnaire with this account. All users and visitors can access aggregate and statistic results.

# 5. OVERVIEW OF THE BENCHMARKING TOOL




The benchmarking tool consists of the following:

- a benchmarking questionnaire with closed questions,
- a database with the completed questionnaires,
- an algorithm for the calculation of averages and ratings.

# 6. BENCHMARKING QUESTIONNAIRE

## PART 1: VET PROVIDER'S STRATEGY AND POLICY FOR E-LEARNING

### PART 1.1: VET PROVIDER'S STRATEGY AND POLICY FOR E-LEARNING

1. The VET provider employs a distance education strategy, which is aligned with the institution's mission and strategic goals
2. The VET provider ensures that their e-learning strategy is public, transparent, and available to any interested stakeholder.
3. The VET provider periodically reviews and updates its distance education strategy.

### PART 1.2: VET PROVIDER'S POLICY FOR E-LEARNING

4. The VET provider has a quality policy for e-learning, which is in line with national frameworks.
5. The e-learning quality policy is periodically reviewed to improve future e-learning programmes
6. The VET provider has policies, procedures, and resources in place to support socially vulnerable groups (i.e. e-learners with diverse needs) among e-learning audiences.

## PART 2: SUPPORT FOR TRAINERS AND TRAINEES FOR E-LEARNING

7. The VET provider ensures that the teaching staff receives assistance and support throughout the implementation of the online training.
8. The teaching staff is updated on a regular basis on emerging technologies, and on the selection and use of new tools.
9. The teaching staff receives training on the proper use of educational material, plagiarism tools and other relevant legal and ethical concepts on a regular basis.
10. Support is available to trainers (via Hotline, e-mail, the "Frequently Asked Questions - FAQ" page, the ticket system support and other means) for issues related to access and use of the Learning Management System.
11. Support is available to trainees (via Hotline, e-mail, the "Frequently Asked Questions - FAQ" page, the ticket system support, and other means) for issues related to access and use of the Learning Management System.
12. Access to electronic libraries and/or additional educational material in digital form is provided.

## PART 3: INFRASTRUCTURE SUPPORT FOR E-LEARNING

### PART 3.1: TECHNICAL SUPPORT FOR TRAINERS AND TRAINEES WITH REGARD TO THE LEARNING MANAGEMENT SYSTEM (LMS), SOFTWARE, AND ACCESS

13. The VET provider maintains a clear policy to determine who is responsible for providing different kinds of LMS assistance and the set hours for this support.
14. Different kinds of LMS software are periodically assessed in order to select the most beneficial to the needs of the trainees.

### PART 3.2: INFRASTRUCTURE FOR THE PROVISION OF LEARNING MANAGEMENT SYSTEM (LMS)

15. The VET provider maintains local infrastructure or hosts services in Cloud services.
16. The VET provider has a documented plan for the support, maintenance, and upgrade of existing technologies.
17. The VET provider has a documented plan for the creation of backup files at an LMS level (which allows the administrator to save anything related to the LMS).
18. The VET provider has a documented plan for the creation of backup files at a program level (which allows the administrator or the instructor to save anything related to a specific program).
19. The VET provider has a documented plan for security issues (e.g., password protection, encryption, secure online exam participation, etc.).
20. The LMS offers the possibility to directly connect and share data on the e-learning programmes with the internal management system of the organisation.

### PART 3.3: LMS PROPERTIES WITH REGARD TO EDUCATIONAL CONTENT MANAGEMENT

21. The LMS offers managers and trainers the ability to create, delete, and customise the provision of programmes (adding and deleting weeks/modules, hiding modules, etc.).
22. The LMS offers the ability to schedule activities or even divide work by weeks/units.
23. The LMS offers the ability to embed and play multimedia material such as video and audio files.
24. The LMS offers the ability to create tests and assessments.
25. The LMS offers the ability to create work assignments and submit them.
26. The LMS offers the ability to correct and grade work assignments.
27. The LMS offers the ability to generate reports on the performance of trainees.
28. The LMS offers the ability to generate a report on a program (including aggregate data of access of trainees to the system, at a program level).

## PART 4: PROGRAMME/COURSE DESIGN, DEVELOPMENT AND APPROVAL FOR E-LEARNING

### PART 4.1: CURRICULUM

Training course information, characteristics of the training course offered and availability of e-learning/distance learning training programmes.

29. The VET provider has established the specific characteristics of e-learning in the design of the training offer.
30. The e-learning offers clearly identify contents, timing, learning outcomes, tasks and responsibilities of the trainees and the trainers, as well as the evaluation criteria and other relevant program information.
31. Clear and adequate instructions are provided (where required) for the elaboration of the educational activities.
32. The training material is designed to be accessible to learners, in an easy-to-use manner and with access from different operating systems and applications, such as laptops or smartphone applications, regardless of location.
33. Opportunities/tools are provided to set up learning communities (e.g. forums) and to encourage trainee collaboration (e.g. web conferencing, instant messaging, etc.), if needed.
34. Opportunities/tools are provided to set up communication channels between the trainers and trainees.

### PART 4.2: BUILDING THE LEARNING RESOURCES

35. The educational materials are designed to be multifaceted (reading resources, audiovisual material, etc.), suitable for distance education and sufficient in quantity for the expected learning outcomes of the trainees.
36. Bibliography that is appropriate, adequate, and up to date (i.e. the materials are reviewed/updated at the beginning of the program) is provided.
37. The educational material is gender, culture, and age-neutral.
38. The educational materials are flexible enough to adapt them to different target groups.
39. The language (terminology) used is suitable for the trainees and free of syntactic and grammatical errors.
40. Images, graphics, etc. are cleared/copyrighted.

### PART 4.3: PEDAGOGICAL FRAMEWORK AND DISTANCE TRAINING

41. The e-learning/distance learning program promotes an interdisciplinary approach to knowledge.

## PART 5: E-LEARNING TRAINING PROGRAM EVALUATION PROCEDURES

42. The training program includes an evaluation process of all support services available to the teaching staff and the trainees in order to ensure the general satisfaction of all stakeholders (e.g., trainees, teaching staff, administrative staff) with its implementation.
43. The training program includes a process for the institutional evaluation of the teaching staff with regard to their efficiency in distance learning, as well as evaluation of the teaching material by the trainees.
44. The VET provider has an internal procedure for validating new training programmes before they are officially launched.
45. The VET provider has a policy for regularly improving the training program based on the evaluation and feedback collected.
46. The VET provider ensures that the training program is officially accredited by an external body before it is launched.

# 7. QUESTIONNAIRE USERS GUIDE

## 7.1 ANSWER SCORING RUBRIC

| | |
|---|---|
| 0-25 | Not at all true |
| 25-50 | Somewhat true |
| 50-75 | Mostly true |
| 75-100 | Completely true |

## 7.2 USAGE SCENARIO

- The benchmarking tool is accessible only to registered users. A first-time visitor needs first to register and then log in using his/her login name and password.
- The user fills in the questionnaire and then gets the individual report, showing the performance of his/her organisation and its position compared to the other VET organisations.
- The system saves the user replies to the questionnaire and the user can resubmit the questionnaire and generate a new report. The user may also get a new report without resubmitting the questionnaire, if the system has more benchmark data and the rating has changed.
- The benchmarking tool needs a critical mass of responses, in order to be launched and provide reliable benchmarking data. The critical mass has been set to at least 20 in each country.

## 7.3 REPORTS

The system generates a number of reports after the usage of the benchmarking tool.

- **Benchmarking report**

  It provides the Statistics from all users. It is accessible to everybody, including visitors. For each quality criteria, the report presents in a bar chart the users' responses in the Likert scale.

- **Individual report**

  It provides the overall score of the user (VET provider or organisation), it gives the position of the user among all users and the position within its own country. It is accessible only to the registered user.

The individual report presents also the three strong points and the three weak points of the user, when compared to other users in the same country or in all countries. The algorithm for the calculation of strong and weak points is presented below.

## 7.4 CALCULATION OF STRONG AND WEAK POINTS

For each criterion, we can calculate the distribution of the replies of all users (VET providers HEI or companies) according to Table 2.

Table 2 – Calculation of the distribution of all users' replies

| **Reply** | **Percentage** |
|---|---|
| Not at all true | *a(i)* |
| Somewhat true | *b(i)* |
| Mostly true | *c(i)* |
| Completely true | *d(i)* |
| Total | *100* |

Question ***i*** (***i = 1*** to ***N*** – total number of questions)

The user ***j*** (***j = 1*** to ***M*** – total number of providers that replied):

*"Not at all true*" in question ***i*** is at the bottom ***a [%]*** of all centres, while the one that replied "*Completely true*" is at the top ***d [%]***.

For a specific user (***j***), the three strong points are those that have the minimum ***d(i)*** and the three weak points have the minimum ***a(i)*** of all questions. If there are less than ***3d***, strong points are the minimum ***c(i)***. Weak points are ***b(i)*** if there are less than ***3a***.

Table 3 – VET providers distribution replies

| | **VET providers** | | | | | | **Distribution of replies** | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Questions** | *1* | *2* | | *j* | | *M* | *a* | *b* | *c* | *d* |
| 1 | *D* | *a* | | *b* | | | *a(1)* | *b(1)* | *c(1)* | *d(1)* |
| 2 | *C* | *b* | | *c* | | | | | | |
| abdou3 | *d* | *b* | | *c* | | | | | | |
| … | | | | | | | | | | |
| I | *c* | *b* | | *b* | | | *a(i)* | *b(i)* | *c(i)* | *d(i)* |
| N | *c* | *B* | | *b* | | | | | | |

Results of strong and weak points of a centre are calculated each time the user asks for a report.

## REFERENCES

Agencia Estatal Boletín Oficial del Estado. (2013). *BOE-A-2013-11797.* Retrieved from Ley 1/2013, de 10 de octubre, de Aprendizaje a lo Largo de la Vida: https://www.boe.es/eli/es-pv/l/2013/10/10/1

ANECA. (2014). *National Agency for Quality Assessment and Accreditation of Spain.* http://www.aneca.es/eng/ANECA: ANECA.

APEC. (2019). *Quality Assurance of Online Learning Toolkit.* Retrieved from https://www.apec.org/Publications/2019/12/APEC-Quality-Assurance-of-Online-Learning-Toolkit

AVA. (2012). *Italian Higher Education Quality Assurance System for the Evaluation of Univeristies and Research Institutes.* https://www.anvur.it/en/activities/ava/: AVA.

CEDEFOP. (2003). *Vocational education and training in Greece.* https://www.cedefop.europa.eu/files/5135_en.pdf: Cedefop Panorama.

CEDEFOP. (2014). *Vocational Education and Training in Italy.* https://www.cedefop.europa.eu/files/4132_en.pdf: CEDEFOP.

CEDEFOP. (2016). *Vocational Education and Training in Slovakia.* Luxembourg: Publications Office of the European Union. doi:http://dx.doi.org/10.2801/831200

CEDEFOP. (2019). *Vocational Education and Training in Spain.* https://www.cedefop.europa.eu/files/4168_en_es.pdf: CEDEFOP.

CNIPA. (2004). *Dir. C. M. 06-08-2004 - Cnipa, I Quaderni n. 7, Anno I, Ottobre 2004.* Italy: CNIPA.

Comenius University in Bratislava. (2022, 4 6). *Support for long-distance education on CU*. Retrieved from e-Learning: https://uniba.sk/en/elearning/

Conferenza Delle Regioni E Delle Province Autonome. (2020). *Agreement 20/51/CR8/C9.* Retrieved from Guida Approvate Dalla Conferenza Delle Regioni E Delle Province Autonome Il 25 Luglio 2019 in Materia Di Fad/E-Learning applicabile Durante La Fase Di Em: https://www.regioni.it/

EADTU. (2016). *Quality Assessment for E-learning: a Benchmarking Approach.* Retrieved from http://e-xcellencelabel.eadtu.eu/images/E-xcellence_manual_2016_third_edition.pdf

Educación 3.0. (2022). *Opinión*. Retrieved from Cómo evaluar las clases online en tres pasos: https://www.educaciontrespuntocero.com/opinion/como-evaluar-clases-online-tres-pasos/

Education Reform. (2021, 12 5). *The Glossary of Education Reform*. Retrieved from Career and Technical Education: https://www.edglossary.org/career-and-technical-education/

EHAA. (2010). *2010eko azaroak 9, asteartea.* Retrieved from N.º 215 ZK. • BOPV - martes 9 de noviembre de 2010: EHAA - 2010eko azaroak 9, asteartea • N.º 215 ZK. • BOPV - martes 9 de noviembre de 2010

eLearning Industry. (2021). *Articles*. Retrieved from Kirkpatrick's Approach To Measure The Effectiveness Of Online Training: https://elearningindustry.com/

e-nomothesia. (2020). *Νόμος 4692/2020 - ΦΕΚ 111/A/12-6-2020 (Κωδικοποιημένος)*. Retrieved from Τρέχουσα ενοποιημένη έκδοση: 29.07.2022. Το Κωδικοποιημένο αρχείο, εκδόθηκε σε ενοποιημένο κείμενο με ενσωματωμένες τις μεταγενέστερες τροποποιήσεις με τις διατάξεις του Ν.4957/2022 - ΦΕΚ 141/A/21-7: https://www.e-nomothesia.gr/kat-ekpaideuse/nomos-4692-2020-phek-111a-12-6-2020.html

ENQA. (2010). *Quality Assurance of E-learning.* Retrieved 2021, from https://www.enqa.eu/wp-content/uploads/ENQA_wr_14.pdf

ENQA. (2015). *Standards and guidelines for quality assurance in the European Higher Education Area (ESG)*. Retrieved 2021, from ESG: https://www.enqa.eu/esg-standards-and-guidelines-for-quality-assurance-in-the-european-higher-education-area/

ENQA. (2018). *Considerations for quality assurance of e-learning provision.* Retrieved 2021, from Report from the ENQA Working Group VIII on quality assurance and e-learning: https://www.enqa.eu/wp-content/uploads/Considerations-for-QA-of-e-learning-provision.pdf

ENQA. (2018). *Report: Occasional paper 26: Considerations for quality assurance of e-learning provision.* Bruxelles: ENQA AISBL.

EQAF. (2018, 11 14). *Main considerations for quality assurance of e-learning provision*. Retrieved 2021, from https://eua.eu/resources/publications/796:main-considerations-for-quality-assurance-of-e-learning-provision.html

EQAVET. (2021). *European Quality Assurance Reference Framework*. Retrieved 2021, from https://www.eqavet.eu/What-We-Do/European-Quality-Assurance-Reference-Framework

EUA. (2020, 5 25). *Digital learning and teaching: Ensuring quality during the Covid-19 crisis*. Retrieved 2021, from https://eua.eu/resources/expert-voices/174:digital-learning-and-teaching-ensuring-quality-during-the-covid-19-crisis.html

EUA. (2021). *Internal quality assurance in times of Covid-19*. Retrieved 2021, from https://eua.eu/downloads/publications/internal%20qa.pdf

European Commission. (2018). *Digital Education Action Plan.* Retrieved from https://ec.europa.eu/education/sites/default/files/document-library-docs/digital-education-action-plan-factsheet.pdf

European Commission. (2019, 1 25). *EU Science Hub*. Retrieved 2021, from DigiCompOrg: https://ec.europa.eu/jrc/en/digcomporg

European Commission. (2021). *European Education Area, Quality education and training for all*. Retrieved from Vocational education and training initiatives: https://education.ec.europa.eu/education-levels/vocational-education-and-training/about-vocational-education-and-training

European Commission. (2021). *Selfie. Discover the digital potential of your school.* Retrieved from SELFIE: https://ec.europa.eu/education/schools-go-digital_en

European Commission. (2021-2027). *Digital Education Action Plan.* Retrieved from Resetting education and training for the digital age: https://ec.europa.eu/education/sites/default/files/document-library-docs/deap-communication-sept2020_en.pdf

European Commission. (2022). *European Education Area*. Retrieved from Vocational education and training initiatives: https://education.ec.europa.eu/education-levels/vocational-education-and-training/vocational-education-and-training-initiatives#:~:text=Vocational%20education%20and%20training%20(VET,employability%20and%20encouraging%20active%20citizenship.

Eurostat. (2021, 11 8). *Eurostat, Statistics Explained*. Retrieved from Glossary: Vocational education and training (VET): https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Vocational_education_and_training_(VET)

García-Peñalvo, F., Corell, A., Abella-García, V., & Grande, M. (2020). Online Assessment in Higher Education in the Time of COVID-19. *Education in the Knowledge Society, 21* , p. Article 1. DOI: 10.14201/eks.23013.

Gazzetta Ufficialle. (2003). *Ministero Dell'Istruzione, Dell'Unoversita' E Della Ricera.* Retrieved from Decreto 17 aprile 2003: https://www.gazzettaufficiale.it/eli/id/2003/04/29/03A05400/sg

HAHE. (2020). *Hellenic Authority for Higher Education.* https://www.ethaae.gr/en/: HAHE.

HQA. (2016). *ΠΡΟΤΥΠΟ ΓΙΑ ΤΗΝ ΠΙΣΤΟΠΟΙΗΣΗ ΠΟΙΟΤΗΤΑΣ ΤΟΥ ΕΣΩΤΕΡΙΚΟΥ ΣΥΣΤΗΜΑΤΟΣ ΔΙΑΣΦΑΛΙΣΗΣ ΠΟΙΟΤΗΤΑΣ (ΕΣΔΠ).* Retrieved from https://www.ethaae.gr/images/articles/protypa_pistopoiisis/734-protypo_esdp.pdf

HQA. (2020). *Hellenic Quality Assurance and Accreditation Agency* . Retrieved from https://www.ethaae.gr/en/about-hqa

ICDE. (2015). *Quality models in online and open education around the globe: State of the art and recommendations.* Retrieved from https://static1.squarespace.com/static/5b99664675f9eea7a3ecee82/t/5bb8e80f652deaada670aee8/1538844696866/icdequalitymodels22.pdf

Il Ministro dell'Istruzione. (2020). *Decreto recante "Adozione delle Linee guida sulla Didattica digitale integrata, di cui al Decreto del Ministro dell'Istruzione 26 giugno 2020, n. 39".* Retrieved from https://www.miur.gov.it/documents/20182/0/Decreto.pdf/41f43eab-5414-0bdb-9886-f50101ea49e6?t=159681313136

iSixSigma. (2021, 11 15). *Dictionary*. Retrieved from Definition of Benchmarking:: https://www.isixsigma.com/dictionary//benchmarking/

ISO 21001. (2018). *Educational organizations — Management systems for educational organizations — Requirements with guidance for use.* Geneva: ISO.

ISO 29994. (2021). *Education and learning services — Requirements for distance learning.* Geneva: ISO.

ISO/IEC 24751. (2008, rev. 2020). *Information technology -- Individualized adaptability and accessibility in e-learning, education and training.* Geneva: ISO.

Jurevicius, O. (2021, 11 11). *Benchmarking*. Retrieved from Strategic Management Insight: https://strategicmanagementinsight.com/tools/benchmarking/

Law no. 131/2002 Coll. (n.d.). *Act on universities and amendments to certain laws .*

Law no. 269/2018 Coll. (n.d.). *Act on ensuring the quality of higher education and amending Act no. 343/2015 Coll. on public procurement and on the amendment of certain laws as amended.*

Law no. 61/2015 Coll. (n.d.). *Act on Vocational Education and Training and Amendments to Certain Acts.*

Masoumi, D., & Lindström, B. (2011, 8 15). Quality in e-learning: a framework for promoting and assuring quality in virtual institutions. *Journal of Computer Assisted Learning*, 27-41. Retrieved from Quality in e-learning: a framework for quality in virtual institutions.

MESRS. (2022). *Akreditácie v oblasti celoživotného vzdelávania/Accreditations in the field of lifelong learning*. Retrieved from https://www.minedu.sk/akreditacie-v-oblasti-celozivotneho-vzdelavania/

Mičunović, M., Rako, S., & Feldvari, K. (2021). *State-of-the-play of the use of OERs at European higher education institutions in the field of Library and Information Science during the COVID-19 pandemic.* Erasmus+: DECriS.

MIUR. (2021). *Ministry of Education, University and Research, Italy*. Retrieved from https://www.seas-era.eu/np4/48.html

OCL. (2021). *OLC Quality Scorecard Suite*. Retrieved from Online Learning Consortium: https://onlinelearningconsortium.org/consult/olc-quality-scorecard-suite/

OECD. (2022, 4 18). *Topics*. Retrieved from Vocational Education and Training (VET) and Adult Learning: https://www.oecd.org/education/innovation-education/vet.htm

Online Learning Consortium. (2022). *Sloan-C Institute*. Retrieved from OLC Accelerate 2022: https://onlinelearningconsortium.org/learn/sloan-c-institute/

Ossiannilsson, E. (2016). *Quality Assessment for E-learning: a Benchmarking Approach.* (G. Ubachs, & L. Konings, Eds.) Maastricht: EADTU.

Project: D-TRANSFORM. (2016, 3 16). Business Models for Opening up Education: Sustainability of MOOCs, OER and related online education approaches in higher education in Europe. *Technical Report*, p. http://doi.org//10.13140/RG.2.1.4125.7369.

SAAHE. (2020). *Standards for Study Programme.* Retrieved from https://saavs.sk/wp-content/uploads/2020/12/Standards-for-Study-Programmes.pdf

SAAHE. (2020). *Standards for the Higher Education Internal Quality Assurance System.* Retrieved from https://saavs.sk/wp-content/uploads/2020/12/Standards_for_the_Internal_System.pdf

SAAHE. (2021). *National action plan for external quality assurance of higher education institutions in the Slovak Republic.* Retrieved from Slovak Accreditation Agency for Higher Education: https://saavs.sk/national-action-plan-for-external-quality-assurance-of-higher-education-institutions-in-the-slovak-republic/

Sanca, L., & Gazzella, L. (2004). *Il Ministro per l'innovazione e le tecnolologie, Il Ministro per la funzione pubblica .* Retrieved from Direttiva del 6 agosto 2004 Progetti formativi in modalità e-learning nelle pubbliche amministrazioni: https://archivio.pubblica.istruzione.it/dg_risorse_umane/allegati/direttiva_stanca.pdf

SIOV. (2022). *Vocational education and training*. Retrieved from https://siov.sk/en/vzdelavanie/odborne-vzdelavanie-a-priprava/

Slov-lex. (2015, ver. 2018). *Act no 61/2015 Act on Vocational Education and Training and on Amendments to Certain Acts.* Retrieved from Legislative and Information Portal of the Ministry of Justice of the Slovak Republic: https://www.slov-lex.sk/pravne-predpisy/SK/ZZ/2015/61/20180901

The Economic Times. (2021, October 7). *What is ´E-learning´*. Retrieved from Education - Definition: https://economictimes.indiatimes.com/definition/e-learning

UNI ENTE Italiano. (2020). *Prassi Di Riferimento UNI/PdR 89:2020.* Retrieved from Linee guida per il sistema di gestione della didattica a distanza e (Guidelines for remote and blended learning management system in schools of all levels): https://www.fidae.it/wp-content/uploads/2020/07/UNI21001129_EIT.pdf

UNIPO. (2021). *University of Prešov*. Retrieved from Virtual Learning Center of the Department: https://www.unipo.sk/en/

Vasco, Formación Profesional del País. (2018, 6 5). *Basque VET Law.* Retrieved from Boletín Profesional del País Vasco 4/2018: http://www.euskadi.eus/bopv2/datos/2018/07/1803494a.pdf

VSM/CityU. (2022). *School of Management*. Retrieved from http://www.vsm.sk/us/

ΕΦΗΜΕΡΙΔΑ ΤΗΣ ΚΥΒΕΡΝΗΣΕΩΣ. (2020). *ΤΗΣ ΕΛΛΗΝΙΚΗΣ ΔΗΜΟΚΡΑΤΙΑΣ.* Retrieved from https://www.especial.gr/wp-content/uploads/2020/12/4763-2020-nomos-epagelmatikis-ekpaidefsis.pdf

ΕΦΗΜΕΡΙΔΑ ΤΗΣ ΚΥΒΕΡΝΗΣΕΩΣ. (2018). *ΤΗΣ ΕΛΛΗΝΙΚΗΣ ΔΗΜΟΚΡΑΤΙΑΣ.* Retrieved from https://www.minedu.gov.gr/publications/docs2018/EPAL_N_4547_FEK_102A_12-06-2018.pdf

*Κοινή Υπουργική Απόφαση 26385/2017 - ΦΕΚ 491/Β/20-2-2017 (Παύση ισχύος).* (2017). Retrieved from Πλαίσιο Ποιότητας Μαθητείας: https://www.e-nomothesia.gr/epaggelmata-tekhnes/koine-upourgike-apophase-26385-2017.html

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