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of Vocational Training



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Validation and open educational resources (OER)

Thematic report for the 2016 update
of the European inventory on validation



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Europe 123, 570 01 Thessaloniki (Pylea), GREECE

PO Box 22427, 551 02 Thessaloniki, GREECE

Tel. +30 2310490111, Fax +30 2310490020

E-mail: info@cedefop.europa.eu

www.cedefop.europa.eu

Joachim James Calleja, *Director*

Micheline Scheys, *Chair of the Governing Board*



Foreword

There is an overwhelming consensus on the importance of making visible the knowledge, skills and competences gained through life and work experience. To value what they have learned, people should be able to demonstrate what they have learned in all settings in life and to use this in their career and for further education and training.

This is why validation of non-formal and informal learning can make an essential contribution to the EU ambition of achieving smart, sustainable and inclusive growth, as set by the Europe 2020 strategy. Its impact can be significant in better matching of skills and labour demand, promoting transferability of skills between companies and sectors and supporting mobility across the European labour market. It can also contribute to fighting social exclusion by providing a way for early school leavers, unemployed individuals and other groups at risk, particularly low-skilled adults, to improve their employability.

This is one of a series of four thematic reports prepared within the framework of the 2016 update to the European inventory on validation of non-formal and informal learning. The inventory, together with the European guidelines, is a major tool supporting the implementation of the 2012 recommendation on validation that calls on Member States to establish, by 2018, validation arrangements allowing individuals to identify, document, assess and certify their competences to obtain a qualification (or parts of it).

The thematic reports take a closer look at specific aspects that are particularly relevant for the development of validation arrangements in Europe. They have contributed to the development of the country report updates, which will be available at Cedefop's webpage at the end of 2016. The reports treat the following themes:

- (a) validation in the care and youth work sectors: this looks into how validation arrangements link to specific sectors of care and youth work;
- (b) monitoring validation: this provides an overview of the way the use of validation of non-formal and informal learning is recorded across Europe;
- (c) funding validation: this presents an overview of funding sources for validation of non-formal and informal learning and discusses associated issues such as sustainability and accessibility of validation arrangements;
- (d) validation and open educational resources (OER): this focuses on validation of learning acquired through OER, for instance through participation in massive open online courses.

The thematic reports are a source of information to support dialogue between the different stakeholders in developing and implementing validation in Europe. Our key objective is to assist Member States in thinking European but acting locally, so that more learners and workers provide new skills to support competitiveness.

Joachim James Calleja
Cedefop Director

Detlef Eckert
*Director for Skills, DG Employment,
Social Affairs and Inclusion*

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Introduction

1.1. Objectives of the report

This report was prepared in the context of the 2016 update of the inventory on validation of non-formal and informal learning (hereafter the inventory).

It focuses on the issue of validation of learning acquired through open educational resources (OER), for instance through participation in massive open online courses (MOOCs).

The main objectives of this report are to:

- (a) explore whether current validation arrangements and procedures are adapted to validation of non-formal learning acquired through the use of open educational resources;
- (b) present drivers and barriers regarding the validation of learning acquired through the use of OER.

1.2. Research method and process

This report is based on a review of available literature. The first objective of the review was to check the extent to which the development of OER had been acknowledged and considered in research on validation. Given that OER are a relatively new phenomenon, and that validation itself is still under development in many countries, it was expected that few mentions of OER in the validation context would be found. Therefore, the research team also examined literature on OER, to assess the extent to which elements of validation were being explicitly acknowledged in that literature.

The research team first looked for information related to OER and their validation in the previous updates of the inventory (2007, 2010 and 2014); they examined inventory reports, country reports and case studies. Country experts were asked to look for information about validation of web-based learning and OER in country reports from previous inventories. In many cases (15 countries), there is no information, since validation of learning outcomes from OER was not specifically covered by any of the previous inventories. The findings of this research are presented in the annex.

The initial review also included validation-related literature. The research team looked for information about OER, but also more broadly e-learning, digital learning and online learning in validation-related literature. Out of 171 references checked, nine contained information about these topics (a list of the documents reviewed is provided in the references list).

Following the initial literature review, the team reviewed cases in the inventory countries for additional targeted searches. In these cases, the team explored the extent to which the validation procedures and arrangements identified were adapted to validation of learning outcomes from OER. They initially carried out research online about whether and how validation of learning outcomes from OER could be requested, followed by contact with the relevant authorities (one informant contacted per country) to confirm findings.

The information gleaned from validation literature, together with the literature about the recognition of OER and also findings from research, was then analysed. The aim was to provide an overview of the state of play of recognition of OER in Europe, the need for ‘formal’ validation of learning outcomes from OER, and the need for specific procedures to do this.

1.3. Limitations

The main issue encountered in preparing this report is the general lack of data about validation of learning acquired through OER. Perhaps due to the novelty of the topic, it is also the case that not much research is available in peer-refereed outlets. However, the literature – in particular grey literature – covers well a range of questions on the recognition of OER; this is especially so in material published in the last couple of years. Most of what has been written concentrates on validation that entails the recognition of the learning acquired through OER by higher education institutions, especially MOOCs. Therefore, the report often draws on information derived from studies concerning higher education and the impact MOOCs are having on it.

In this context, validation questions are often addressed at institutional level (education and training institution in which the learner wants to pursue studies or organisations where learners seek employment). There is little information on how the validation of learning outcomes acquired through OER works in practice (in terms of its acceptance by education institutions and employers). This would require a large-scale survey (e.g. institution/faculty survey and employer survey) covering the situation in different European

countries. In the absence of this, we report on recent research that is likely to include European learners.

1.4. Structure of the report

The report first introduces OER in the context of validation and how validation may relate to the use of OER (Chapter 3). Chapter 4 presents the main types of validation of OER with a focus on assessment and certification. Chapter 5 provides an overview of validation practices in the area of OER and Chapter 6, presents the study conclusions and recommendations on further research.

OER in the context of validation

This section provides an overview of the use of OER in Europe and the use and awareness of the potential of OER as a source of non-formal education. It also examines the relationship between validation and OER.

2.1. ICT in education, OER and MOOCs

2.1.1. ICT in education in Europe

An important part of learning today is provided through or with the help of information and communication technologies (ICT). The use of ICT in education as a means to teach and learn – in formal, non-formal and informal settings – is growing fast and all EU countries have produced strategies to promote and support its application ⁽¹⁾. While recent data report that progress is still needed in the context of formal education, the use of ICT is significant and growing in informal and non-formal learning.

A recent survey of the use of ICT in schools concludes that ICT-supported learning in the formal context is the exception in Europe: ‘On average at EU level, students report undertaking ICT-based activities between several times a month and never or almost never. Digital resources such as exercise software, online tests and quizzes, data-logging tools, computer simulations, etc., are still very rarely used by students during lessons’ (European Schoolnet and University of Liège, 2013, p. 8).

However, ICT-supported learning takes place in the informal and non-formal context, out of school: ‘Students’ ICT-based activities related to learning at home are more frequent compared to ICT activities at school’. As the survey report concludes, this trend underlines, on top of the extent of informal or non-formal learning actually taking place out of school, ‘students’ interest in spontaneous self-directed learning’ (European Schoolnet and University of Liège, 2013, p. 8). ICT and non-formal/informal learning are, therefore, highly

⁽¹⁾ This was already the case for school education in the early 2010s, as reported in Eurydice’s *Key data on learning and innovation through ICT at school in Europe 2011* (European Commission, 2011).

connected, a connection enhanced by recent trends in ‘open education’.

ICT-supported non-formal learning also takes place in public settings, such as public libraries. As reported in the analysis of a cross-European survey to measure users’ perceptions of the benefits of ICT in public libraries (Quick et al., 2013), libraries play a major role in non-formal, and a part in informal learning. This is particularly true for disadvantaged learners, such as those aged 65 and over, those from rural areas, and the Roma and ethnic minorities. Access to ICT in public libraries may be a unique opportunity for such learners to access OER and benefit from the opportunities they offer.

2.1.2. A brief introduction to OER

The concept of OER emerged in the 2000s. In 2002, Unesco defined OER ⁽²⁾ as ‘technology-enabled, open provision of educational resources for consultation, use and adaptation by a community of users for non-commercial purposes’ ⁽³⁾. According to the definition of OER used by Unesco, it may include: full courses, course modules, syllabuses, lectures, homework assignments, quizzes, lab and classroom activities, pedagogical materials, games, simulations, and many more resources contained in digital media collections from around the world.

Open course ware and many (but not all) massive open online courses (MOOCs) are examples of OER ⁽⁴⁾. The use of OER has grown in the last 15 years, since the launch of MIT OpenCourseWare ⁽⁵⁾ in 2001, and particularly since 2010, with the launch of the first MOOC programmes and platforms. OER developed to propose more programmes and courses on more platforms, from more institutions, for more participants and with more learning options. This development includes the possibility to participate in ‘enhanced’ learning experiences, with the introduction of a ‘freemium’ – mix between ‘free’ and ‘premium’ – which means that the basic features of a service are free while there is a fee charged for more advanced features. In the context of MOOCs, for instance, access to the courses online is free, while mentoring or access to some sort of recognition is charged.

OER initially developed in the US. In Europe, OER projects have been initiated in many countries, with the Netherlands and the UK being recognised

⁽²⁾ For the definition used in the 2012 Council recommendation on validation see Section 2.1.4.

⁽³⁾ Unesco: Education news, 8 July 2002: *Unesco promotes new initiative for free educational resources on the internet*. http://www.unesco.org/education/news_en/080702_free_edu_ress.shtml [accessed 18.3.2016].

⁽⁴⁾ Open Education Group: *The review project*. <http://openedgroup.org/review> [accessed 7.4.2016].

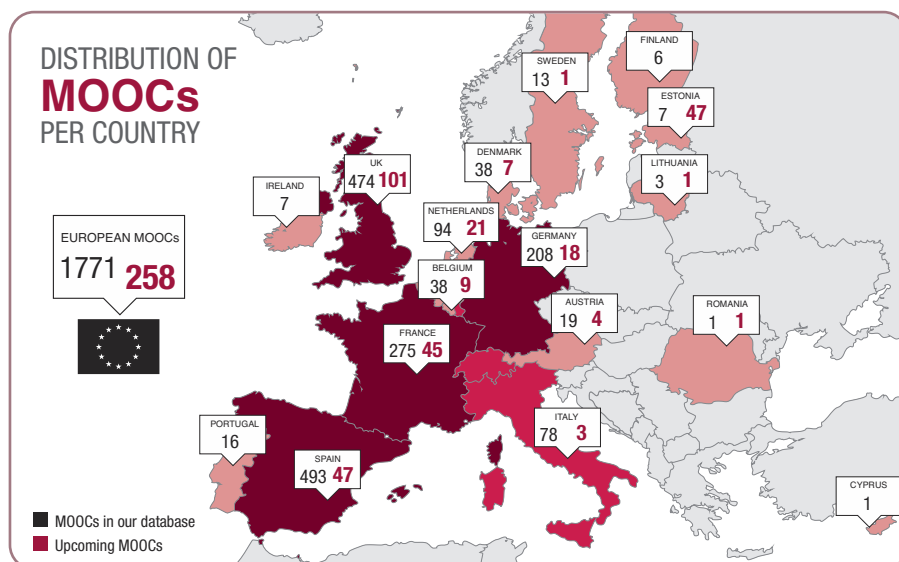
⁽⁵⁾ Massachusetts Institute of Technology: *MIT OpenCourseWare (OCW)*: <http://ocw.mit.edu/index.htm> [accessed 21.3.2016].

as the European pioneers in the field ⁽⁶⁾. The involvement of European higher education institutions in OER also developed significantly in recent times adopting the view that the ‘OER express’ is a train that Europe cannot afford to miss (Hysten, 2007).

2.1.3. OER development in Europe: institutional and individual perspectives

Many European universities have joined the main MOOC platforms and are now active MOOC providers. Figure 1 shows the distribution of MOOCs in Europe as of September 2015; their development has been particularly strong in Spain and the UK. However, there is no straightforward relationship between the size of the country and the number of MOOCs developed. In some large countries, such as Italy, development has been much more limited. This suggests that factors other than country size are important in explaining the development of MOOCs across European countries.

Figure 1. Distribution of MOOCs per country in Europe



Source: Open Education Europa: *the European MOOCs scoreboard* (last updated 1.9.2015): http://openeducationeuropa.eu/en/european_scoreboard_moocs [accessed 21.3.2016].

⁽⁶⁾ The EU supported many initiatives on the use of ICT in education, opening a path for the development of OER. These included projects under the research framework programmes, and the competitiveness and innovation framework programme; it also included education and training initiatives such as the e-learning programme and the lifelong learning programme.

Table 1. Where/how do Europeans think they can obtain skills outside formal education? (%)

	Work experience	Training at work or on the job	Self-education	Courses other than school, vocational education and training or university	Travelling, living or working abroad	Voluntary work or experience	Online courses which are not part of a formal education programme	Other (spontaneous)	None (spontaneous)	Do not know
EU-28	62	54	47	45	45	31	27	1	1	1
BE	72	71	53	43	44	32	30	1	1	0
BG	33	45	37	59	36	14	16	1	2	3
CZ	59	43	61	41	47	21	27	0	1	2
DK	77	65	57	49	67	45	33	2	1	0
DE	66	57	64	64	49	34	35	3	0	0
EE	68	60	71	47	52	33	32	1	0	1
IE	66	53	48	42	44	37	38	1	0	1
EL	61	48	42	50	31	23	28	2	1	0
ES	49	53	35	45	57	27	28	1	1	1
FR	64	59	37	28	52	34	15	1	1	1
HR	58	41	43	31	44	25	20	0	1	0
IT	60	50	24	30	39	13	10	1	2	1
CY	74	51	42	38	31	35	28	0	1	0
LV	63	47	64	54	38	24	24	0	1	1
LT	62	34	49	39	34	24	21	1	4	2
LU	67	35	54	39	50	41	31	1	1	1
HU	45	28	52	27	25	17	14	2	4	1
MT	67	57	38	49	38	42	37	2	0	2
NL	79	60	58	62	57	52	36	1	0	0
AT	65	61	55	63	61	36	31	1	0	0
PL	43	40	48	46	39	14	24	2	2	3
PT	63	57	18	33	26	33	13	1	1	3
RO	56	34	50	38	17	29	13	1	1	1
SI	58	55	62	51	43	32	29	2	0	0
SK	54	39	61	45	45	23	24	0	1	0
FI	73	53	75	35	57	35	27	2	1	0
SE	86	76	55	61	75	60	43	1	0	0
UK	72	67	51	50	40	48	47	1	0	1

Highest percentage per country

Lowest percentage per country

Highest percentage per item

Lowest percentage per item

(Multiple answers possible)

The emergence of OER and the fact the MOOCs are, according to some definitions ⁽⁷⁾, accessible online to a wide audience, open (no formal entry requirement beyond registration in most cases), and free of charge, creates new opportunities for many people to upgrade existing skills or develop new ones. However, not all courses labelled as MOOCs meet defined characteristics in practice and wide accessibility requires an appropriate ICT infrastructure.

The recent *Eurobarometer on skills and qualifications* (European Commission, 2014) asked respondents to report 'where or how' they thought they could acquire a range of skills (basic, job-specific, generic) outside formal education. Positive responses for 'online courses which are not part of formal education programmes' were lower than for other potential ways to acquire skills through non-formal learning (for instance training in work or on-the-job), but a significant proportion (27%) chose that option. The figure reached almost 50% in the UK, although it is below 20% in some East and South European countries. It is also possible that respondents may have associated open-course-ware and other ICT-based non-formal education initiatives with 'self-education' (an option selected by 47% of respondents), raising the issue of OER validation.

2.1.4. OER and validation in the EU policy agenda

OER has gained importance in the EU policy agenda, in particular with the 2013 communication on opening up education, which states that validation should address the challenges linked to the emergence of OER, to reflect better the learning landscape: 'validation and recognition instruments used in formal education must adapt to the emergence of a much more diversified educational offer, including new education providers and the new forms of learning made possible by technology. In parallel, new tools may need to be created both to ensure that technology-supported learning taking place outside formal education is validated and to encourage learners to become more engaged in open practices. These new tools should respect the principles set out in the *Council recommendation of 20 December 2012 on the validation of non-formal and informal learning* in synergy with established validation and recognition tools and contribute to the creation of a European Area for Skills and Qualifications, the latter aiming to address the diversity of practices across Member States and promote an effective recognition across borders' (European Commission, 2013b, p. 7).

(7) Definition based on the characteristics of MOOCs in Gaebel (2013).

OER also featured in validation of non-formal and informal learning. In the *Council recommendation of 20 December on the validation of non-formal and informal learning* (Council of the EU, 2012), OER are mentioned as one example of non-formal learning. OER are defined in the recommendation as ‘digitised materials offered freely and openly for educators, students and self-learners to use and reuse for teaching, learning and research; it includes learning content, software tools to develop, use and distribute content, and implementation resources such as open licences; OER also refers to accumulated digital assets that can be adjusted and which provide benefits without restricting the possibilities for others to enjoy them’ (Council of the EU, 2012, p. 5). This is in line with the Unesco definition. The 2012 recommendation also states that validation arrangements in Member States should cover, where applicable, knowledge, skills and competences acquired through OER.

2.2. The relationship between validation and OER

OER and its manifestations, such as MOOCs, bring challenges for validation, the first of which is its status as non-formal education. The 2012 Council recommendation on validation provides definitions: ‘(a) formal learning [as] learning which takes place in an organised and structured environment, specifically dedicated to learning, and typically leads to the award of a qualification, usually in the form of a certificate or a diploma; it includes systems of general education, initial vocational training and higher education’; ‘(b) non-formal learning [as] learning which takes place through planned activities (in terms of learning objectives, learning time) where some form of learning support is present (e.g. student-teacher relationships); it may cover programmes to impart work skills, adult literacy and basic education for early school leavers; very common cases of non-formal learning include in-company training, through which companies update and improve the skills of their workers such as ICT skills, structured online learning (e.g. by making use of open educational resources), and courses organised by civil society organisations for their members, their target group or the general public’ (Council of EU, 2012, p. 5).

While MOOCs are commonly defined as non-formal education, they are organised by educational institutions specifically dedicated to learning and can lead to the award of certifications. Although they rarely lead to full academic or vocational training qualifications, some providers – such as OERu

– aim to reach that stage in the near future (Souto-Otero et al., 2015). This raises questions as to what ‘qualification’, ‘organised and structured environment’ mean as distinctive elements of formal education. However, MOOCs may or may not impart work skills, and rarely provide adult literacy or education for early school leavers. It could be argued that the definition challenges raised reinforce the point of validation: rather than the establishment of stronger barriers between different types of learning, we see increasing difficulty in having clear boundaries.

A further question is how OER may be associated with validation. The table below outlines ways in which validation can be linked to OER.

Table 2. **Examples of links between OER and validation**

Identification	Lists of open resources and materials can make individuals aware of their knowledge, skills and competences, prevalent standards, their level of competence and gaps in their knowledge, skills and competences
Documentation	OER may support documentation of non-formal learning, by means of reference to course materials
Assessment	OER may be linked to various forms of assessment, from self to peer and institutional assessment
Certification	OER may lead to certification. This certification may entitle individuals to certain rights, for example it may have a labour market value or value in the education system (being valued for course entry, waiving of the requirements to complete parts of courses or the award of full qualifications)

Source: Cedefop.

OER are often underpinned by new pedagogies that tend to emphasise the role of the learner and its self-identification of, and reflection on, his or her own knowledge, skills and competences (Taylor and Mackintosh, 2011), which is part of the validation process.

Also, open education is becoming an increasingly important area for validation, and validation – in particular accreditation – is a critical element in increasing the use of OER.

Murphy and Witthaus results, based on a survey of 110 higher education institutions from around the world, confirm the association between recognition

of prior learning and the use of OER at institutional level: 'higher numbers of participants from institutions that use OERs indicated that their organisations had policies and procedures in place for recognition of prior learning' (Murphy and Witthaus, 2013, p. 8).

These stages of validation are not always present in the use of OER. One characteristic of OER is that there may be no credits awarded for the learning acquired through them ⁽⁸⁾, in contrast to 'formal education' distance-learning courses. In 2013, the Commission staff working document accompanying the communication *Opening up education* summarised the state of play of recognition of learning outcomes acquired through OER: 'Up to now it has been virtually impossible to acquire formal recognition for learning achieved by OER. This has to do with the authenticity and validity of students' performance outside a controlled environment and fraud prevention. There is therefore an enormous need to develop a method for evaluating and certifying open learning in an effective, efficient, and confidence-inspiring manner' (European Commission, 2013a, p. 27).

In the next section we review the current position reference the main types of the validation, in particular in relation to assessment and certification.

⁽⁸⁾ In the case of MOOCs, the non-award of credits is one of the characteristics of MOOCs given in some definitions: see the definition based on the characteristics of MOOCs in Gaebel (2013).

Assessment of OER-derived learning

3.1. Introduction

The Universities UK report on MOOCs (Universities UK, 2013) provides an overview of ‘recognition’ in the context of MOOCs. It underlines that formal recognition of MOOCs is becoming interesting to both policy-makers and the main MOOC platforms; the main reason, according to the authors, is the need for learners to use learning outcomes acquired through MOOCs in their academic and professional development. The report argues that recognition is likely to be at the centre of the business model of MOOCs in the future: while content may be made available for free to learners, there may be a charge associated with assessment or certification.

In recent years two trends have been observed: validation of OER (in particular MOOCs) through exams and tests, and the development of forms of recognition other than certificates, particularly ‘badges’ in the form of validated indicators of accomplishment, skill or achievement (Hickey, 2012).

Some researchers, such as Sanchez-Acosta et al. (2014) have argued, making use of experimental research, that there is a negative relationship between motivation through the use of badges or accreditation and the learning developed. Instead, they note the importance of intrinsic motivation in MOOCs. These results, however, are based on the experience of a single MOOC on software programming. Ahn et al. (2014) note that studies generally link the presence of badges and other incentive mechanisms to increased user participation in a variety of online communities, ranging from popular social question and answer sites to online tools used in the classroom.

Ho et al. (2015) note that surveys suggest that over half of MOOC participants intend to certify, and around a quarter of these eventually earn a certificate. Among those who were initially unsure or did not intend to earn a certificate, 8% ultimately did. Ho et al. also note subject differences, as certification rates in computer science and science, technology, engineering and mathematics courses tend to be around half of those in humanities- and social-science-related subjects. Certification, then, is an important aspect of OER, although its importance seems to vary by subject.

3.1.1. Assessment formality level

Witthaus, et al. (2015) provide a scale of formality for recognition of participation in OER.

Table 3. Levels of formality of the recognition of learning acquired through the use of OER

Level	Descriptors
0	No formal recognition
1	Unauthenticated completion certificate/statement of accomplishment or badge showing proof of participation or completion ^(a)
2	Authenticated certificate or badge which either (a) contains limited/no information on the nature of the course, the nature of the learner’s achievement and the nature of the assessment process used, or (b) indicates that the learner’s identity was verified online but there was no supervision during assessment (as is typical in Coursera MOOCs with Signature Track) ^(b)
3	Certificate providing exemption from a specified entrance exam
4	Certificate conferring between 1 and 4 ECTS credits
	Certificate conferring a minimum of 5 ECTS credits
	Certificate providing exemption from a specified module/course or part of qualification at the issuing institution
	Certificate from an accredited institution which ‘(a) formally and clearly states on whose authority it was issued, provides information on the content, level and study load, states that the holder has achieved the desired learning objectives, provides information on the testing methods employed and lists the credits obtained, according to a standard international system or in some other acceptable format, (b) is demonstrably and clearly based on authentication [i.e. student’s identity is verified] and (c) states that the examinations have been administered under supervision and specifies the nature of this supervision’ (NVAO 2014, p. 9)
	Continuing professional development credits

^(a) For example http://bluebox.ippt.pan.pl/~vkoval/vk_files/coursera/Game_Theory_II_130707.jpg [accessed 7.4.2016].

^(b) See for example sample certificate on Coursera’s website:

https://s3.amazonaws.com/coursera/specializations/jhudatascience/cert_icon.png [accessed 7.4.2016].

Source: Witthaus et al. (2015), p. 3.

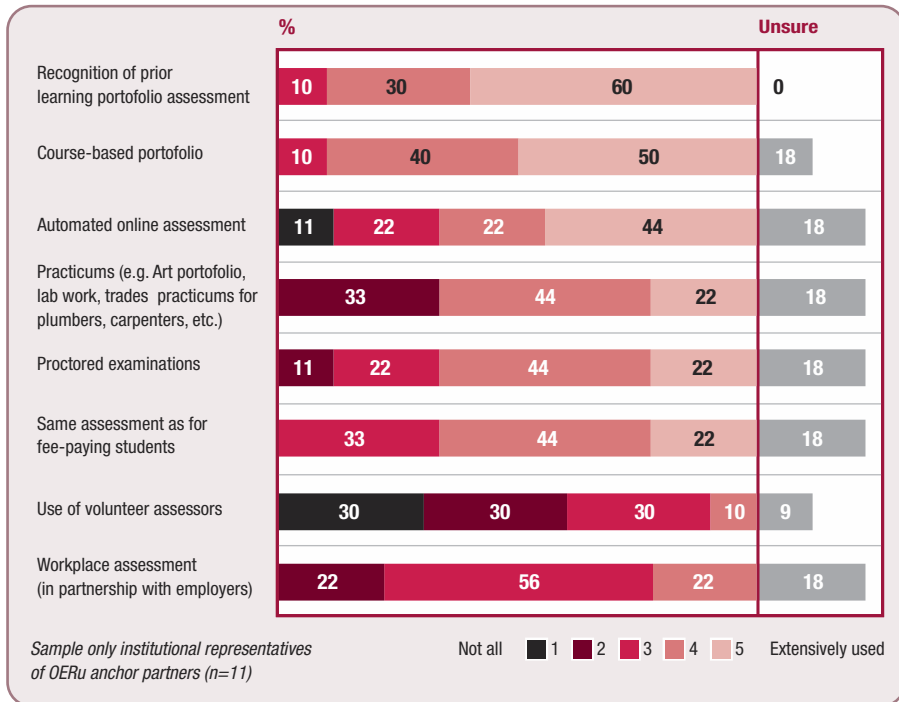
The authors provide several examples of these different levels. While most are institutional, they also include a national initiative, FUN MOOC: In France, the National Ministry of Education launched a national portal for MOOCs through the *France Université Numérique* (FUN) in October 2013. MOOCs offered via this portal are required to adhere to a set of quality standards and guidelines. The guidelines suggest that recognition should be given for attendance and participation, rather than for achievement of learning objectives, citing the difficulties involved in supervising online assessment. The perspective of FUN is that assessment in MOOCs can only be conducted through automation or peer assessment, and both have limitations: automation provides assessment of only superficial information, and the answers can also be easily disseminated amongst participants leading to high potential for cheating, while peer assessment is ‘a trade-off between workload imposed on participants and the precision of the evaluation’ (Cisel 2013, pp. 19-25). The use of badges is recommended, mainly as a way of encouraging participation. Badges can be awarded automatically for completing tasks and can act as a gradual record of completion. Cisel (2013, p. 28) concludes that badges ‘are mainly used today to encourage participants to interact on forums, but could have a growing importance in the process of reward for work done over the years.’ In fact, most of the MOOCs currently available on the FUN platform appear to offer unverified completion certificates – which have the same status as unverified badges. (Witthaus et al., 2015, pp. 4-5).

Yuan and Powell (2013) report that, given that most MOOC learners have higher education credentials, MOOC credits may be less important to them than evidence of participation in a learning activity. Ho et al. (2014) report, based on data from 1.7 million MOOC participants, that most have at least a bachelor degree, are employed full-time and come from developed countries. Few participants complete their courses, although given the large numbers of participants, the number of students completing is often still large.

3.1.2. Types of assessment method

Murphy and Witthaus (2013) found that the main types of assessment that would most likely be used by the higher education institutions surveyed, for assessment of the learning outcomes of courses based on OERs for formal accreditation, are portfolio assessment and course-based portfolios. Automated online assessments, for example quizzes, may also feature, though the authors see these as possibly less well-suited than the other methods to assessing higher order knowledge, skills and competences. Whether the methods would be different for OER delivered by the own institution and other institutions was not explored.

Figure 2. **Likely assessment methods to be used by institutions assessing learning outcomes of courses based on OER**



Sample only institutional representatives of OERu anchor partners (n=11).
Source: Murphy and Witthaus (2013).

Below we discuss certification in relation to entry, credit recognition, certification and softer methods of recognition.

3.2. Validation on course entry and credit recognition

Universities UK identified different forms of recognition of learning acquired through MOOCs:

- (a) recognition of prior learning: incorporating prior learning into the assessment of a prospective student’s application;
- (b) articulation and credit recognition: recognising previously completed education against the learning outcomes, process and assessment standards of the receiving course to count as credit toward an award;

- (c) licensing: integrating MOOCs or other high volume online learning courses provided by third parties into the core teaching programme of a structured course, leading to course credit and a higher education award;
- (d) reciprocal arrangements: sharing online courses across multiple providers, structured in various ways into the learning process and outcomes of programmes and higher education awards.

Of these forms, recognition of prior learning and articulation and credit recognition are linked to validation. The organisation in charge of validation of non-formal and informal learning at national level in the US, ACE CREDIT ⁽⁹⁾, has included MOOCs in its credit recognition programme CREDIT. Higher education institutions and employers in the country and beyond can use ACE CREDIT's recommendations to make their validation decisions. Recognition is limited to applications for further studies in higher education institutions that are members of the ACE CREDIT network (about 1 400 in the US).

Unlike the US, where the inclusion of MOOCs in the ACE CREDIT programme played a role in an emerging set of MOOC validation practices, there is no overarching framework for validating OER acquired learning outcomes in place in Europe. The decision to recognise a specific MOOC tends to take place on a case-by-case basis at institution/faculty level. In several countries ⁽¹⁰⁾, recognition would need to comply with the general validation process that applies to all forms of non-formal and informal learning, irrespective of whether they are OER or not.

There are indications that formal credit recognition for MOOCs is not a pressing issue, at least in the UK: 'Most learners using MOOCs are people who already have a degree. In this case, whether the course carries credit seems less important compared to whether they have evidence through certification that they have participated in a programme of learning and that they can present to employers as evidence of professional development' (Yuan and Powell, 2013, p. 12).

This tends to explain why softer (and more visible) forms of recognition have emerged in the context of MOOCs. Before we review those, we investigate certification issues.

⁽⁹⁾ ACE, American Council on Education; CREDIT, College Credit Recommendation Service.

⁽¹⁰⁾ Belgium (Wallonia and Flanders), Estonia, Finland, France, Greece, Iceland, Latvia, Lithuania, Luxembourg and the UK (England and Northern Ireland).

3.3. Certification

One of the main ways to validate the learning that takes place through MOOCs is through certification. There are different types of certification: verified and non-verified, some providing proof of attendance, others of learning.

Often, the certificates are issued by MOOC platforms or jointly by the MOOC platform and the provider, rather than by the education provider that delivers the course alone. This marks clear differences between the learning achieved through MOOCs and that of 'regular' and distance learning students: both the nature of the certificate and the organisation responsible for its issuing are different. Further, certificates are most often stand-alone items that are not understood as part of larger qualifications. The OpenCred (2014) report shows that most current accreditation is piecemeal (credits for specific courses rather than qualifications) and learners are still reliant on traditional methods of delivery to obtain full qualifications.

While some institutions in Europe may offer formal accreditation in terms of the European credit transfer and accumulation system (ECTS) for MOOC participation, the accumulation of ECTS does not entail the award of a degree. Degree-awarding institutions must still accept the transfer of these credits towards a degree, and there is often a limit placed on the number of credits that can be transferred; there are still no options to obtain a degree through MOOC study alone in European institutions (Souto-Otero et al., 2015).

One way to evidence the achievement of learning outcomes through OER is to have tests/exams after the completion of a course, as is often the case in traditional education and training settings. One of the main issues for providers is how to make sure that the person who takes/passes the test is the one who took the online course and will use the evidence of learning outcomes for further studies and/or professional development?

Some MOOC providers have followed the approach taken by many distance and online learning providers: while the greatest part of the learning is done online, there is a 'face-to-face' dimension in the test. An example is where the exams take place at an examination centre, which may or may not be at the premises of the institution providing the course. Verstelle et al. (2014) recommend distinguishing between the degree of robustness of the assessment and the degree to which the student's identity is validated and supervision is provided to determine the value of certificates. Options include no validation of identity, online validation by facial recognition or keystroke tracking, online monitoring that requires a moderator to have a 360-degree view of the students' room transmitted via a webcam, and attendance at an

examination site. In a report published by the Norwegian Ministry of Education, Kjeldstad et al. (2014), suggest that for awarding formal academic credit, proof of learning will need to be demonstrated by an examination that takes due consideration of the need to ensure the identity of the learner.

In the case of MOOCs, while participation can often lead to a ‘standard completion certificate’, some platforms have contracted commercial examination providers to make MOOC learners sit exams in their examination centres. Passing the test leads to a completion ‘verified’ certificate. The main difference with the ‘standard’ completion certificate is that the verified certificate allows verification of the identity of the participant. In most cases the certificate comes from the platform, not the institution that provided the course.

In 2013, Coursera launched a verified certificate system that considers the typing pattern of the students to link them to their ID and deliver a nominative course completion certificate. EdX also chose this option and now uses verified certificates. One limitation of this system is that it shows who typed the exam, not necessarily who is the brain behind the hands ⁽¹¹⁾. More than half of the courses offered on Coursera are eligible for this type of certificate ⁽¹²⁾. The certificate is jointly delivered by the institution and the platform.

The inclusion of a reference to the platform (with or without the institution providing the course) in the certificate may be important when considering certificate use and value to the holder. One of the objectives of participation in MOOCs is to use the certificate to evidence the learning outcomes in the context of further studies and/or professional development, as noted by the main MOOC platforms: ‘Course certificates can enhance anyone’s lifelong education. Use your course certificate to help you to find a better job, gain valuable credentials, or build on what you already know. Many students list their accomplishment on their résumés/CVs and include it on social media/career profile profiles’ ⁽¹³⁾. ‘Sometimes you need to complete a course to get a better job, or a promotion, or to include it in a college application. [...] Employers and schools sometimes want proof of what you have achieved in an online course; a Verified Certificate of Achievement provides that proof’ ⁽¹⁴⁾.

⁽¹¹⁾ Read more on this question in Anderson (2013).

⁽¹²⁾ At the time this report was drafted, more than half of the courses on Coursera were eligible for certificates.

⁽¹³⁾ Coursera: earn a course certificate: frequently asked question: *What is a course certificate? How can I use it?* <https://www.coursera.org/signature/> [accessed 22.3.2016].

⁽¹⁴⁾ EdX: verified certificates: frequently asked questions. <https://www.edx.org/verified-certificate> [accessed November 2015].

While participation in open course itself remains free of charge, the process of registering for the exam, taking it and receiving the certificate can cost students about EUR 85 (Anderson, 2013). The ‘currency’ of these certificates should be assessed from the point of view of learners; evidence of this appears still limited for Europe.

The OpenCred (2014) report suggests that providing robust assessment in open contexts is very challenging and may affect the value of certificates obtained through the use of OER. This is despite the increasing role of ICT in assessment practices, such as e-assessment through peer-assessment and portfolio-based assessment (Redecker, 2013), or formative assessment through the use of learning analytics in digital contexts (Souto-Otero and Beneito-Montagut, 2016).

The OpenCred (2014) report suggests that it is also the case that the most robust forms of assessment are not very common in formal distance learning programmes, which often require students to submit assignments without checking their authorship. This does not preclude institutions from providing full formal qualifications to those students. This is also often the case with residential programmes, suggesting that the reluctance to award formal education qualifications based on use of OER is not exclusively related to assessment issues, but is also linked to the containment of competition with full fee-paying courses. Bacsich et al. argue that ‘Enthusiasts for challenge exams may forget that in many school and university systems the use of coursework for assessment is routine – and may also forget the many justifications for coursework (increasing predictability of grades, reducing exam stress, suiting some people’s learning styles, etc.) while dwelling overmuch on the problems (collusion, cheating, help by parents or friends, etc.)’ (Bacsich et al., 2015, p. 33).

Witthaus et al. (2015) provide a range of criteria to judge the robustness of assessment in open education contexts, differentiating between five levels. They also provide some illustrative examples for these different levels. Future research could explore the extent to which the most robust assessment practices are used in validation of learning acquired through OER.

Table 4. **Robustness of assessment**

Level	Descriptors
0	No assessment
1	Record of completion of activities
	Self-assessment
	Assessment with automated checking, e.g. multiple-choice questions (MCQs), submission of programming code, or acceptance of a submission of text on the basis of word count (no verification of identity)
2	Online examination with verified identity and no real-time supervision, e.g. Coursera's Signature Track ^(a) or Accredible's ^(b) 'self-proctoring' (in which a recording is made of the student's screen and face while examination is in progress, and is compressed into a two-minute time-lapse video, embedded in certificate)
3	Submission of coursework and/or performance of practical tasks where the student is personally known to the examiner. (The context may be either face-to-face or online. The assumption is that inconsistencies in performance style will be picked up and this minimises the likelihood of cheating. This is common practice in traditional online courses, e.g. online MBA programmes.)
	Online examination with identity verification and real-time proctoring (e.g. ProctorU ^(c) , Proctor2Me ^(d) or Remote Proctor ^(e) , which has a panel of proctors check individual examination recordings)
4	On-site examination (including on-site challenge exams)
	Recognition of prior learning (RPL) conducted by recognised experts) (e.g. based on portfolio submission and/or interview – requires a relatively low candidate-to-assessor ratio and hence generally not scalable to open initiatives)

(a) Coursera: *earn a course certificate*. <https://www.coursera.org/signature/> [accessed 8.4.2016].

(b) Accredible: *Painless certificate issuing and management*. <https://accredible.com/> [accessed 7.4.2016].

(c) ProctorU. <http://www.proctoru.com> [accessed 7.4.2016].

(d) Proctor2me: *welcome to Proctor2me*. <http://proctor2me.w3-media.net/>

(e) Software Secure: *RPnow*. <http://www.softwaresecure.com/product/remote-proctor-now/> [accessed 7.4.2016].

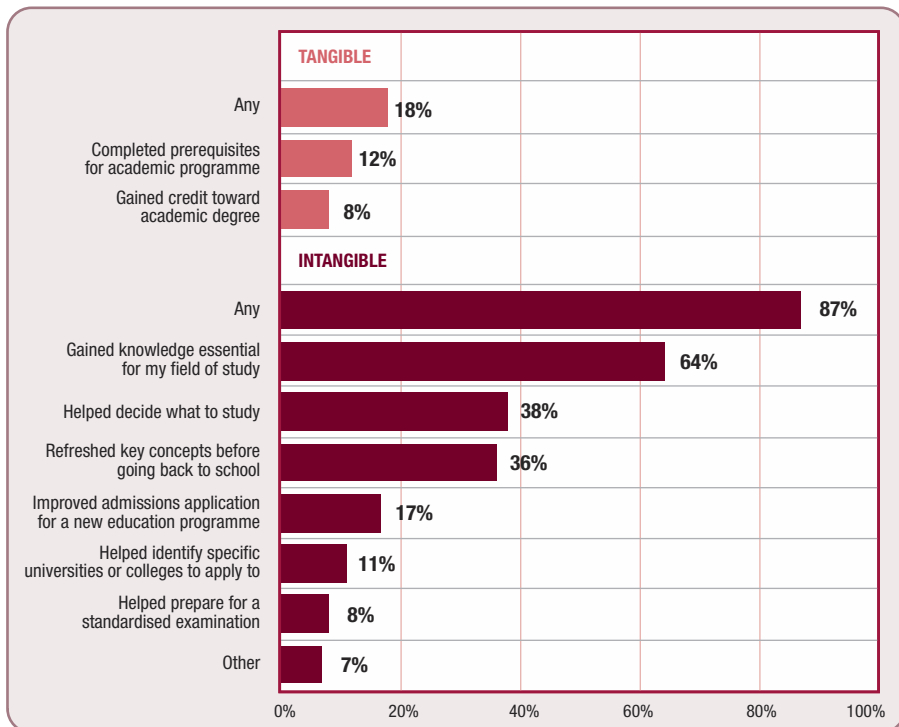
Source: Witthaus et al. (2015, p. 4).

3.4. The scale of validation

Zhenghao et al. (2015) research suggests that among learners who complete courses, MOOCs have an impact in terms of certification and admissions into education programmes. This research received approximately 52 000 responses from ‘212 countries and territories’ all of whom had completed a Coursera MOOC prior to 1 September 2014. Overall 61% of respondents reported educational benefits.

Of those respondents who were ‘education seekers’ – those who enrolled in a MOOC primarily to achieve academic goals, which made up for 28% of the sample – 88% report educational benefit of some kind, and 18% a tangible educational benefit including gaining credit towards academic degree. Some 17% reported improved admissions application for a new education programme.

Figure 3. Educational benefits of MOOCs



Source: Zhenghao et al. (2015).

People from non-OECD countries (36% versus 24%) and the bottom 30% in terms of their socioeconomic status (37% versus 22% from the top 30%) were more likely to be education-seekers. Approximately half (47%) of education seekers were students in a traditional academic setting – 94% of which reported some educational benefit – but many others were not. Among the education seekers who were not in a traditional academic setting, disadvantaged populations are more likely to report educational benefits. ‘Education seekers from developing countries were more likely to report educational benefits; those with low socioeconomic status were more likely to report benefits than those with higher status; and those without a postgraduate degree were more likely to report benefits than those with one (...) Eighty-seven percent of non-student education seekers from non-OECD countries report educational benefits compared to 80% from OECD countries; 91% with low socioeconomic status report educational benefits, compared to 86% with high socioeconomic status; and 92% without a post-secondary degree report educational benefits, compared to 86% with a post-secondary degree’ (Zhenghao et al., 2015). This report suggests a positive picture of validation of non-formal learning acquired through MOOCs on education progression, in particular for disadvantaged groups.

3.5. OER ‘soft’ recognition arrangements

In parallel with recognition through certificates, ‘soft recognition tools’ have been developed to allow participants to show that they completed a course. Muñoz et al. (2013) establish recognition and accreditation as a key challenge in ‘opening up education’ in Europe by 2030, and argue that formal recognition should occur in coexistence with peer-based current forms or peer-based and non-accredited recognition (Muñoz et al., 2013). Sanchez-Acosta et al. (2014) also conclude that parallel systems of recognition are required. In their analysis, formal accreditation may be required for participation, but peer-based recognition that holds meaning in particular communities is necessary for intrinsic motivation to learn.

This is the case with ‘badges’. The Badge Alliance⁽¹⁵⁾ defined a badge as a ‘symbol or indicator of an accomplishment, skill, quality, or interest’. An Educause brief by Mozilla’s Casilli and Knight described digital badges as:

⁽¹⁵⁾ A network of organisations and individuals promoting the use of badges in the context of open education. Badge Alliance: *about the Badge Alliance*: <http://www.badgealliance.org/about/> [accessed 22.3.2016].

‘Digital tokens that appear as icons or logos on a web page or other online venue which are awarded by institutions, organisations, groups, or individuals, to signify accomplishments such as completion of a project, mastery of a skill, or marks of experience’ (Casilli and Knight, 2012).

Badges have been used in many contexts (such as scouts) as a way to recognise achievement. In the context of OER, badges are digital patches that can be used to evidence learning outcomes, in a softer way than credits or certificates do. Badges can be used to provide evidence of completion of a MOOC on social media ⁽¹⁶⁾. Badges would make it easier to check the authenticity of the credential than a traditional certificate (Glover and Latif, 2013) ⁽¹⁷⁾, but not of the authenticity of identity of the learner.

Mozilla’s open badges infrastructure (OBI) lets programmes create and issue badges that detail the particular accomplishment being highlighted; it also links to additional information and evidence. Ahn et al. (2014) refer to Peer 2 Peer University (P2PU), an open education community where any member can create and participate in courses (Ahn et al., 2013a; 2013b) which has implemented an open badging system to allow any member to create learning badges as a way to promote learning in the community. These credentials are then tied to the broader Mozilla open badges framework (<http://openbadges.org/>) that includes a growing number of organisations designing and issuing badges across different contexts.

Ahn et al. (2014) also note that in the literature badges are seen as:

- (a) a tool to motivate learners, through ‘gamification’ or the use of game elements such as scores, levels of points in non-game contexts to motivate ‘players’;
- (b) a pedagogical tool, to visualise learning paths of content and activities, a roadmap that indicates desired courses of action through careful sequencing; or to incentivise participation in certain activities such as peer-evaluation (Kriplean et al., 2008);
- (c) a credential or signifier.

The advantages of badges as credentials may include the provision of more nuanced information on skills and competences than full qualifications (MacArthur Foundation, 2013). Badges may also enable individuals to present their skills and competences in a more flexible and targeted way than qualifications allow, while providing greater visibility and recognition of skills

⁽¹⁶⁾ Mozilla open badges website illustrates how badges can be used on social media: <http://openbadges.org/display/> [accessed 22.3.2016].

⁽¹⁷⁾ ‘This verification process means that an Open Badge can offer more credibility than, for example, a paper certificate because it can easily be checked for authenticity’ (Glover and Latif, 2013). This article provides a very good description of what a badge looks like.

and competences acquired in other contexts than formal education.

The recognition issues discussed for certificates also apply for badges: their relevance and attractiveness depends on what the learner wants to do with them. A recent review of current discussion about open badges (Ramsden, 2015) emphasised their relevance for learners, but their acceptance by stakeholders such as employers and professional bodies is still open to question. One of the publications covered by this review explores how badges in the UK context may influence employability (Glover and Latif, 2013): 'while our investigation suggested that a major use of open badges in higher education would be in creating a portfolio of achievements that could be used by the individual and shared with their tutors, the most important proposed use was for students to share their portfolios, either in full or in part, with prospective employers. [...] however, this relies on employers viewing the badges as credible indicators of knowledge and development.'

Glover (2013, p. 3) goes further: 'the main barrier to wide adoption of open badges is that they may not appear credible to third-parties, such as employers and professional bodies. [...] The key to widespread acceptance and recognition will be the use of open badges by major organisations and professional bodies [...]. Ultimately, open badges will succeed or fail based on how desirable learners and employers find the badges being issued. A motivating effect on learners will be obtained if the badges are suitably desirable and attainable, yet challenging; similarly, employers will find badges desirable if they can provide greater insight into the skills of their applicants. The criteria used for issuing a badge will have a significant impact on this desirability and it is vital that a planned approach is taken from the outset'.

If there is lack of structure to combine badges into a common accreditation framework, this may limit their potential use.

This issue once again calls for further research on the value of badges within the education sector and the labour market. In this context, the notions of content 'validity' of skills assessment give way to notions of credibility and social validity.

Endorsements are another type of soft recognition that may result from participation in open education.

Previous sections have noted that the value of validation of learning outcomes achieved through the use of OER is yet to be fully explored (OERTest Consortium, 2012). It is also important to assess the extent to which current validation practices in Europe are well-suited to the validation of learning outcomes acquired through OER, or whether additional arrangements should be introduced. This is examined in the next Chapter.

Validation for OER-derived learning

4.1. Introduction

This section gives an overview of the suitability of current validation arrangements for learning derived from using OER, and a summary of available information on the value of OER-related learning in the labour market. Validation of learning acquired through OER is a relatively new topic and it is the first time that this theme has been a specific focus of a European inventory thematic report. This issue does not yet seem to have become a central area of interest among those authorities working in validation.

National validation experts consulted about validation aspects of OER ⁽¹⁸⁾ reported that the use of OER is still in early stages in their countries: this was reported in Bulgaria, Germany, Croatia, Hungary, Lithuania and Slovakia. This supports an assessment for other parts of the world. For example Kocdar and Aydin's (2012) brief review of practices – mainly outside of Europe – concludes that the accreditation of open education is very much in its infancy.

Even in countries where OER is considered more developed (such as France and the UK) no specific validation arrangements were reported for learning outcomes acquired through OER. Formal and (novel or enhanced) softer recognition tools, along with existing validation arrangements, are sometimes combined to validate learning derived from the use of OER.

The relative absence of specific validation arrangements could be interpreted in three ways:

- (a) there is no need for specific arrangements:
 - (i) the need has not arisen yet, meaning that there is little demand for the validation of learning derived from the use of OER;
 - (ii) the systems in place are already adapted to OER and there is no need to develop validation systems anticipating a surge in the use of OER; this would be the case in at least 12 countries ⁽¹⁹⁾;

⁽¹⁸⁾ Country researchers in charge of the country reports for the 2016 inventory.

⁽¹⁹⁾ Belgium (Wallonia and Flanders), Estonia, Finland, France, Greece, Iceland, Latvia, Lithuania, Luxembourg and the UK (England and Northern Ireland).

- (b) there is or could be a need for specific arrangements, but there are obstacles to the development of specific validation arrangements and procedures for OER, such as issues linked to the identification of the learner, which may make validation more complicated than for other forms of learning.

There appear to be no data about the number of applications for certification of learning derived from the use of OER, or about other requests which concern the validation of learning acquired through OER, neither at EU level nor at country level. This is an important deficiency. Data would be valuable in estimating the scale of use of validation specifically in this context, and enable comparison with requests derived from learning in other settings. However, OER can be used to acquire knowledge validated by institutions other than those involved in the production or delivery of OER. Validation of learning derived from the use of OER will always be greater than validation of that learning undertaken by institutions involved in OER.

4.2. Standard arrangements: national level

Experts responding to the question about requests for validation of learning acquired through the use of OER, reported that, in their countries, such requests are directed to ‘traditional’ validation paths, which are seen to have been adapted for the validation of learning outcomes from OER ⁽²⁰⁾. This is the case in Belgium (Wallonia and Flanders), Estonia, Finland, France, Greece, Iceland, Latvia, Lithuania, Luxembourg and the UK (England and Northern Ireland). For instance:

- (a) in Estonia, specifically for higher education, general validation principles apply regardless of where learning took place;
- (b) in Finland, in the competence-based qualification system (*Näyttötutkinto*), which is the most established form of validation in Finland, competence-based qualifications can be awarded regardless of how and where competences and knowledge have been acquired;
- (c) validation of OER follows the traditional validation path in Iceland, Latvia and Lithuania;
- (d) in Luxembourg, it can be assumed that the validation of learning outcomes from OER would follow the traditional validation path;

⁽²⁰⁾ Validation experts at country level and reviews of previous updates of the inventory.

(e) in all UK countries, it is also expected that the same principles apply to OER as other forms of learning.

In most cases, lack of clarity makes it very difficult for learners to understand whether learning acquired through OER would fall under general validation arrangements in the country. This is the case in Scotland with the way the Scottish credit and qualifications framework defines types of learning – non-formal and formal – which could be recognised. The definition of formal learning explicitly includes online learning; OER are neither mentioned in the definition of non-formal learning nor listed among the examples provided. This again shows the dilemmas in some contexts regarding the character of OER as non-formal learning.

4.3. Standard arrangements: project work

The 2014 country report for Ireland provides a good example of validation of OER at project level. The National Adult Literacy Agency's distance learning tool Write On ⁽²¹⁾ is an interactive website, developed with the support of the European Social Fund. The tool enables individuals to improve their basic skills online (literacy, numeracy, IT and interpersonal). It can be used to provide national certification (awards) – certifications at NQF levels 2 and 3 – and also enables individuals to gain an award through their recognised prior learning. If a learner has demonstrated that he/she already meets the standards for a component certificate, the learner is directed to a second or summative assessment process, the results of which are used for certification. Additional summative assessment requirements must also be completed to add to the e-portfolio. The process is subject to quality assurance, including verification and authentication.

As in other areas of validation, project-based work can face issues of sustainability and be difficult to scale-up and transfer to other settings.

4.4. Standard arrangements: institutional level

Some education institutions treat learning derived from the use of OER as any other types of learning in their standard validation procedures, with little or no

⁽²¹⁾ *Write On*: helping you improve your reading, writing and number skills:
<http://www.writeon.ie/nala/student/index.jsp?2015> [accessed 28.3.2016].

modification. One example of explicit recognition of OER (MOOCs in particular) is the Department of Computer Science at the University of Helsinki, which explicitly allows students to get OER-derived learning recognised ⁽²²⁾: ‘In some cases, it is possible to negotiate formal transfer of study credit if you have passed a high-quality MOOC.’

Limitations in practice are in the ‘case-by-case’ approach that is often the rule in validation, with the ultimate decision being made by individual professors, and their assessment of what can be considered a ‘high-quality’ MOOC ⁽²³⁾ that covers the specified curriculum.

Validation of learning outcomes from MOOCs, it is the same as for other forms of non-formal and informal learning: the Department of Science of the University of Helsinki reported that they were revising their guidelines for recognition of prior learning so MOOCs could be better included. However, the objective is not to design specific arrangements for recognition of MOOCs but to raise professors’ and students’ awareness about the opportunity to have learning outcomes from MOOCs recognised.

4.5. Problems in using generic arrangements

There are countries in which validation procedures do not appear to be adapted to the validation of learning outcomes from OER. This is so in France with the validation (*validation des acquis de l’expérience*, hereafter VAE). It is not possible to apply for VAE solely on the basis of learning outcomes from OER. As indicated on its official website ⁽²⁴⁾, VAE focuses on validation of learning outcomes from professional experience, including volunteer work; relevant experience of at least three years is required to apply. This issue is not limited to validation of learning outcomes from OER, but to all outcomes acquired through learning not linked to professional experience. In practice, however, the details of the VAE procedure vary across institutions and qualifications, especially at higher education level where each institution is

⁽²²⁾ University of Helsinki, Faculty of Science, Department of Computer Science: *Studies in massive open online courses provided by other universities*.

<http://www.cs.helsinki.fi/en/node/68231> [accessed 28.3.2016].

⁽²³⁾ In November 2015, the web page mentioned only Stanford University’s MOOCs as ‘high-quality’, without specifying the quality criteria applied.

⁽²⁴⁾ République Française, Ministère du travail [French Republic, Ministry of Labour]: *VAE, le portail de la validation des acquis de l’expérience [VAE, the portal of the accreditation of prior experience]*: <http://www.vae.gouv.fr/> [accessed 28.3.2016].

responsible for developing their own VAE methods and standards. Therefore in some higher education institutions, the jury may consider learning outcomes from different forms of non-formal and informal learning (including OER) documented by the candidate in his/her portfolio.

Camilleri and Tannhäuser (2013) argue that recognition of OER-derived learning cannot become another manifestation of recognition of prior non-formal learning because it requires a shift in mind-set: from a model where teaching, assessment and provision of credentials has been ‘bundled’ together to one in which ‘unbundling’ in the provision of these services takes place. This may be in conflict with the requirements laid down by national quality assurance bodies.

More generally, McGreal et al. (2014) note a reluctance to accredit learning based on OER because of concerns about quality. Yuan and Powell (2013, p. 12) note that ‘some MOOCs rely heavily on peer engagement and assessment to support the individual student’s learning process. Coursera, for example, includes submission of essay style answers, graded through peer assessment, to balance the scale with the available resource. Some concerns are expressed around cheating and plagiarism with online learning, particularly where courses are eligible for academic credits’. Bacsich et al. (2015, p. 43) notes that quality assurance agencies, such as ENQA for higher education, need to develop their understanding of new modes of learning (including OER-based learning) to ensure that there is no non-evidence-based bias against them. They also argue that Member States should more strongly encourage higher education and vocational education and training providers to improve their activities and procedures on accreditation of prior learning. This suggestion explicitly calls for accreditation of prior learning to be made more procedural.

4.6. Specific arrangements

Specific current OER arrangements tend to be found within those institutions supporting OER. Relevant tools can include those outlined in Chapter 3, for instance, badges. While badges have been used in other contexts, digital badges are now a popular way to validate learning acquired through OER.

Specific arrangements for the validation of OER are currently implemented at different levels and by different types of institution including:

- (a) education institution level;
- (b) OER platforms;
- (c) OER networks of education institutions.

While various types of validation by institutions and platforms were discussed in Chapter 3, the case of networks is less well known. The OERu (OER Universitas) is an example of a network of higher education institutions working together in open education (Souto-Otero et al., 2015). The OERu makes learning materials available online (without requiring a password). OERu offers individual open courses. If a student takes an OERu course, the credit achieved could be transferred to and recognised by other higher education institutes in the network. Many OERu partners have adopted recognition of prior learning protocols, although this tends to be done on a case-by-case basis, and also recognition of credit transfer systems. However, only one student has achieved credit through the OERu, and not in Europe: the student concerned received a credit for a University of Southern Queensland course recognised by Thompson Rivers University in March 2014.

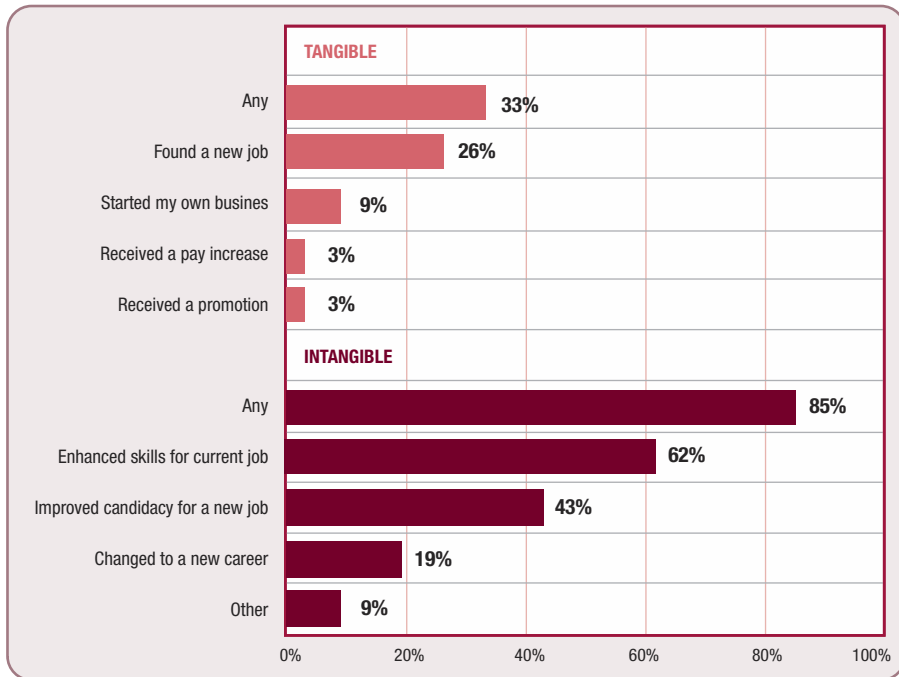
A full undergraduate (bachelor of general studies) programme is the agreed focus for the first credential to be offered by the OERu. Interviewees reported that the current priority for OERu is to complete the development of a 'first year general education component' as the foundation for this multidisciplinary degree, with potential exit points including a certificate and a diploma in general studies. OERu are also preparing postgraduate programmes that could be taken fully at the OERu. These will be examples of open curriculum, based exclusively on OER. The extent to which this should be considered non-formal learning could be open to debate.

4.7. Labour market recognition

There are no specific large-scale studies looking at the value of OER-related learning in the labour market in Europe, or for different forms of certification/recognition of OER-related learning. There is, however, a recent study looking at the value of OER-related learning in the labour market globally. This research (Zhenghao et al., 2015) suggests that, among learners who complete courses, MOOCs have a real impact in labour market terms. Of the Coursera participants surveyed, 72% reported career benefits.

Of the respondents who reported to be career builders (those who stated career benefits as their primary reason for completing a MOOC, who were 52% of the sample), 87% report a career benefit of some kind.

Figure 4. Career benefits of MOOCs



NB: As reported by those who stated career benefits as their primary reason for completing a MOOC.
Source: Coursera survey data in Zhenghao et al. (2015).

Zhenghao et al. (2015) report that ‘among all career builders, we find that general career benefits (both tangible and intangible) are more likely to be reported by people with higher socioeconomic status and higher levels of education. The story is different, however, when you look at tangible career benefits specifically (...) Career builders from non-OECD countries are more likely to report tangible career benefits (36% vs 32%). Of career builders from OECD countries, we see no statistically significant difference in tangible career benefit between the top and bottom 30% by socioeconomic status (34% vs 32%). Strikingly, among career builders from non-OECD countries, learners with low socioeconomic status are actually more likely to report tangible career benefit (39% vs 35%). Furthermore, career builders with lower levels of education were also more likely to report tangible career benefits (33% for learners with a college degree or higher vs 38% for learners with no post-secondary degree)’.

Conclusions and recommendations

Validation of learning acquired through the use of OER is a relatively new phenomenon that has gained in importance and popularity only recently and particularly in higher education. OER, especially in manifestations such as MOOCs, challenge traditional definitions and divisions between formal and non-formal learning. This is likely to be more so in the future, as (formal) education institutions continue both to be providers of OER and to develop the ways in which these experiences are incorporated into regular curricula in a more or less explicit way.

OER create flexible learning opportunities, which can potentially lead learners to enter higher education, progress within higher education, get a job or progress in their professional careers or redirect them. Europeans today see OER as an important setting for acquiring competences in a non-formal learning environment. However, there appear to be no comprehensive data on the number of validation requests that concern learning acquired through the use of OER. Such data would be valuable in estimating demand for such a type of validation and the share of these requests compared to other types.

Recommendation 1:

share knowledge and spread good practice on the validation of OER-derived learning across the formal education sector.

Development and validation of OER varies significantly across education sectors. So far, higher education has taken the lead. Good practice in this sector should be more widely shared. While – by definition – the OER produced by higher education institutions are openly available, there is much less information about the process followed for their production and validation. There is also little information on how the business models that higher education is currently applying to validation of learning derived from the use of OER could be used in other education sectors.

Recommendation 2:

expand the options of what can be validated, to include full qualifications.

Most current accreditation of OER is piecemeal, even in the higher education sector (i.e. credits for specific courses rather than qualifications) and learners are still reliant on traditional methods of delivery to obtain full qualifications. While this may be appropriate for some learners, it may not provide the level and coherence of learning that other learners would like within OER.

Recommendation 3:

develop and make stakeholders aware of the options for validation of learning outcomes from participation in OER/MOOCs and the different benefits of these options, in particular in different European education and labour market contexts.

There is a need for further development of systems for validating non-formal and informal learning acquired through the use of OER. Individuals are not always clear of the different options available to validate such learning and this both hampers their capacity to choose the OER that are right for their purposes and can lead them not to pursue validation options that could be available to them. Validation can take various forms: the main ones used so far are verified certificates and softer recognition tools (including, but not restricted to, open badges, endorsements).

The question that remains is why recognition is sought and, ultimately, what learning is to be recognised. Individuals may make use of OER for personal development, but there is ample evidence that they also look for labour market returns and educational progression (Souto-Otero et al., 2015). The results of validation of learning acquired through OER for entry into higher education courses are, at this stage, more tangible than those for progression within the education system or the labour market. Some institutions, such as TU Delft in the Netherlands, explicitly use MOOC participation for recruitment into their regular programmes (Souto-Otero et al., 2015).

There are also benefits from the use of OER for identification and documentation of learning, but little is known about this aspect, and many

users are uncertain about the value of such documentation in different economic sectors and labour markets in Europe. There is a need to reduce that uncertainty for individuals to be able to make informed decisions regarding validation.

Recommendation 4:

improve measures to link learning derived from the use of OER with other generic systems for the validation of non-formal and informal learning.

Validation of learning acquired through OER has been following a dual evolution: making use of new validation tools that are adapted to OER – mainly designed and implemented by OER providers themselves: educational institutions, OER platforms and networks; and making use of standard validation arrangements at the national, project and institutional level with no or little adaptation.

For this second aspect, there is a need to strengthen the connection between OER-derived learning and generic systems for validation of non-formal and informal learning. An example of this is the need for practical experience as part of the validation systems that prevail in countries such as France. Improving the extent to which practical experience could be embedded into the use of OER, or to which use of OER will complement practical experience in validating acquired learning, requires innovative solutions.

With the scale and evolution of the OER movement in general, and MOOCs in particular, new responses may emerge in relation to the validation of learning derived from the use of OER.

Recommendation 5:

invest in high-quality assessment systems.

High-quality assessment systems are crucial to stakeholder confidence in the outcomes of OER-derived learning. Chauhan (2014) notes that the very large number of learners makes the staffing of assessment difficult or impossible, resulting in adoption of ‘smart systems’ – such as computer assessment – and peer-based assessment. However, there is often little

confidence in the degree of formality and robustness of assessment in OER contexts. With respect to accreditation, current forms of assessment of OER-derived learning are challenging as they differ considerably from those that underpin most accredited learning; sometimes they seem to be driven by what is technologically possible, rather than what is wanted by education institutions and employers. Combining informal/peer-based recognition with formal accreditation may be a way to reduce the challenges of assessment for those offering OER.

List of abbreviations

OER	open educational resources
ACE	American Council on Education [US]
CREDIT	College Credit Recommendation Service [US]
ECTS	European credit transfer and accumulation system
ICT	information and communication technologies
MOOCs	massive open online courses
OERu	OER Universitas
Unesco	United Nations Educational, Scientific and Cultural Organisation
VAE	<i>validation des acquis de l'expérience</i>
OECD	Organisation for Economic Cooperation and Development

Country codes

BE	Belgium	LT	Lithuania
BG	Bulgaria	LU	Luxembourg
CZ	Czech Republic	HU	Hungary
DK	Denmark	MT	Malta
DE	Germany	NL	Netherlands
EE	Estonia	AT	Austria
IE	Ireland	PL	Poland
EL	Greece	PT	Portugal
ES	Spain	RO	Romania
FR	France	SI	Slovenia
HR	Croatia	SK	Slovakia
IT	Italy	FI	Finland
CY	Cyprus	SE	Sweden
LV	Latvia	UK	United Kingdom

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Web links

- Accredible: Painless certificate issuing and management.
<https://accredible.com/>
- Badge Alliance: *about the Badge Alliance*: <http://www.badgealliance.org/about/>
- Coursera: *earn a course certificate*. <https://www.coursera.org/signature/>
- Massachusetts Institute of Technology: *MIT OpenCourseWare (OCW)*:
<http://ocw.mit.edu/index.htm>
- Mozilla open badges: <http://openbadges.org/display/>
- Open Education Europa: *the European MOOCs scoreboard*:
http://openeducationeuropa.eu/en/european_scoreboard_moocs
- ProctorU. <http://www.proctoru.com>
- Proctor2me: *welcome to Proctor2me*. <http://proctor2me.w3-media.net/>
- République Française, Ministère du travail [French Republic, Ministry of Labour]: *VAE, le portail de la validation des acquis de l'expérience [VAE, the portal of the accreditation of prior experience]*.
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Software Secure: RPnow.

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Write On: helping you improve your reading, writing and number skills:

<http://www.writeon.ie/nala/student/index.jsp?2015>

ANNEX

Findings from country research on OER in previous inventories

Country	Relevant information in previous inventory country reports
Austria	No information about OER
Belgium-Flanders	No specific arrangements – general procedures apply
Belgium-Wallonia	No specific arrangements – general procedures apply
Bulgaria	No information – use of OER at early stage in the country
Croatia	specific arrangements – use of OER at early stage in the country
Cyprus	No information
Czech Republic	No specific arrangements
Denmark	No information – no experience with validation of OER in the country
Estonia	No specific arrangements – general procedures apply
Finland	No specific arrangements – general procedures apply
France	No specific arrangements – general procedures apply Issue with the fact that general procedures focus on learning from professional experience
Germany	No specific arrangements – use of OER at early stage in the country but there are discussions about this topic
Greece	No specific arrangements – general procedures apply
Hungary	No specific arrangements – use of OER at early stage in the country
Iceland	No specific arrangements – general procedures apply
Ireland	No information on specific arrangements. Validation of specific forms of OER foreseen

Country	Relevant information in previous inventory country reports
Italy	No specific arrangements – no further information
Latvia	No specific arrangements – general procedures apply
Liechtenstein	No specific arrangements – no further information
Lithuania	No specific arrangements – general procedures apply – use of OER at early stage in the country
Luxembourg	No specific arrangements – general procedures apply
Malta	No information
Netherlands	No information
Norway	No specific arrangements – no further information
Poland	No information
Portugal	No data for Portugal
Romania	No specific arrangements – no further information
Slovakia	No information – use of OER at early stage in the country
Slovenia	No information
Spain	No information
Sweden	No information
Switzerland	No information
UK (England and Northern Ireland)	No specific arrangements – general procedures apply
UK (Scotland)	No information
UK (Wales)	No information

Validation and open educational resources (OER)

Thematic report for the 2016 update
of the European inventory on validation

This thematic report focuses on validation of learning acquired through open educational resources (OER), such as participation in massive open online courses. Based on a review of the literature and data collected for the European inventory, the report explores how validation may relate to the use of OER. It explores relevant main types of validation mechanism and provides an overview of validation practices, with particular focus on assessment and certification; it also outlines a range of conclusions and recommendations. These recommendations emphasise the importance of knowledge-sharing and spreading good practice on validation of OER-derived learning, including awarding full qualifications, raising stakeholder awareness, strengthening measures that link OER-derived learning to more generic systems for validation, and further investing in high-quality assessment systems.

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CEDEFOP

European Centre for the Development
of Vocational Training

Europe 123, 570 01 Thessaloniki (Pylea), GREECE
PO Box 22427, 551 02 Thessaloniki, GREECE
Tel. +30 2310490111, Fax +30 2310490020, E-mail: info@cedefop.europa.eu

visit our portal www.cedefop.europa.eu



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