

# Practitioner's guide for recognition of e-learning

Introducing a step-by-  
step approach towards  
academic recognition  
of stand-alone e-learning

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# Introduction

**This practitioner's guide for recognition of e-learning offers hands-on information for the purpose of academic recognition of MOOCs, micro-credentials and other forms of stand-alone e-learning.**

Over the last few years new forms of e-learning have mushroomed and continue to do so. These 'alternative' learning experiences are not captured by the current recognition practice, that focuses primarily on assessing qualifications obtained through formal education. There are however obvious economic and social benefits in evaluating experiences from online learning and recognizing the acquired skills and competences for the purpose of further study and work.

### **For whom is this guide?**

The guide is aimed at staff responsible for recognition of credentials, both for admission to a study programme and for exemption of parts of a study programme. Depending on the national context and the purpose of recognition, this includes:

- University admissions office staff
- University access office staff
- Faculty course directors
- Boards of examiners
- Study boards
- Credential evaluators at ENIC-NARICs
- Others

In view of the diverse group of stakeholders involved, and keeping in mind that e-learning is relatively new and still evolving, the practitioner's guide aims to provide to the point, practical and easily accessible information.

### **What will we do?**

In the first chapter 'MOOCs and other forms of stand-alone e-learning' we will explain what is understood by stand-alone e-learning. Frequently used terms like OER, MOOC and SPOC will be clarified and we will reflect on the different target groups of e-learning and the role of e-learning platforms.

Supported by concrete examples, the next chapter explains how recognition of e-learning can be integrated in institutional recognition procedures. Finally, in chapters three and four, we will discuss a step-by-step approach to help practitioners make an informed recognition statement within a reasonable amount of time, based on seven criteria for recognition of e-learning.

# **MOOCs and other forms of 'stand-alone' e-learning**

## What is stand-alone e-learning?

By stand-alone e-learning we mean all forms of e-learning that are offered outside of an accredited degree programme. Degree programmes that are fully or partially online or that make use of blended learning are not included in this definition. However, individual courses from higher education institutions that are offered, free or otherwise, via MOOC platforms are included. So are course offerings by online providers outside formal higher education, such as the Saylor Academy or LinkedIn platform Lynda.

To better understand current developments in e-learning, three areas of online learning provision are distinguished: degree education, continuous education and lifelong learning (for professional training) and online open education<sup>1</sup>.

### Degree education

The presence of digital technology, together with the digital skills of students, allows for new forms of teaching and learning. As a result, blended and online learning are increasingly being integrated in mainstream degree education. In general, recognition of online and blended degree programmes, if provided by an accredited institution, is not problematic.<sup>2</sup> Therefore this practitioners guide will focus on e-learning that is offered outside regular degree programmes, for instance as part of a professional training programme or in the form of online open education.

### Continuous education and lifelong learning (for professional training)

Online learning offers the flexibility to study at any location and at the student's own pace. For professionals this opens new possibilities to combine study and work. Many higher education institutions consider continuous education as complementary to regular degree programmes. However, some institutions expect that the number of students in continuous education will outnumber those in degree education in the near future.

### Online open education - OERs and MOOCs

The aim of open education is to widen access to and successful participation in education by removing barriers and offering multiple ways of learning and sharing knowledge. Open education by OERs and MOOCs (see definitions below) are tackling the cost barrier by providing education for free. Thus, anyone with an internet connection can access this type of education.

In practice the three areas of learning provision described above are increasingly intermingled, creating new, hybrid forms. For example, MOOCs that can be taken as stand-alone courses, but can also be stacked into short courses that give exemption in a degree programme.

## Frequently used terms

Development of e-learning is constantly in flux and associated terminology used in discussions and publications about e-learning is subject to change. New terminology is formed, with older terms losing their original connotation.

Nevertheless, for the purpose of better understanding e-learning and how it relates to the formal education framework, some frequently used terms are described below:

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1) Hendriks, P., Jansen, D. (2018). The Changing Pedagogical Landscape. P. 54

2) Nuffic (2018) Oops a MOOC, dealing with eclectic learning in credential evaluation.

## OER

OERS (Open Educational Resources) are generally described as online learning materials that can be retained, reused, revised, remixed and redistributed for free. They can also be a source for independent learning for learners who study an OERS outside any formal educational setting. They are easily and freely accessible by all on the internet. As there is no facilitating interaction with a teacher, OERS are not considered as education.

## MOOC

MOOCs (Massive Open Online Courses) are offered online and for free, providing massive and open access to learning opportunities for all, regardless of previous academic achievement. MOOCs can be full courses including feedback, tutoring and exams, although some of these services are not free of charge with all providers. These courses are considered to be education, as learners engage in a teaching and learning process.

## SPOC

SPOC is an abbreviation of Small Personal Online Course or Small Private Online Course. The term refers to a version of a MOOC used locally with on-campus students. SPOCs support blended learning and flipped classroom learning, which combine online resources and technology with personal engagement between faculty and students.

## Online proctoring

Proctoring is another word for exam supervision. Online proctoring refers to a digital form of assessment which allows students to sit exams from any location. A number of companies worldwide offer online proctoring services to ensure the authenticity of the test taker and prevent cheating.

## Micro-credentials

With micro-credentials educational institutions can break their programmes down into smaller units and link them to an assessment or recognition. They can offer these individual units not only to their own students, but to new target groups such as professionals. Micro-credentialing is also possible within a workplace setting, to enable the acquisition of specific skills.

Examples of micro-credentialing are the MicroMaster programmes offered by **EdX**. This is a fee-based series of graduate level courses that provide advanced learning in a specific career field. MicroMasters are recognized by employers for their job relevance. Students may also apply to the universities offering credit for the MicroMasters certificate and, if accepted, can pursue an accelerated and less expensive master's degree.

## Badge

In some online classes, such as MOOCs, workplace training or for-credit courses offered through universities, instructors have begun incorporating digital badges into their curricula. Students earn these badges once they achieve a certain milestone or develop a particular skill and can then post them on social media or an online portfolio. When somebody – such as a potential employer – clicks on the badge, it will link to information on how and when the badge was earned.

## E-learning, for whom?

E-learning is used for all types of students: from regular degree students in the form of online or blended programmes, to professionals that combine study and work. In addition, it is expected that e-learning can increase the accessibility of higher education for under-represented groups. A case in point is KIRON, a German NGO that supports refugee students by allowing them to start their studies during the waiting period in a refugee camp or a reception centre, using MOOCs. These MOOCs are offered by higher education providers and available on platforms such as Coursera or EdX. They are accessible to anyone.

KIRON makes a selection of MOOCs on the basis of quality and field of study, combines them into study units and provides student support. In addition, KIRON establishes learning agreements with the higher education institutions allowing KIRON students with MOOC certificates to be admitted or exempted from parts of the study programme. 'MOOKlets' have been developed to give an overview of the selected MOOCs and to inform higher education institutions about their learning outcomes and their workload<sup>3</sup>.

## Online provision: models and examples

Institutions can offer MOOCs independently, but that does require the necessary technical capacity and know-how. For this reason, they often choose to make use of MOOC platforms. These platforms take care of the technical requirements and provide technical support. In addition, they have a PR function: large platforms can increase the visibility of the institution and help them to enter new markets. The MOOC platforms also support international university networks by organising joint meetings and events. When selecting a MOOC platform, higher education institutions may consider the presence of other institutions that they perceive as trustworthy/respected. Finally the platforms collect data about the learning behaviour of online students. These so-called learning analytics can help institutions to improve (online) educational offerings and to reach out to potential students more effectively.

Some of the largest and most well-known platforms are:

- **edX.** A non-profit MOOC provider. It hosts online university-level courses in a wide range of disciplines to a worldwide student body. Massachusetts Institute of Technology and Harvard University created edX in May 2012. As of 29 December 2017, edX has around 14 million students taking more than 1,800 courses online.
- **Coursera.** A private company, founded in 2012. Coursera works with universities and other organizations to offer online courses, specializations, and degrees in a variety of subjects such as engineering, humanities, medicine, biology, social sciences, mathematics, business, computer science, digital marketing and data science. As of June 2018, Coursera had more than 33 million registered users and more than 2,400 courses.
- **Udacity.** A for-profit educational organization founded in 2012 offering massive open online courses (MOOCs). While it originally focused on offering university-style courses, it now focuses more on vocational courses for professionals in the fields of programming, data science and artificial intelligence.

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3) Birnkammerer, H. (Ed.). (2018). Quality Handbook Curriculum. Kiron Open Higher Education, <https://kiron.ngo/2018/12/04/kirons-quality-handbook-curriculum-version-2-a-revised-and-extended-description-of-kirons-academic-work/>

In response to the large US based MOOC platforms, European educational providers have created their own platforms, sometimes with support of national governments. Larger European platforms include France Université Numérique (FUN), Miriadax (for courses offered in Spanish and Portuguese), EduOpen (Italy) and Futurelearn (UK). Meanwhile, the European Commission supports initiatives to create a Pan-European MOOC platform, e.g. the **European Multiple MOOC Aggregator** (EMMA). In other regions we see a similar development. Chinese universities offer courses on Coursera and EdX, but increasingly make use of local platforms. One of the first and biggest Chinese platforms is XuetangX, created in 2013.

## Institutional recognition procedures

Higher education institutions have a dual role with regards to e-learning: they can be a provider of online courses and they are the competent authority<sup>4</sup> for the recognition of e-learning certificates that have been obtained elsewhere. This practitioner's guide relates specifically to the second function of higher education institutions, as it provides guidance and support to university staff involved in making recognition decisions.<sup>5</sup>

Before going into the details of assessing an e-learning certificate, we will provide suggestions as to how educational institutions can integrate recognition of e-learning into their already existing recognition procedures in order to deliver fast and fair recognition decisions. Starting from good practice in the recognition of formal education, this chapter offers a reflection on the possibilities to extend these existing practices to recognition of online learning.

### Good practices in recognition

Good practices in recognition are described in the **EAR-HEI manual**. Chapter 12, 'Institutional recognition practices', offers guidance on how to organise recognition within higher education institutions in line with the principles of the Lisbon Recognition Convention (LRC). The importance of a centralized recognition procedure, transparency and quality assurance of the recognition procedure is highlighted:

- The more *centralized* a recognition procedure is within a higher education institution, the more likely it is that students will not encounter problems with recognition. A central recognition unit is able to develop uniform procedures and make available all relevant information on recognition to the academic staff members involved<sup>6</sup>;
- *Transparency* is key to ensure applicants get the most accurate, clear and reliable information on recognition procedures and criteria applied<sup>7</sup>;
- *Internal and external quality assurance* of the recognition procedure is an important tool to enhance the quality and consistency of recognition decisions. Standard 1.4 of European Standards and Guidelines (ESG) requires institutions to apply pre-defined and published regulations covering all aspects of the student life cycle, including recognition and admission<sup>8</sup>. The relevant guideline reads as follows:

4) See: **Lisbon Recognition Convention, Section II – The competence of authorities**.

5) To better inform e-learning providers about academic recognition a position paper is available: **Academic recognition of e-learning; recommendations for online learning providers** (Nuffic, 2019)

6) Nuffic, 2016: "The European Recognition Manual for Higher Education Institutions; practical guidelines for credential evaluators and admission officers to provide fair and flexible recognition of foreign degrees and qualifications", p.77.

7) Ibid. p.72.

8) Ibid. p.80.

*'Fair recognition of higher education qualifications, periods of study and prior learning, including the recognition of non-formal and informal learning, are essential components for ensuring the students' progress in their studies, while promoting mobility'.*

### **Integrating e-learning in existing recognition procedures**

Clearly, institutional recognition procedures can and do vary from one educational institution to another and are often dependent on the purpose of recognition and the type of qualification being reviewed. In practice recognition of stand-alone e-learning is not always the responsibility of a central admissions office. Particularly when it concerns a request for exemption of parts of a study programme on the basis of e-learning certificates, this often is delegated to the faculty, the course director, or other bodies within the institution. However, this form of recognition also falls under the broad definition of the LRC and of the ESG mentioned above. It is therefore important to formulate a shared and unambiguous institutional policy, to develop uniform procedures and to ensure clear communication, both within the institution and outside.

Ideally these recognition procedures are quality assured internally as well as externally. Whereas internal quality assurance is the responsibility of the higher education institution itself, external quality assurance is done by the national quality assurance agency. This agency is responsible for overseeing if internal quality assurance is in line with European standards. To ensure the necessary knowhow is in place, it is advisable to include expertise on online learning in the review panels.

### **Example: Internal guidance at Delft University of Technology**

TU Delft is a public university in the Netherlands. The university offers more than 100 e-learning courses in a wide variety of subjects aimed at different groups of learners. TU Delft has developed basic guidelines to familiarize the Board of Examiners with e-learning and help them to determine the quality of MOOCs for the purpose of recognition. The guidelines include:

- Check if the level, the workload and the content of the MOOC is comparable to courses at TUD.
- Check if there was ID verification, to ensure the certificate was obtained by the applicant.
- Check if and how the learning outcomes have been tested. Was there an examination, online or on campus? Or was testing done on the basis of peer review?
- Other elements that can be considered are success rates or the reputation of the MOOC provider or the teacher.

### **The use of RPL**

As e-learning is a relatively new phenomenon, specific procedures for recognition of e-learning often are not in place and responsible recognition authorities have little experience in admitting students, or giving exemptions, on the basis of e-learning certificates.

Sometimes, procedures for the recognition of prior learning (RPL) are used to recognize e-learning. RPL procedures concern the recognition of non-formal and informal learning and are developed to include a wide variety of highly individualized types of learning. As a result,

RPL procedures often are lengthy, involving portfolio development and assessments, and require considerable efforts and costs both from the student and from the higher education institution/recognizing body. For this reason RPL procedures may not always be the most suitable approach.

As e-learning in general offers much more standardized study, standard recognition procedures that are used for the recognition of foreign qualifications can also be used as a starting point. These recognition procedures are much faster and less cumbersome. In the next chapter we will explain how an assessment can be done on the basis of the e-learning certificate and other available information on the study programme, making use of a pre-defined set of assessment criteria.

## Recommendations

- Formulate a shared policy on the recognition of stand-alone e-learning and develop uniform procedures. If different staff members are involved in the recognition of e-learning, they should be aware of the institutional policy and procedures. The central admissions office can offer guidance and support;
- Consider taking standard recognition procedures as a starting point for the assessment of e-learning. RPL procedures often are lengthy and costly and therefore less suitable;
- Make sure recognition of e-learning is included in internal and external quality assurance mechanisms;
- Make sure information about the recognition of e-learning is publicly available, for instance by providing online information and/or by assigning an institutional contact point that can answer questions about recognition of e-learning.

# **Seven criteria for recognition of e-learning**

Since the start of the Bologna process and the introduction of the three cycle system (bachelor, master, doctorate), common standards for the quality, level, learning outcomes and workload of study programmes in formal higher education have been agreed upon within the EHEA. National quality assurance agencies are responsible for overseeing the quality of study programmes, levels have been established according to the National Qualification Framework, diploma supplements are widely used to describe the learning outcomes and the European Credit Transfer System (ECTS) helps to determine the workload. This standardization greatly supports fast and fair recognition of foreign qualifications.

Recently the **European MOOC Consortium** launched a **Common Microcredentials Framework** (CMF), with the objective to streamline e-learning and facilitate recognition. The CMF is an agreement amongst Europe's biggest e-learning providers on the specifications a micro-credential should adhere to. Despite this important initiative, most stand-alone e-learning, even when it is offered by recognized higher education institutions, still falls outside the scope of standardized frameworks. As a result, assessment of stand-alone e-learning requires a greater commitment from the recognition professional, who will often have to find alternative ways to come to an informed and justifiable recognition decision.

In this chapter we will introduce a step-by-step approach to help practitioners make an informed recognition statement within a reasonable amount of time. The seven criteria for recognition of e-learning, as identified in '**Oops a MOOC!**'<sup>9</sup>, will be our point of departure. Although these criteria were originally developed for the assessment of MOOCs, they can also be used for the assessment of other types of stand-alone e-learning.

The seven criteria are:

1. Quality of the study programme
2. Verification of the certificate
3. Level of the study programme
4. Learning outcomes
5. Workload
6. The way study results are tested
7. Identification of the participant

In the following pages, we will explain these seven criteria for the recognition of e-learning and provide examples from daily practice. In addition, we will present a methodology for determining the level of robustness of each criterion, using descriptors that have been identified for each one. This approach is based on the JRC Science for Policy Report on **Validation of Non-formal MOOC based learning** and can be used by recognition professionals to score e-learning providers and courses offered. The higher the level an e-learning course, the more the course can be trusted and the more likely it is that the certificate will be recognised for admission or credit transfer.

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9) Nuffic 2018, policy paper: Oops a MOOC! Dealing with eclectic learning in credential evaluation.

**Figure i: Traffic light model<sup>10</sup>**

Level of robustness	Quality	Authenticity	Level	Learning outcomes	Workload	Testing	ID
0							
1							
2							
3							

## 1. Quality

Quality assurance is an important aspect of the recognition of qualifications. Study programmes should comply with national quality standards in order to be recognized for further study and/or employment. Whereas the national quality assurance agency is responsible for overseeing the quality at higher education institutions (external quality assurance), higher education institutions should also have their own (internal) quality assurance mechanisms in place.

However, MOOCs and other forms of stand-alone e-learning often fall outside the scope of both internal and external quality assurance mechanisms at higher education institutions. As a result, there currently is no widely-recognised, codified measure of quality in e-learning courses. In 2014 the European Association for Distance Teaching Universities (EADTU) put quality assurance of MOOCs on the agenda by launching the OpenUpEd quality model. However, as of May 2019 only a handful of universities have acquired the **OpenUpEd quality label**. Recognition professionals will therefore have to find alternative ways to assess the quality of e-learning.

Quality of e-learning encompasses areas such as course development, design and structure, teaching provision and value for money for the end user. When determining the quality of a course for the purpose of academic recognition, the following factors can be taken into consideration:

- *Course provider status*

If the course provider is an accredited institution, this may suggest that the course complies with the institutions' general quality standards.

- *Internal quality assurance*

Does a recognised institution employ the same quality assurance measures for its e-learning courses that it does for its on-campus programmes? ENQA occasional paper 26 identifies elements of quality in e-learning, that higher education institutions should take into account when developing e-learning programmes (including institutional support, documentation of learning outcomes and content and electronic security measures) .

- *External quality assurance*

Is there evidence that e-learning is part of the external quality assurance procedure?

<sup>10)</sup> This traffic light model was also presented in Nuffic's publication 'Oops a MOOC! Dealing with eclectic learning in credential evaluation' (2018). For the e-Valuate project the different levels of robustness have been further elaborated and explained.

- *Recognition of course by third parties (educational)*

Is the course recognised by a third party, such as a recognised institution, in the form of credits or course exemptions?

### **Example: Saylor Academy**

The **Saylor Academy** offers free online courses in all kinds of subject matters. Although the Saylor Academy is not an accredited education institution, KIRON has selected MOOCs from the Saylor Academy to prepare refugee students for further study at accredited German higher education institutions. On the basis of course certificates obtained at the Saylor Academy, students can be admitted to bachelor or master programmes, or get course exemptions.

If there is evidence that a course certificate from the Saylor Academy is being used successfully for admission/exemption at a accredited hei, recognition at your own institution can be considered as well.

- *Recognition of course by third parties (professional)*

Is the course recognised by employers in the form of access to a particular profession, access to further training or progression within a profession?

- *Credit / course exemption*

Is the course eligible for credit transfer or exemptions at another accredited institution?

### **Example: Micromaster AI**

ColumbiaX offers a **Micromaster Artificial Intelligence** through EdX. Upon completion of the programme students may be exempted from 25% of the coursework toward a Master's degree in Computer Science at Columbia University.

The course exemption offered by Columbia University can be taken into consideration when a student applies at your institution with the Micromaster AI.

- *Student satisfaction*

Although not a key component in determining quality, positive reviews may indicate that the students are satisfied with the quality of the information provided by the course, the system that provides the course and the learning outcomes of the course. A large cross-section of reviews over a reasonable period of time should be considered and the independence of such reviews should also be taken into account. **Class-central** offers a large number of course reviews from a range of providers. Providers such as Coursera may also include reviews of the MOOCs they provide, for example <https://www.coursera.org/learn/dino101/reviews>.

## Robustness of quality in e-learning

Level	Descriptors
0	No quality indicators (e.g. weak course provider status, course not recognized by others, no internal or external QA, no/negative student reviews).
1	Weak quality indicators (e.g. positive student reviews. Course provider not accredited, but alternative forms of recognition/QA available).
2	Substantial quality indicators (e.g. course provided by accredited institution and eligible for credit transfer. But no information on internal or external QA mechanisms).
3	Strong quality indicators (e.g. course provided by accredited institution, e-learning integrated in internal and external QA mechanisms).

## Recommendations

Internal and external quality assurance is an important aspect of the recognition of qualifications. However, as MOOCs and other forms of stand-alone e-learning often fall outside the scope of both internal and external quality assurance mechanisms at higher education institutions, other criteria can also be used to establish the quality of e-learning. The course provider status, as well as recognition by third parties (higher education institutions or employers) and student perception of the course may be taken into consideration.

### 2. Verification

Verification is the process by which a credential evaluator establishes that an award presented is genuine and has been issued by the institution or body stated on the certificate. E-learning awards come in many different forms, the most common being degree or diploma style certificates and digital badges.

Unlike 'traditional' awards where a request can be made to an institution for official academic records or certified copies, e-learning awards present unique issues regarding verification. There are a several ways to verify a certificate:

- Check on the website of the awarding body to see if the course or award is listed. Due to the constant evolution of e-learning, information may get lost and historical awards may require further research such as contacting the course provider directly;
- *Verified certificate* - As students seek to provide proof to an employer or educational institution that they have successfully completed a course, 'verified certificates' have become an integral part of the e-learning ecosystem. This takes a number of forms, such as a 'secure verification URL' which can be used by graduates to securely share the certificate, enables third parties to verify that an award is genuine and in some cases view course details. Some e-learning providers include a unique number on the certificate or award which can be entered on the provider's website to check the validity of the document. It should be noted however that verified certificates are not offered for all courses and typically require a fee to be paid by the student.

Awards issued by major e-learning providers may include some or all of the following information:

- logo and name of MOOC platform;
- logo and name of the partner institution offering the course;
- student name;
- course name;
- course number/code;
- study dates (start and finish);
- signature of head of course, department or institution;

- web link for third parties to verify certificate;
- further details on the content of the course;
- mode of delivery;
- student performance/results expressed in grades, percentages etc.;
- number of ECTS allocated or workload expressed in hours or full study days.

Award certificates may use the following terminology:

#### Statement of Participation

This shows that the student has taken part in a course, but has not undergone any form of assessment. Such a statement would not typically confer credit points or any form of qualification.

#### Certificate of Accomplishment, Certificate of Achievement or Statement of Attainment

This shows that the student has not only attended the course but also successfully completed the required assessments and/or examinations of the course. As there is no strong correlation between the formality of a certification and the robustness of an assessment<sup>11</sup> (thus: a verified certificate of accomplishment can also be issued on the basis of poor examinations), it is key to also check the way study results have been tested. Under (6.) different forms of assessment are discussed in more detail.

#### E-learning certificate supplement

Some e-learning providers, such as **Iversity**, issue a supplement to the e-learning certificate, which includes more detailed information such as course content and structure, learning objectives and a grading scheme.

Students holding a number of e-learning certificates also have the opportunity for a third party organisation, like **MoocLab**, to issue a 'verified academic transcript' detailing a series of e-learning certificates and verifying their authenticity<sup>12</sup>. This document could be an additional confirmation of the authenticity of certificates submitted.

11) JRC Science for Policy report, 2016: Validation of non-formal MOOC-based learning - An Analysis of Assessment and Recognition Practices in Europe (OpenCred), p.57

12) See Annex B for an example

## Example: Erasmus+ Teacher Academy Certificate

SchoolEducationGateway	TeacherAcademy	SchoolEducationGateway	TeacherAcademy
<p><b>CERTIFICATE OF COMPLETION</b></p>  <p>ERASMUS+</p> <p>TEACHER ACADEMY COURSE</p> <p><i>Competences for 21st Century Schools</i></p> <p>19th September - 16th October 2016</p>  <p>This is to certify that</p> <p>has successfully completed the "Competences for 21st Century Schools" online course on the Teacher Academy</p> <p>Brussels, 16th October 2016</p> <p><u>Course details</u>            Duration: 16 Hours            Description: <a href="http://academy.schooleducationgateway.eu/web/competence-for-21st-century-schools">http://academy.schooleducationgateway.eu/web/competence-for-21st-century-schools</a>            Organiser: School Education Gateway, Directorate General for Education and Culture of the European Commission            To contact the organisers visit: <a href="http://www.schooleducationgateway.eu/en/pub/about.htm">http://www.schooleducationgateway.eu/en/pub/about.htm</a></p>		<p><b>Learning Objectives &amp; Activities</b></p> <p> <b>Module 1: Introducing Competences for 21st Century Schools</b>            The course participant who has successfully passed this module has achieved the following learning outcomes: 1. Understand what is meant by key competences; also often referred to as '21st century skills', and why developing them at school is so important in today's world; 2. Understand that the definition of competences as well as national and international frameworks vary but share common points; 3. Be familiar with the basic key principles for teaching and assessing key competences; and 4. Be familiar with how various countries across Europe have implemented a key competence approach in school education, particularly in Ireland which is the case study country used throughout the course.</p> <p> <b>Module 2: Teaching Key Competences through Project Based Learning</b>            The course participant who has successfully passed this module has achieved the following learning objectives: 1. Understand the principles behind Project Based Learning, including inquiry-based and problem-based methods; 2. Be familiar with the preliminary checklist, basic steps and strategies recommended to design a Project Based Learning activity; 3. Understand how to set up a collaborative problem-solving task; 4. Understand the cognitive and social skills learners need to apply and teachers need to observe during a collaborative problem-solving task; 5. Be familiar with a range of Project Based Learning examples developed by teachers and students from different countries, targeting various competences and age levels; 6. Be able to design a Project Based Learning Plan to effectively develop one or more of learners' key competences or transversal skills.</p> <p> <b>Module 3: Assessing Key Competences</b>            The course participant who has successfully passed this module has achieved the following learning objectives: 1. Be familiar with the three major approaches to student assessment (summative, formative and self-assessment) and understand that all types of assessment of key competences need to be valid, reliable and fair; 2. Understand that the assessment of key competences needs to measure students' reasoning processes, understanding of interconnections, and problem-solving skills; 3. Be familiar with a range of innovative tools and approaches, both 'low-tech' and 'high-tech', which are effective at measuring students' reasoning processes and ability to solve complex problems; 4. Understand the importance of classroom-based formative assessments for assessing key competences; 5. Be familiar with the evidence required for assessing collaborative problem solving, and how teachers can use rubrics and developmental progressions to interpret their observations of learners' skills and behaviour.</p>	

## Robustness of verification

Level	Descriptors
0	No verification possible (e.g. non-verified certificate and online information on the course is no longer available).
1	Limited verification possible (e.g. non-verified certificate available, containing limited information on the course, without details on course dates, course content and/or results etc.).
2	Some verification possible (e.g. non-verified certificate available, course details on the certificate coincide with online information).
3	No doubt about the validity of the certificate (e.g. badge or verified certificate available to prove the award presented is genuine with verification number or secure verification URL).

## Recommendations

- Verification tools are used by many major e-learning providers and should be checked upon receipt of a document where there is doubt regarding its authenticity;
- Develop a database of verified certificates from e-learning providers to provide examples that can be referred to when there is doubt regarding the authenticity of a certificate submitted.

### 3. Level

E-learning can encompass various levels, from non-academic courses to preparatory courses and academic courses that are seen as rigorous enough to be incorporated into higher education or highly specialised courses for professionals. In practice, providers usually have a system for labelling the level or difficulty of the course. This level may be indicated either on the certificate or in the description of the course. However, the indicated level is often platform-specific and does not usually have a reference to established educational frameworks, such as a national qualifications framework (NQF).

For example, learning platform [Lynda.com](https://www.lynda.com) indicates the following levels of difficulty for each of the courses:

- Beginner
- Intermediate
- Advanced
- Appropriate for all

E-learning can also form a hierarchically structured sequence of courses, with increasing difficulty. For instance EdX offers individual courses that can be combined into series, units, certificates, and professional or MicroMaster programmes. Most courses have an assigned difficulty level, which can be introductory, intermediate, or advanced. A certain number of advanced courses are usually required for completion of a MicroMasters programme. Professional programmes usually require a combination of introductory and intermediate courses.

As MOOCs are developed for large numbers of participants with differing backgrounds, some of them may even provide opportunities for adaptive learning with participant tailored learning pathways and assessment. Thus, one MOOC or a series of MOOCs may encompass varying levels of difficulty.

#### Robustness of level description

Unlike formal awards, which are part of a common framework with easily identifiable outcomes and standardised level of rigor, online courses can be very different in terms of level. Identifying whether the level is appropriate for the specific recognition purpose may require additional research. Below we have identified descriptors related to the level of an e-learning course.

Level	Descriptors
0	Level unknown (e.g. the level is not indicated on the course certificate and cannot be discerned through the course description).
1	Little information about the level available (e.g. the level indicated on the course certificate is platform-specific).
2	Relevant information about the level available (e.g. the level is platform-specific, but additional information on prerequisite requirements, learning outcomes and further opportunities is available and allows for comparison with NQF level).
3	No doubt about the level (e.g. NQF level indicated on the course certificate and/or clear information about ECTS).

## Recommendations

In determining the level of the course outcomes you can consider the following options. Note that these bullets should not be taken individually as an appropriate level indicator. Instead assessment should be based on a holistic approach:

- If the e-learning certificate does not have a reference to an overarching framework, discern the level of the course using the following information:
  - Learning outcomes associated with the course;
  - Admission requirements (specific diploma) or sufficient preparation in specific subject areas. For example, some courses may require secondary education or undergraduate knowledge in a certain field;
  - Stated further opportunities. For example, some courses give access to study programmes, award of credit, advanced standing or accelerated completion of a programme. If a course awards a professional certificate that is accepted in the labour market, this may also be taken into consideration;
  - The level of difficulty of the course indicated by the provider. This level can be used to determine the interrelation of the courses offered in the same subject or series and to identify the general level of specialisation and course outcomes;
  - The name of the course. For example, some courses use the title master. Although this does not mean that the award should automatically be treated as a master level award (some course providers may be misusing the titles to recruit students), it could be considered as a level indicator.
- If the course bears quality assured academic credit, the level of the credit can be taken as a direct indicator of the level of the course.

### 4. Learning outcomes

To attract and inform potential students, online courses often provide clear information about the expected learning outcomes in the course description. However, on the course certificate learning outcomes are not always mentioned and online course descriptions may change over time or may disappear if the course is no longer available. This can make it difficult to find the necessary information.

Some course providers, like the Saylor Academy or [MITopencourseware](#), use unique course numbering systems, making it possible to quickly find the right course description. Online badges can also offer a solution: when you click on the badge, additional information on learning outcomes is sometimes included.

It is important to note that, whereas in formal higher education successful completion of a course and award of a qualification usually signify that the intended learning outcomes have been achieved, this may not always be the case when it comes to e-learning. Sometimes e-learning certificates are issued without any form of assessment. When evaluating e-learning certificates, learning outcomes should always be assessed in combination with other criteria, such as how study results are tested and the identification of the participant.

## Robustness of learning outcomes

Level	Descriptors
0	Learning outcomes unknown (e.g. learning outcomes are unavailable or not clearly defined).
1	Little information about learning outcomes available (e.g. learning outcomes are not mentioned on the course certificate. In cases where the certificate was awarded some time ago, it is not sure if the available online course description still fully matches the certificate at hand).
2	Relevant information about learning outcomes available (e.g. learning outcomes are not mentioned on the course certificate, but unique course numbering system makes it possible to quickly check the corresponding course description).
3	No doubt about the learning outcomes (e.g. learning outcomes mentioned on the course certificate or included in the badge).

## Recommendations

When the e-learning certificate provides no information on learning outcomes, the online course description may offer a solution. Make sure that the course description has not changed overtime and matches the certificate at hand. Make use of unique course codes, if available. Otherwise it may be possible to consult internet archives for appropriate descriptions.

### 5. Workload

Traditionally, the workload of MOOCs and other forms of stand-alone e-learning is not too demanding and allows for individualised self-pacing.

The workload can be expressed through:

- A time indication, which can refer to total duration (e.g. 20 hours or one week) or the number of hours per week (e.g. 7 hours per week for a total duration of 4 weeks);
- Academic credit (ECTS).

While the workload of an individual online course may be insufficient for recognition purposes, it can be part of a series of courses and/or can be combined to create larger pieces of learning. In this way individual courses can lead to specialisations, micro credentials, or even full degrees.

### Example: Online Data Science Specialization at Johns Hopkins University

A beginner level certificate in **Datascience** offered by Johns Hopkins University through Coursera consists of 10 courses. Each course can be taken individually and requires from 8 to 20 hours (depending on the course) to complete. According to the developers, the certificate itself should take about 8 months with the workload of approximately 5 hours per week.

Assuming that 1 ECTS equals 28 working hours, the total workload of the Data Science Specialization is comparable to 6 ECTS.

## Robustness of Workload

Level	Descriptors
0	Workload unclear (e.g. no indication of the workload available).
1	Insufficient workload (e.g. the workload is indicated on the certificate, but less than 1 ECTS and therefore insufficient for the purpose of recognition).
2	Substantial workload with relevant information (e.g. on the basis of the indicated number of working hours/week in the course description, the workload of the course can be compared to 4 ECTS).
3	Substantial workload, clearly indicated on the certificate (e.g. indication of 4 ECTS credit points on the course certificate).

## Recommendations

- Online courses are often designed for part-time flexible learning and can be completed in varying amounts of time. The assessment of an online course should be based on the nominal duration or workload required;
- Carefully balance the added value of an assessment against the time needed for an evaluation. If the workload of an online course is very small (e.g. less than 1 ECTS), you may decide not to take it into consideration;
- Consider whether the individual course is part of a series or if there are other completed courses with similar profiles that can be assessed jointly.

## 6. Testing

When assessing formal qualifications from accredited higher education, credential evaluators can assume that students have been examined to establish the level of achievement of learning outcomes. With stand-alone e-learning, testing is more problematic for three reasons: 1) testing is not always part of e-learning, for instance in case of a certificate of participation (see (2.) above); 2) the quality of examinations is not always clear; 3) the risk of fraud due to lack of supervision.

Currently, testing methodologies for e-learning differ greatly: from the traditional exam (both proctored online or on-site) to digital and continuous mapping of achievements. Mapping can be done automatically or through manual assessment, ranging from registering of the student's contribution and participation in discussions (e.g. "Building Modules in Moodle" by CARNet) to automatic control of the quality of work (e.g. automatic checking of syntax in "Data Structures and Algorithms" by University of Osnabrück<sup>13</sup>). Sometimes students are offered the option of taking on-site examinations in order to receive a verified course certificate (see 2. above). For instance online platform **Iiversity** has locations in different German cities where students can complete their exam. Higher education institutions that provide MOOCs may also offer the possibility for on-campus examination.

To make a recognition decision, the credential evaluator can document the presence of testing methods. No information or absence of testing and no or low level of interaction in testing may indicate weaker grounds for recognition. On the other hand, strong evidence of testing could be an indication both of the quality of the study programme and the learning outcomes achieved. This can strengthen the grounds for recognition. Equally, a combination

13) JRC Science for Policy report, 2016: Validation of non-formal MOOC-based learning - An Analysis of Assessment and Recognition Practices in Europe (OpenCred), p.53

of different testing methods aimed at different aspects of the learning outcomes is a sign of a more targeted testing regime, making the connection between intended and achieved learning outcomes more visible.

Finally e-learning makes it possible to 'unbundle' course development, teaching and examination. For instance: some higher education institutions make use of MOOCs to prepare students for enrollment. Whereas these MOOCs may be offered by other providers, the entrance examination is done by the higher education institution itself.

### Example: Unbundling at Athabasca University

Athabasca University "Challenge for Credit Examinations" allow students to demonstrate that they are proficient in the subject matter of a specific AU course without having to complete the course. After successfully completing a Challenge Exam, students obtain credits.

See: <http://registrar.athabascau.ca/challenge/>

### Robustness of testing<sup>14</sup>

Level	Descriptors
0	No interaction or no assessment (e.g. attendance, viewing, completion).
1	Self-assessment (e.g. answering quizzes) or peer assessment.
2	Final examination, e.g. on the basis of multiple choice questions.
3	Different types of formative and summative testing combined to assess the learning outcomes. Test results are clearly indicated on the course certificate.

### Recommendations

- Collect information about testing methods in the platform and look into the conditions under which testing is executed. Relevant variables to look at are:
  - Is information about testing available and transparent? E.g. do the test methods figure on final documents or in descriptions of the programme, or are they described on the web pages of the platform or programme?;
  - What type(s) of testing are used? Examples are: multiple choice, written text, oral examination, peer discussions, coding, portfolio, product(s) such as a web page, an illustration or a design;
  - Does the type of testing fit the stated learning outcomes?;
  - Does the type of testing fit the workload of the online course? Have different types of testing been used to reinforce the overall robustness of assessment. E.g. is testing done continuously?;
  - Are end-results clearly stated on the course certificate? E.g. pass/fail, grading scales, distribution of results;
  - Is testing combined with identification of the learner? (see 7. below);

14) JRC Science for Policy report, 2016: Validation of non-formal MOOC-based learning - An Analysis of Assessment and Recognition Practices in Europe (OpenCred), p.57

- If no test results are available or test results cannot be trusted, but the course has substantial volume and could be recognized for admission or exemption, higher education institutions may also decide to test the learning outcomes independently.

## 7. Identification

As with testing, identification of the participant becomes problematic only in the context of stand-alone e-learning. When assessing formal qualifications from accredited higher education, credential evaluators can assume that students have been identified while taking courses and sitting for exams. E-learning on the other hand, is more flexible as it allows students to take courses at their own place and in their own time. As a result, identification procedures have to be in place to establish the identity of the student and prevent cheating.

When assessing the identification procedure of the online course, the evaluator can look at ID requirements for registration, for participation in separate modules/course sessions and for examination.

For enrolment and participation in e-learning the following options for online identification are in use:

- Passport/Photo ID (the student has to identify him/herself with a passport or picture);
- key stroke ID (creating a biometric profile of students' unique typing pattern);
- Password (to register and enter the learning environment).

To ensure students have acquired the stated learning objectives, identification during (summative) tests is key. The above-mentioned methods of identification can be used. In addition, online proctoring offers the possibility to prevent fraud when testing e-learning. A number of companies worldwide offer online proctoring services. Screen capture and cameras are used to monitor the student while taking an online exam. The recordings can be viewed afterwards or can be watched live. Proctoring can also be partially automated, with software that detects possible fraud based on deviations. Since its introduction in 2016, the European privacy law (GDPR) is putting severe restrictions on collection and storage of personal data and images. In response companies are developing alternatives, for instance making it possible to collect images without linking these to other personal data. The identity check is done only when a student wants to be admitted for further study, by comparing the images collected during the test with the passport photo.

With ongoing technological and societal developments it is expected that online proctoring will further evolve in the future, eventually enhancing the quality and scalability of online testing. However, due to the rapidly changing market, it is still difficult to assess whether or not online proctoring is secure. In general, it can be said that it is easier to commit fraud with multiple choice exams than with an examination with open questions or with oral examinations<sup>15</sup>.

Evaluators can assess the ID requirements during the different phases of the study programme (registration, attendance, examination) and can assess whether the course provider ensures continuity of identification (e.g. identification at every login or at different stages), especially during summative tests. Little or no indication of ID requirements, as well as lack of continuity of identification, weaken the grounds for recognition. Strict and continuous ID requirements strengthen these grounds.

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15) Lex Sietses (SURFnet), 2016, Whitepaper online proctoring, p.6

## Robustness of identification

Level	Descriptors
0	No or self-declared identification (e.g. open accounts).
1	Documentation of identity (e.g. passport/photo ID, key stroke ID etc.).
2	Multi-faceted identification (e.g. more than one type of identification and recurring verification of ID).
3	Continuous and secure identification (e.g. verified digital signatures in combination with on campus examination or a proctored exam).

## Recommendation

Collect information about ID requirements in the platform. When looking into the requirements, the following points should be considered:

- How did identification take place;
- Is identification checked at each instance a summative test is taken, ideally multiple times during the test;
- Are different methods of identification used.

# How to use the criteria

In practice the above-mentioned seven criteria for the assessment of e-learning are interconnected. Any recognition decision will therefore be based on a careful consideration and balancing of the robustness of the quality, authenticity, level, learning outcomes, workload, testing and identification. In order to do so the traffic light model proves to be a useful tool (see figure i, page 14).

It is important to note that information on important aspects of e-learning is often scarce. Frequently, e-learning certificates do not comply with all seven criteria. Even if verification codes are available and can be checked online, thus guaranteeing the authenticity of the document, additional information on the content, learning outcomes and workload of the course may not be provided. Obviously this complicates making a recognition decision.

For recognition professionals it is important to accept this reality and develop adequate policies, for instance by prioritizing some of the seven criteria, knowing that others are not or only partially met. Thus, you may conclude that, whereas no information is available on the level (3.) and learning outcomes (4.) of a particular online course, the fact that recognized higher education institutions in your country grant access and/or exemptions on the basis of the course certificate (1.) is sufficient for recognition.

One final recommendation we would like to make is the importance of weighing the added value of an assessment against the time needed for an evaluation, since the amount of time available is usually limited. To give an example: e-learning certificates are often included in an application file in addition to a traditional qualification. If the formal qualification can be recognized for admission to a study programme, it may not be worth the effort to assess additional e-learning certificates. However, if the assessment of the formal qualification shows there are deficiencies, for instance because an important subject matter is missing from the curriculum, it may be advisable to determine if the e-learning certificates can make up for these deficiencies. It's also possible that exemptions from parts of the study programme can be granted, based on the e-learning (after admission).

# About the e-Valuate project

This Online Learning Information Tool is produced as part of the **Evaluating e-learning for academic recognition** project (e-Valuate), aiming to contribute to more effective policies for the recognition of online learning in the European Higher Education Area (EHEA). As of March 2018 an expert group has been formed to make an inventory of the latest developments in e-learning and to compose a practical tool to better inform professionals involved in academic recognition.

In addition to this practitioner's guide for recognition of e-learning, a position paper is available to inform e-learning providers about the needs and perspectives from academic recognition.

The e-Valuate consortium is composed of representatives from the ENIC-NARIC network: NARIC Denmark, NARIC Lithuania, NARIC Norway, NARIC Ireland UK NARIC and NARIC The Netherlands. Other partners involved are the Vice-President of the Lisbon Recognition Convention Committee, the European Consortium for Accreditation in higher education (ECA) and KIRON. A higher education resonance group has been formed to provide feedback on the practitioner's guide, including the following institutions: Delft University of Technology, Kaunas University of Technology, Nottingham Trent University, Smartlearning Denmark, University of Limerick and University of Rostock.

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