Modernization and internationalization of Iranian HEIs via collaboration in TEL-based curriculum development in engineering and STEM

UNITEL E-COURSE

LECTURE NOTES

MODULE 6: Modernization of teaching

Unit 6-2 Quality assurance (QA) standards of e-learning

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TABLE OF CONTENTS

Introduction

This topic will present Quality assurance (QA) standards of e-learning and has the following objectives:

Objective 1: to understand the meaning of e-learning quality and quality assurance

Objective 2: to distinguish several International Quality Assurance Frameworks for e-learning

Objective 3: to characterize the main specific features of Quality Assurance of MOOCs

Objective 4: to identify the main Standards and Guidelines for Quality Assurance of online Higher Education

1.Quality and Quality Assurance in e-learning

Does e-learning involve qualkity problems as a mode of instruction? There is a usual and widespread misconception that e-learning is not as good as face-to-face (F2F) education. Critics say particularly in Higher Education (HE), that is of less quality . The first thing to stress is that we should not talk of face-to-face education and e-learning as if they were well defined and homogenous modes of instruction. There are very different modalities and factors inside F2F Education and e-learning that prevent us to make such a straightforward assessment. Notwithstanding, even assuming this difference, the second point to stress is that e-learning should not be considered straightforward as inferior to F2F Education because it has less quality. In some cases, it may even exhibit some advantages and more quality than F2F Education. Nevertheless, it does need quality assurance procedures. As F2F education needs them. Some similar but some specific to this mode of instruction. But we grant that, bearing in mind the widespread negative misconception, the need for regulation or quality assurance is even more capital in e-learning. Things have been changing accordingly. As Ossiannilsson et al. (2015) puts it, "the distance education sector with its dependence on development of teaching materials, management of scalable systems of student support, etc., has in many instances, better developed quality assurance processes than institutions operating traditional campus/classroom provision." (p. 10)

So, to address the question, we must first define quality and quality assurance, specifically in the case of e-learning.

Myazohe (2008) refers that "the concept of quality includes 1) standards, 2) comparison, 3) goodness, and 4) uniqueness. Therefore, we perceive the quality of an object (whether concrete, abstract, or both) by applying some sort of standard: we perceive quality by its having superiority over other things by comparison (goodness), or we perceive quality by its having an ultimate value (uniqueness)."(p. 15) So we must have standards that enable us to compare different instruction cases so we may, judge about their quality, based on evidence.

According to the Portuguese Higher Education Assessment and Accreditation Agency (A3ES), Quality in Higher Education is a "multidimensional, multilevel and dynamic concept, which relates to the context of an educational model, with the mission and institutional objectives, as well as with the specific norms and terms of reference of a given system, institution, course, program or disciplinary unit. Quality can thus take on different, sometimes conflicting meanings, depending on:

(i) the perspective of the different interested in higher education (e.g. students, teachers, disciplinary areas, labour market, society, government);

(ii) its references (inputs, processes, outputs, missions, objectives, etc.);

(iii) the attributes or characteristics of the academic world to be evaluated; and

(iv) the historical period in the development of higher education." (n.d, p. 12)

In the case of e-learning, Daniel & Uvalić-Trumbić (2014) stress that "the concept of quality in online learning is as complex as the reality of online learning itself. There is a vast literature on quality in higher education, with a profusion of terms and concepts." (p.5). To this we must add that there are three levels where to review quality: a macro, a meso and a micro level. "The three levels can in short be described as macro level meaning national/global general dimensions, meso level refers to institutional matters, and finally, micro level refers to the course/module as such." (Ossiannilsson et al., 2015, p. 24)

Quality assurance in e-learning refers to "the standardization of formative efforts to maintain and improve quality in distance education for present and future practice." (Miyazoe, 2008, p. 16). There are two main roles to quality assurance: as a means of accountability and as a route to quality improvement of instruction (Daniel & Uvalić-Trumbić, 2014, p. 3). "As a regulatory mechanism, quality assurance focuses both on accountability and on improvement, providing information and value judgments through a structured and consistent process, based on well-established criteria." (A3ES, n.d, p. 8)

How can institutions assure online learning quality? As Daniel & Uvalić-Trumbić (2014) refer, "assuring quality online learning in higher education first and foremost requires institutional vision, commitment, leadership, and sound planning". (p. 5). As an example, they present indicators, from ACODE (Australasian Council on Open Distance and e-Learning) for institutional policy and governance for online learning:

"1. Institution strategic and operational plans recognise and support the use of technologies to facilitate learning and teaching.

2. Specific plans relating to the use of learning and teaching technologies are aligned with the institution's strategic and operational plans.

3. Planning for learning and teaching technologies is aligned with the budget process.

4. Institution policies specify the use of technologies to support learning and teaching covering all aspects and stakeholder perspectives.

5. Policies are well disseminated and applied.

6. The institution has established governance mechanisms for learning and teaching with technologies that include representation from key stakeholders.

7. Clear management structures identify responsibilities and authority.

8. Decisions regarding new technology adoption are made within current policy frameworks. “ (Daniel & Uvalić-Trumbić, 2014, p. 6)

Due to the fact that faculty/staff development is critical in the process of assuring quality, they provide what they consider the faculty professional development key areas:

- “Developing methodologies to promote interactive learning experiences
- Developing instructional materials
- Learning about new technological development, as well as the use of a mix of technologies
- Marketing of online courses
- Ensuring the availability of adequate assistance for facilitation of learning
- Strategies for evaluation of the process and outcomes of online learning
- Education about specific technical processes (such as integrating multimedia applications, for example)
- Opportunities for peer support, feedback, and mentoring
- Support in management of workload, particularly related to course design
- Ensuring that faculty have a working knowledge of the range of student support services offered
- Keeping faculty informed about important institutional policies and administrative procedures” (Daniel & Uvalić-Trumbić, 2014, p. 6)

2.International Quality Assurance Frameworks for e-learning

As pointed out quality and quality assurance is critical in e-learning, as also in F2F education. But how is this systematically provided? Several International Frameworks for Quality Assurance have been developed to address this issue. Here are some examples from USA and Europe.

Quality Scorecard Suite (Online Learning Consortium)

This framework provides institutions with the necessary criteria and benchmarking tools to ensure online learning excellence for the entire institution in the following areas: Administration of Online Programs, Blended Learning Programs, Quality Course Teaching and Instructional Practice, Digital Courseware Instructional Practice and Quality Scorecard for Online Student Support.

Quality Matters Standards and Rubrics (Quality Matters)

A set of 7 standards and corresponding rubrics to assess online course quality.

HE Specific Review Standards from the QM Higher Education Rubric, Sixth Edition

General Standards	Specific Review Standards	Points
Course Overview and Introduction	1.1 Instructions make clear how to get started and where to find various course components.	3
	1.2 Learners are introduced to the purpose and structure of the course.	3
	1.3 Communication expectations for online discussions, email, and other forms of interaction are clearly stated.	2
	1.4 Course and institutional policies with which the learner is expected to comply are clearly stated within the course, or a link to current policies is provided.	2
	1.5 Minimum technology requirements for the course are clearly stated, and information on how to obtain the technologies is provided.	2
	1.6 Computer skills and digital information literacy skills expected of the learner are clearly stated.	1
	1.7 Expectations for prerequisite knowledge in the discipline and/or any required competencies are clearly stated.	1
	1.8 The self-introduction by the instructor is professional and is available online.	1
	1.9 Learners are asked to introduce themselves to the class.	1
Learning Objectives (Competencies)	2.1 The course learning objectives, or course/program competencies, describe outcomes that are measurable.	3
	2.2 The module/unit-level learning objectives or competencies describe outcomes that are measurable and consistent with the course-level objectives or competencies.	3
	2.3 Learning objectives or competencies are stated clearly, are written from the learner's perspective, and are prominently located in the course.	3
	2.4 The relationship between learning objectives or competencies and learning activities is clearly stated.	3
	2.5 The learning objectives or competencies are suited to the level of the course.	3
Assessment and Measurement	3.1 The assessments measure the achievement of the stated learning objectives or competencies.	3
	3.2 The course grading policy is stated clearly at the beginning of the course.	3
	3.3 Specific and descriptive criteria are provided for the evaluation of learners' work, and their connection to the course grading policy is clearly explained.	3
	3.4 The assessments used are sequenced, varied, and suited to the level of the course.	2
	3.5 The course provides learners with multiple opportunities to track their learning progress with timely feedback.	2
Instructional Materials	4.1 The instructional materials contribute to the achievement of the stated learning objectives or competencies.	3
	4.2 The relationship between the use of instructional materials in the course and completing learning activities is clearly explained.	3
	4.3 The course models the academic integrity expected of learners by providing both source references and permissions for use of instructional materials.	2
	4.4 The instructional materials represent up-to-date theory and practice in the discipline.	2
	4.5 A variety of instructional materials is used in the course.	2
Learning Activities and Learner Interaction	5.1 The learning activities promote the achievement of the stated learning objectives or competencies.	3
	5.2 Learning activities provide opportunities for interaction that support active learning.	3
	5.3 The instructor's plan for interacting with learners during the course is clearly stated.	3
	5.4 The requirements for learner interaction are clearly stated.	2
Course Technology	6.1 The tools used in the course support the learning objectives or competencies.	3
	6.2 Course tools promote learner engagement and active learning.	3
	6.3 A variety of technology is used in the course.	1
	6.4 The course provides learners with information on protecting their data and privacy.	1
Learner Support	7.1 The course instructions articulate or link to a clear description of the technical support offered and how to obtain it.	3
	7.2 Course instructions articulate or link to the institution's accessibility policies and services.	3
	7.3 Course instructions articulate or link to the institution's academic support services and resources that can help learners succeed in the course.	3
	7.4 Course instructions articulate or link to the institution's student services and resources that can help learners succeed.	1
Accessibility* and Usability	8.1 Course navigation facilitates ease of use.	3
	8.2 The course design facilitates readability.	3
	8.3 The course provides accessible text and images in files, documents, LMS pages, and web pages to meet the needs of diverse learners.	3
	8.4 The course provides alternative means of access to multimedia content in formats that meet the needs of diverse learners.	2
	8.5 Course multimedia facilitate ease of use.	2
	8.6 Vendor accessibility statements are provided for all technologies required in the course.	2

* Meeting QM Specific Review Standards regarding accessibility does not guarantee or imply that the specific accessibility regulations of any country are met. Consult with an accessibility specialist to ensure that accessibility regulations are met.

[e-xcellence label](#) (EADTU - European Association of Distance Teaching Universities)

It includes 35 benchmarks with indicators and the definition of the level of excellence and The evaluation focus on 6 dimensions: strategic management, curriculum design, course design, course delivery, staff support and student support.

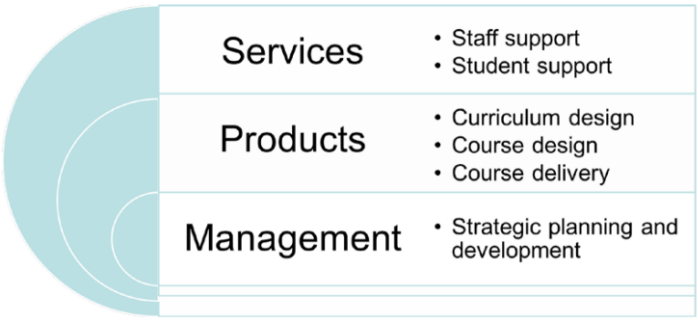
UNIQUe (EFQUELL - European Foundation for Quality in eLearning)
Although not developed since 2014, it was a solid quality framework that had 3 dimensions of analysis: Learning / Institutional Context (Strategy and e-learning, Commitment to Innovation and Openness to the Community); Learning Resources (Resources for Learning, Students, University Staff and Technology & Equipment) and Learning Processes (Quality of the Offer, Assessment of Learning and Human Resources Development).

What do all these frameworks have in common? Daniel & Uvalić-Trumbić (2014, p.3) refer some of the common aspects of a quality experience in the online learning environment:

- Institutional support (vision, planning, & infrastructure)
- Course development
- Teaching and learning (instruction)
- Course structure
- Student support
- Faculty support
- Technology
- Evaluation
- Student assessment

Examination security

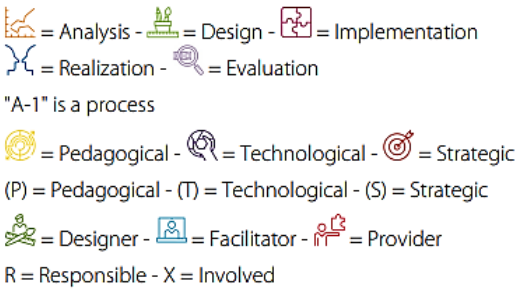
Ossiannilsson et al. (2015, p.27) stress that most quality standard models relate to 3 to 6 main dimensions and proposes the following three main domains sub-divided into six areas:



As we can see from the examples above, “quality assurance models and practices in Europe have evolved towards a multilevel and multi-stakeholder approach.” (Ubachs & Henderikx, 2022, p. 2)

3.Quality Assurance Frameworks for e-learning: the case of MOOCs

Quality Assurance in the case of MOOCs raises a particular problem because typical indicators of traditional online courses do not apply. For instance, the fact that there is a high drop out rate in MOOCs, is interpreted as a sign of lack of quality of these courses. But that may not be the case. As Stracke (Stracke, 2017) puts it: "we believe that high drop-out rates are the wrong measure for the success of MOOCs and are only demonstrating the diversity of motivations and personal goals that MOOC learners are bringing with them" (p. 289). So, even if some quality standards and indicators may be common, there are some specific ones that apply to MOOCs. Bearing this in mind, the MOOQ Erasmus projet (MOOQ, 2018), developed a Quality Reference Framework (QRF) for the Quality of MOOCs[1]. Is includes Phases (Analysis, Design, Implementation, Realization, Evaluation), Perspectives (Pedagogical, Technological, and Strategic) and Roles (Designer, Facilitator, and Provider). MOOC designers, facilitators and providers have to select the appropriate and relevant phases and processes according to their situation, the learning objectives, target groups, context and conditions. The Quality Reference Framework can be used to analyse the needs and demands for MOOCs, to design, develop and implement new MOOCs and to evaluate and improve existing MOOCs (MOOQ, 2018).



[1] Apart from the Quality Reference Framework for the Quality of MOOCs, here are some other frameworks developed: OpenupEdu (EADTU), baseado no E-xcellence and Guidelines for Quality Assurance and Accreditation of MOOCs (Commonwealth of Learning)

	Analysis			
A-1	Initiation			R
A-2	Stakeholder identification	X		R
A-3	Definition of objectives	R	X	R
A-4	Needs and demand analysis	R		X
A-5	Analysis of the external context			R
A-6	Analysis of the organizational context	X		R
A-7	Time, resources and budget planning	X		R

	Design			
D-1	Learning objectives	R	X	X
D-2	Organizational concept and roles	X	X	R
D-3	Didactical concept and methods	R	X	X
D-4	Concept for contents	R	X	X
D-5	Concept for learning activities	R	X	
D-6	Technical concept	X	X	R
D-7	Media design	R	X	X
D-8	Communication concept	R	X	
D-9	Interaction concept	R	X	
D-10	Feedback concept	R	X	
D-11	Concept for tests and assessment	R	X	X

	Implementation			
I-1	Content realization	R	X	X
I-2	Design realization	R		X
I-3	Media realization	R		X
I-4	Technical realization	X		R
I-5	Organization of use	X	X	R
I-6	Testing and activation	R		X

	Realization			
R-1	Administration	X	X	R
R-2	Learning activities and related support	X	R	X
R-3	Review of competence levels	R	X	X

	Evaluation			
E-1	Evaluation planning	X	X	R
E-2	Evaluation realization	X	X	R
E-3	Evaluation review	R	X	X
E-4	Improvements and optimization	X	X	R

4. Main considerations for Quality Assurance of online Higher Education

As Ubachs & Henderikx (2022) refer, in the field of Distance Teaching Higher Education, "two major investigations have already taken place in the past decade: first, a publication by the International Council for Distance Education (ICDE) on quality models in online and open education around the world (Ossiannilsson, Williams, Camilleri, & Brown, 2015) and, second, a study by the Working Group on Quality Assurance and e-Learning of the European Network of Quality Assurance Agencies (ENQA) on quality assurance of e-learning provisions (Huertas et al.,2018)." (p.5) The work of Huertas et al. (2018), drawing on previous work about Higher Education in general, by ENQA (European Network of Quality Assurance Agencies), proposes some main considerations for Quality Assurance of online Higher Education. These are the standards and indicators presented for the Internal Quality Assurance process (there are others for the External Quality Assurance and Quality Assurance Agencies):

Standard 1.1 Policy for quality assurance

INDICATORS

- E-learning is part of the overall strategy for the institution's development as well as the policy for quality assurance.
- The institution uses a clearly articulated policy framework and governance structure when deciding on the adoption of new technologies to ensure the expected quality of e-learning provision.
- Institutional policies, structures, processes, and resources are in place to guarantee the successful teaching and learning process of students, including those with special educational needs.
- The institution has a policy and code of practice to ensure academic integrity and freedom and ethical behaviour.
- Electronic security measures are considered by the institution's policy/code of practice.
- If external services or expertise are utilised, written agreements/contracts that define the roles and responsibilities exist.

Standard 1.2 Design and approval of programme

INDICATORS

- The institution has a clear strategy for digital innovation, e-learning being a part of it.
- This strategy is known within the institution at all levels and is adopted by teachers in charge of designing the curriculum.
- E-learning programmes are aligned with the institutional mission.
- Curricula design reflects pedagogical practices and innovation, if applicable.
- People involved in designing/developing/evaluating e-learning programmes have expertise in academic and technical aspects.
- Teaching staff involved in designing/developing/evaluating programmes are familiar with the advantages/disadvantages of using e-learning in particular course contexts.
- Student needs are considered when developing the learning model and the curricula design.

Standard 1.3 Student-centred learning, teaching and assessment

INDICATORS

- Teaching methodologies and learning activities are chosen with the aim of achieving
- Learning outcomes.
- Learning materials fit the pedagogical model and facilitate student learning.
- Authors of learning materials are relevant for the subject. Learning materials are
- Reviewed and updated periodically.
- The technical infrastructure is aligned with the teaching methodology, learning activities, and e-assessment methods, and it eases the teaching and learning process.
- E-assessment methods are fit for purpose, allowing students to demonstrate the extent to which the intended learning outcomes have been achieved.
- Students are clearly informed about the e-assessment.
- Students are aware of plagiarism rules.

- Students are trained in how to appropriately paraphrase, cite, and reference, regarding both online and print sources.
- The institution gives advice on appropriate online behaviour (netiquette rules).

Standard 1.4 Student admission, progression, recognition and certification

INDICATORS

- Students/prospective students are informed about requirements concerning equipment, e-learning and digital skills, pre-knowledge and prerequisite subjects, and attendance.
- Students are informed about the workload and pedagogical model of the e-learning programme.
- The institution has a policy and procedure in place for recognition of prior learning.

Standard 1.5 Teaching staff

INDICATORS

- The institution has defined the structure, profile, and role of the teaching staff that is aligned with the pedagogical model.
- The institution uses appropriate instruments to guarantee that the profile of the teaching staff corresponds to their duties.
- The teaching staff is trained and proficient in the use of learning technologies and e-assessment methods. There are particular training activities for new staff.
- The institution has developed procedures to identify the support requirements of the teaching staff. Technological and pedagogical support services for teachers are adequate, accessible, and timely.
- The teaching staff-student ratio avoids excessive workload for teachers and tutors.
- The institution has implemented appropriate procedures for recruiting and hiring teaching staff.
- The teaching staff is coordinated effectively.

Standard 1.6 Learning resources and student support

INDICATORS

Learning resources:

- The VLE supports a variety of methods and tools.
- The technical infrastructure ensures the accessibility of the e-learning programme by students with special educational needs.
- The institution defines the electronic security measures that guarantee standards of quality and information integrity and validity.
- The VLE is based on non-proprietary web standards and is constantly updated to reflect technological changes.
- The institution provides students with an adequate e-library and virtual labs.

Student support:

- The institution has procedures in place that cover student support, including tutoring, pedagogical, technological, and administrative elements.
- Student support is offered according to the student's profile and their specific needs.
- The student support reflects characteristics of e-learning. –
- Support for the development of learning, as well as digital skills (students are guided towards reflection, developing time management skills, etc.), is provided.
- Students receive guidelines/training in using e-learning resources (VLE, e-library, etc.).
- Hours of support are transparent and suit the needs of students; for instance, periods of peak demand (evenings, weekends, holidays, etc.) are considered.

Standard 1.7 Information management

INDICATORS

- Collected data is used in order to evaluate e-learning programmes (e.g. comparative analysis of course design).

- There is a strategy on the use and purpose of learning analytics within the institution (i.e. the aim is improving student support).
- The information management system includes relevant, updated, and reliable information concerning the institution and its programmes.
- The institution considers ethical norms and government policy with respect to data protection and the privacy of students.

Standard 1.8 Public information

INDICATORS

- The institution publishes reliable, complete, and up-to-date information on study programmes (i.e. recognition of qualifications, learning objectives, credits, requirements, assessment methods, timelines, dates relevant for the programme).
- The institution publishes reliable, complete, and up-to-date information on institutional technical support.
- Technical requirements to enable the full and effective use of the system are clearly identified and published.
- The institution publishes information on completion rates, pass rates, and dropout rates.

Standard 1.9 On-going monitoring and periodic review of programmes

INDICATORS

- E-learning programmes are reviewed, updated, and improved.
- Pedagogical developments are aligned with the institutional strategy.
- ICT and pedagogy developments are analysed and implemented when appropriate.
- The internal quality assurance system includes feedback to stakeholders (especially to students).

Standard 1.10 Cyclical external quality assurance

E-learning provision is included in the external quality assurance procedures in the same way as is provision provided through any other means.

5.Conclusion

We have started by enlightening what do Quality and Quality Assurance mean and then we have presented some International Quality Frameworks for e-learning, summing up some of their main standards. We have also addressed the case of Quality for MOOCs and presented a Quality Reference Framework developed by the MOOQ Erasmus+ project. And finally, we dealt with some main considerations for Quality Assurance of online Higher Education presenting ten standards and corresponding indicators, from ENQA.

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