

# Open Virtual Mobility

## Technical Implementation

### 02-A2.3 VIRTUAL MOBILITY LEARNING HUB WITH INTEGRATED OERS AND MOOCS

- Final Draft -

Outcome 2 Activity A2.3 Virtual Mobility Learning Hub with integrated OERs and MOOCs	
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**Imprint:** This publication is O2-A2.3 of the Open Virtual Mobility Erasmus+ strategic partnership founded by the European Commission 2017 - 2020 under **2017-1-DE01-KA203-003494**, URL: <https://www.openvirtualmobility.eu/>

This paper is O2-A2.3 document produced as part of Outcome 02 – A2 Virtual Mobility Learning Hub Technical Implementation and aims at explaining how the Open Educational Resources and the Massive Open Online Courses were implemented in the Virtual Mobility Learning Hub and in the Project Website.

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## Executive summary

The aim of this draft is to provide details regarding the integration of Open Educational Resources (OERs) and Massive Open Online Courses (MOOCs) in the Open Virtual Mobility Learning Hub and in the Open VM Project Website. This document details the technical implementation of the envisioned integration and how this led to the expected results.

## What are the objectives of this paper?

- To provide details regarding the integration of OERs and MOOCs in the Virtual Mobility Learning Hub and in the Project Website.

## Who is this paper for?

- Pedagogues and didacticians interested in the integration of OERs and MOOCs in Learning Management Systems (LMSs).

- 
- Researchers interested in discussion and presentation of current integration of OERs and MOOCs in LMSs.

## What topics are addressed in this paper?

The main topics are based on a research of different types of integrating OERs and MOOCs in Moodle (the main platform behind the Virtual Mobility Learning Hub) and Wordpress (the content management system behind the Project Website).

## Contributors

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## Acknowledgements

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## 1. Aims of this draft

The aim of this draft is to provide details regarding the integration of OERs and MOOCs in the Virtual Mobility Learning Hub and in the Project Website.

## 2. State of the Art

Integration of MOOCs and OERs in Virtual Learning Systems and, generally, web platforms, is a common problem, although technically it's still a challenge for beginners and experts alike, because of the multiple standards and software fragmentation that exists nowadays. The integration of MOOCs and OERs in Open VM Learning Hub incorporates several components and technologies as it was described in the **O2A1 LH Concept**.

## 3. Methodology

The UPT Team analyzed the types of software that are currently in use in the project, the requirements for the learners and teachers (please see also O2A1 for this) and implemented modules

to help integrate MOOCs and OERs in the Virtual Mobility Learning Hub (VMLH)<sup>1</sup> and the Project Website<sup>2</sup>. The integrated content was used to test the software modules and optimize them.

## 4. Expected results

The present document provides a detailed look at how the MOOCs and the OERs have been integrated in the web platforms, namely the Virtual Mobility Learning Hub (VMLH), based on Moodle, and the Project Website, based on Wordpress.

### 4.1 Integration of MOOCs in the Virtual Mobility Learning Hub

Even from the VMLH Frontpage, users can access the main MOOCs available on the platform through the Featured Courses block (Figure 1). A short description and an evocative image are provided for each of the 8 available courses, which can be accessed by clicking the MOOC's title. This was done in order to improve usability by facilitating access to the courses.

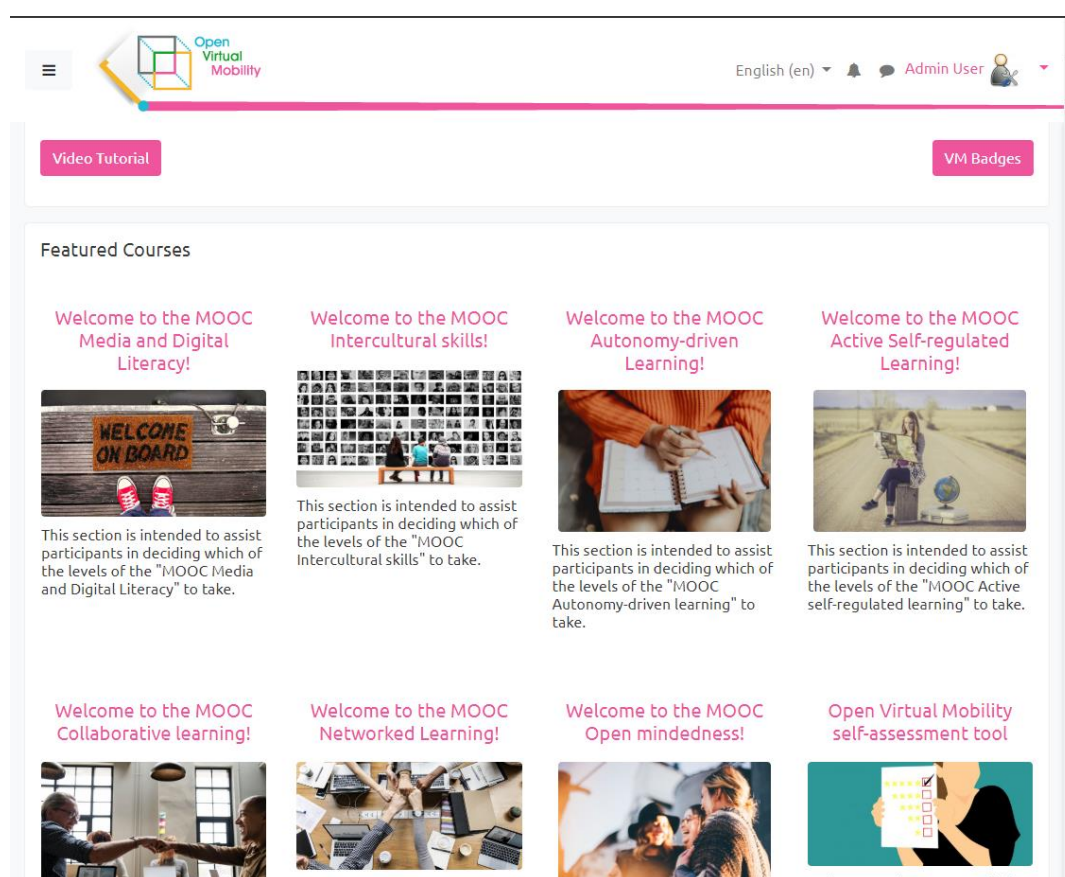


Figure 1 Featured courses block

<sup>1</sup> <http://hub.openvirtualmobility.eu>

<sup>2</sup> <http://openvirtualmobility.eu>

By navigating through the VMLH interface, users can also access the OpenVM MOOCs category (Figure 2), which lists all of the available courses, regardless of their inclusion in the Featured Courses block (which can be done manually).

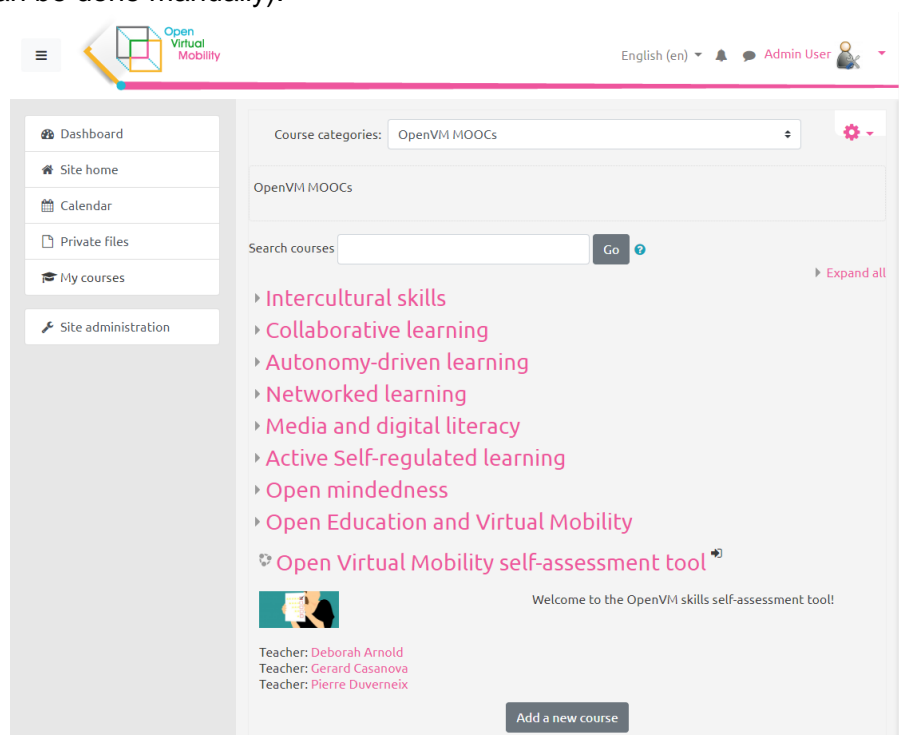


Figure 2 The list of available MOOCs

Each of the MOOCs has an introductory paragraph, highlighting its target audience, prerequisites and rewards (Figure 3). This is accomplished using HTML-formatted templating snippets.

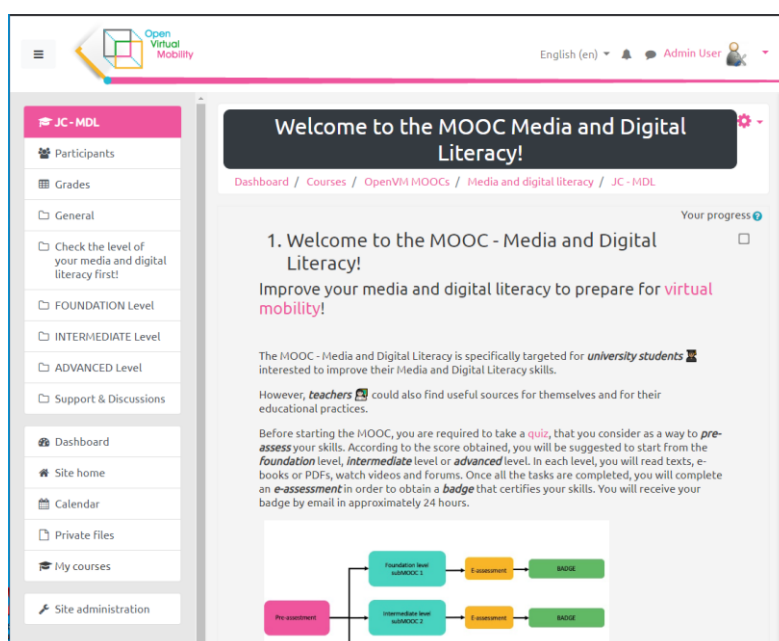


Figure 3 Example of a MOOC landing page

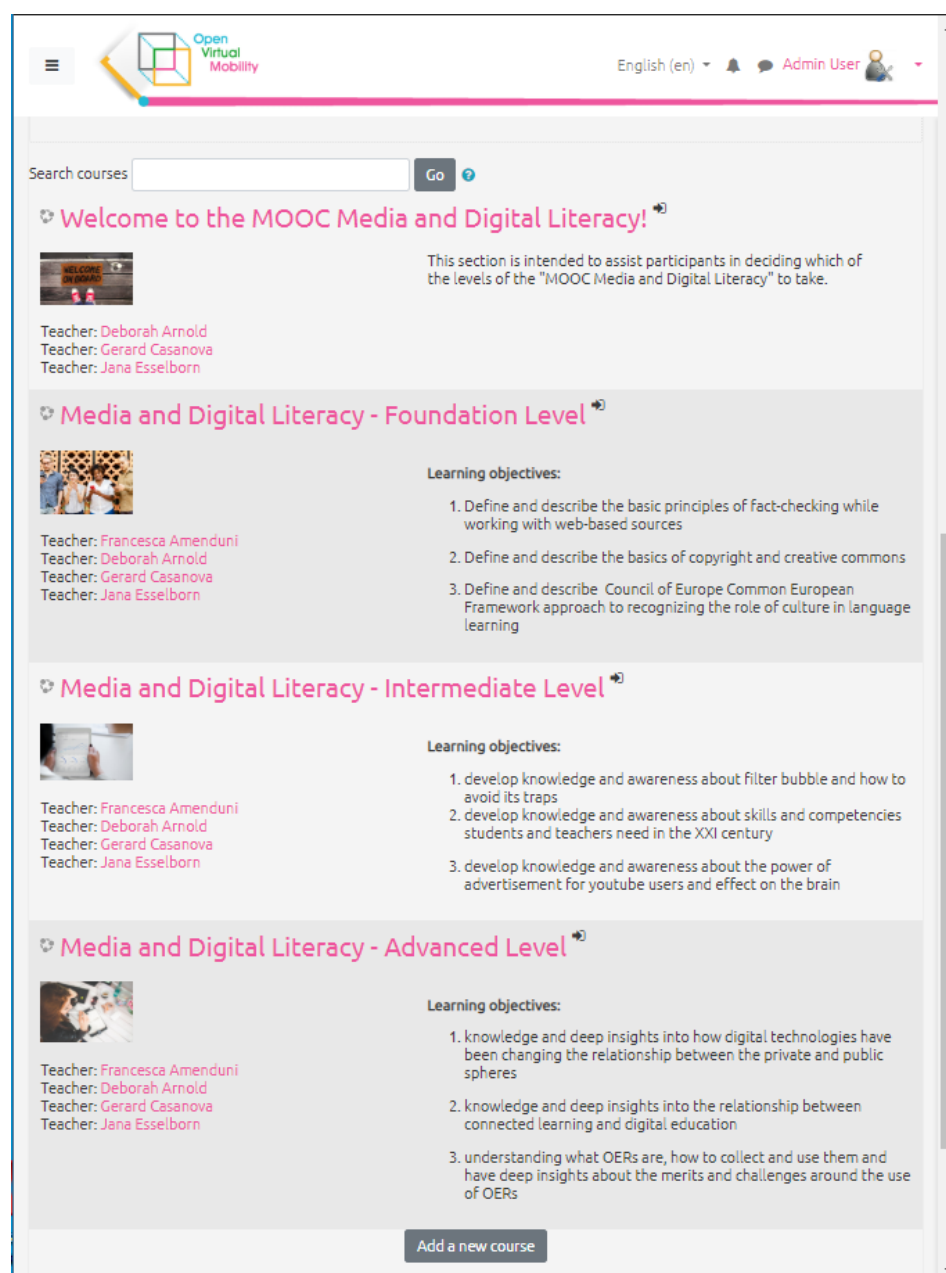


Figure 4 Components of a MOOC

The landing page of the MOOC also provides direct links to the four components each of the MOOCs is comprised of (Figure 4):

- The Welcome section
- The Foundation level
- The Intermediate level
- The Advanced level

Except for the Welcome section, all the other levels provide their own badge upon completion by students. That badge is displayed on the right column of the course and is greyed out (via transparency manipulation) until the current student acquires it.

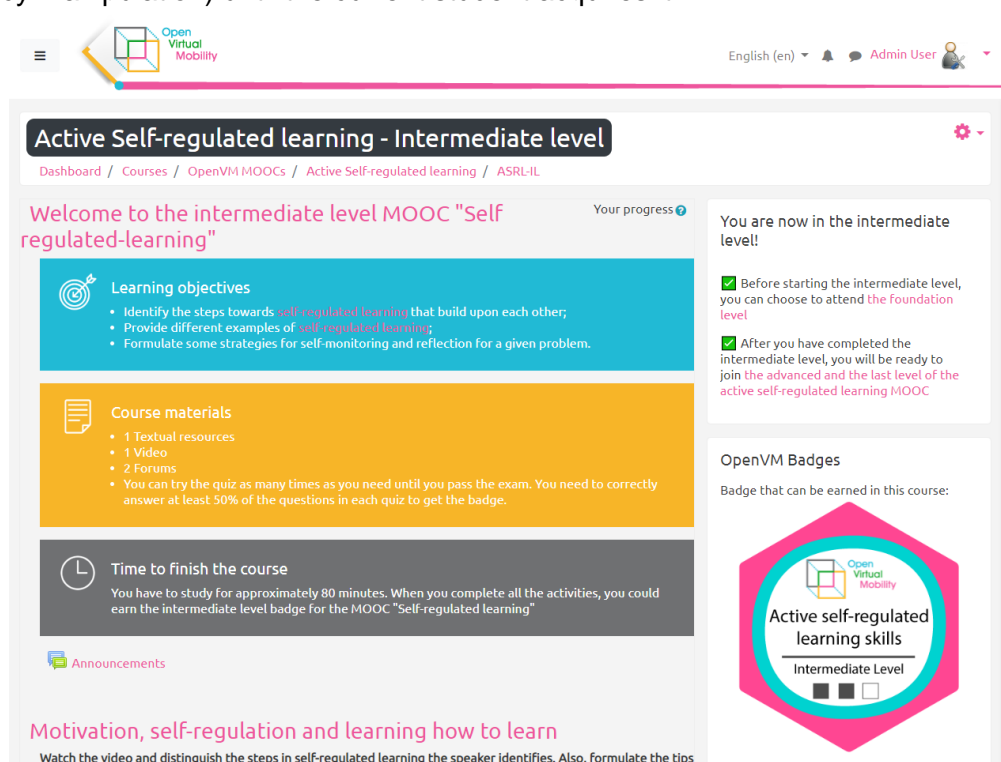


Figure 5 Sub-MOOC interface

Each of the sub-MOOCs begins by listing the general information of the section, including the learning objectives, the course materials that are available, and an estimate of the time needed to complete de course (Figure 5).

The rest of the sub-MOOC contains the study materials, the collaborative learning tools, the (self)evaluation sections, as well as comprehensive guides for completing all of the requirements (Figure 6).


The course materials include text documents (with images, diagrams, etc.), video materials (either embedded from public video content distribution systems such as Youtube, or uploaded into the platform), and rich-text content, with the possibility of including user interaction for increasing the learners engagement.

Assessment can include peer-assessment from the other course participants (using the group-formation tool, workshops or other plugins), self-assessment with automated feedback according to the results, or specialized assessment provided by the MOOC facilitators via direct or general means of communication.




Of note is the H5P integration inside the VMLH, which allows course creators to bring rich interactions to the course materials as well as the evaluation phase, by easily combining, for instance, a video clip with short multiple question quizzes from the subject of the materials which are being presented.

**The VMLH currently hosts 203 webpage resources, 69 files, 112 URLs, 48 assignments, 291 H5P integrations, 40 OU Blogs, 72 quizzes, 20 Workshops and 9 Lessons.**




**Fostering Sociability in Learning Networks through Ad-Hoc Transient Communities**

 Fostering Sociability in Learning Networks through Ad-Hoc Transient Communities ☐


Read this conference paper and reflect on the following questions:  
What are the short-term and long-term motives for learners in a network to share knowledge? What are the affordances that stimulate social learning processes? How would you facilitate such a network?

**Reference:** Sloep, P. B. (2009). Fostering Sociability in Learning Networks through Ad-Hoc Transient Communities. In M. Purvis & B. T. R. Savarimuthu (Eds.), *Computer-Mediated Social Networking* (pp. 62-75). Berlin, Heidelberg, Germany: Springer Verlag. Retrieved from <http://hdl.handle.net/1820/1198>

**Why we need strangeness**


 Why we need strangeness ☐

Watch the video. What concept does the speaker introduce? What is its value for learning?

 How to obtain a badge? Look at our tutorial ☐

**Enabling professional development networks: How connected are you?**

Read this academic article, focussing on the Results and Discussion sections. Identify the elements that students indicate as important for their personal learning environment.



 Enabling professional development networks: How connected are you? ☐




Read the paragraph Informal learning in the midst of practice (page 13-15) focusing on the difference between self-organized learning communities and planned performance training activities  
Read the paragraph Enabling social learning spaces (page 19-21) focusing on the definition of social learning and social spaces

Figure 6 MOOC content

## 4.2 Integration of OERs in the Virtual Mobility Learning Hub

Open Educational Resources have been integrated in the VMLH as independent modules inside the courses (Figure 7). They have been mostly produced using H5P, a method to create, share and reuse interactive content.






English (en)


Silviu Vert


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**Stufe 1 - Überblickswissen**

Dashboard / Courses / OpenVM MOOCs in German / Digitale Kompetenzen (Online-Kurs) / DK-Überblickswissen / 2. Digital Produzieren / **Thematik & Motivation**

**Thematik & Motivation**







### Digitales Produzieren

- Eine Vielzahl von Programmen und Apps helfen bei der Umsetzung und Ausgestaltung digitaler Lehr- und Lernmaterialien.
- Diese Kurs verschafft Ihnen einen Überblick und Einstieg in die Möglichkeiten digitaler Ausgestaltung der Lehre.

2 / 4

Quelle: Pexels.com | CC0 (Bilder)

 Reuse
 Embed
 H-P

2.1 Einführung
2.2 Formen digitaler Lehr-/Lernmaterialien

Figure 7 Integration of single OER in VMLH

There are currently more than 200 OERs integrated in the VMLH. They are listed in the OER section<sup>3</sup> of the website (Figure 8).

<sup>3</sup> <https://www.openvirtualmobility.eu/oer/>

The OpenVM OER repository is aimed to collect OERs created, assessed and used in the OpenVM project by students and teachers. The OpenVM OER repository includes not only OERs in English but also OERs in the partners' language (German, Italian, Romanian, Dutch, French and Spanish). OERs are organised according to the skills necessary to be involved in Virtual Mobility, as defined in the Output 1 of the project. Other relevant transversal skills are included.

See all the collected OERs: <https://www.openvirtualmobility.eu/resource/>

Here is an example of an OER created in the OpenVM project:



Figure 8 Starting page for the list of OERs integrated in the VMLH

#### TWITTER FEED @OPENVM\_ERASMUS

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Open Virtual Mobility (openVM) is an Erasmus+ strategic partnership dedicated to creating accessible opportunities for achievement and recognition of VM skills.

**Open Virtual Mobility\_Erasmus+**  
@openVM\_erasmus · 15 Jan  
Our second Interim Report for @openVM\_erasmus project is submitted! @mediendidaktik @jkwebtec @diando70 @AntonellaPoce @gemiturfer @krajagopal @firssova @EADTU @DebjArnold @gecas21 @amendoonia @ilseopdebeeck @joinBestr / Looking forward to u review @Erasmus\_DAAD @Erasmus\_Project

Open Virtual Mobility\_Erasmus+ Retweeted  
**NAWA Polish National Agency for Academic Exchange**  
@NAWA\_Poland · 15 Jan

## 4.3 Integrating OERs in the Project Website

As it was described in the O2A1 LH Concept and in view with the open access policy provided by the project and the Erasmus+ programme we investigated early on a method of creating an open access OERs repository. As there are already several OERs repository but they lack mainly in a quality evaluation, or structure based on topics, or indication of their use for skills or competence requirement, the OERs market was planned to include these features.

To integrate OERs in the Project Website, we analyzed the technical possibilities that we have. The Project Website is built on top of WordPress, a Content Management System initially developed for building blogs, but which nowadays is widely used to build all kinds of websites, blogs and web apps. WordPress currently powers a third<sup>4</sup> of the websites on the entire World Wide Web.

The customary way of extending WordPress with new functionality is by developing and/or installing existing plugins. We did a research and found a plugin called WP OER<sup>5</sup> which proved to be a good start for integrating our OERs in the Project Website.

We installed and customized the plugin in the Project Website and configured it to be available at an easy to find and remember URL: <https://www.openvirtualmobility.eu/oer/>

The OERs that were integrated can be seen all at once (Figure 9) or filtered by category or tags (Figure 10).

<sup>4</sup> <https://trends.builtwith.com/cms>

<sup>5</sup> <https://wordpress.org/plugins/wp-oer/>

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Home > Resource

### Open Educational Resources







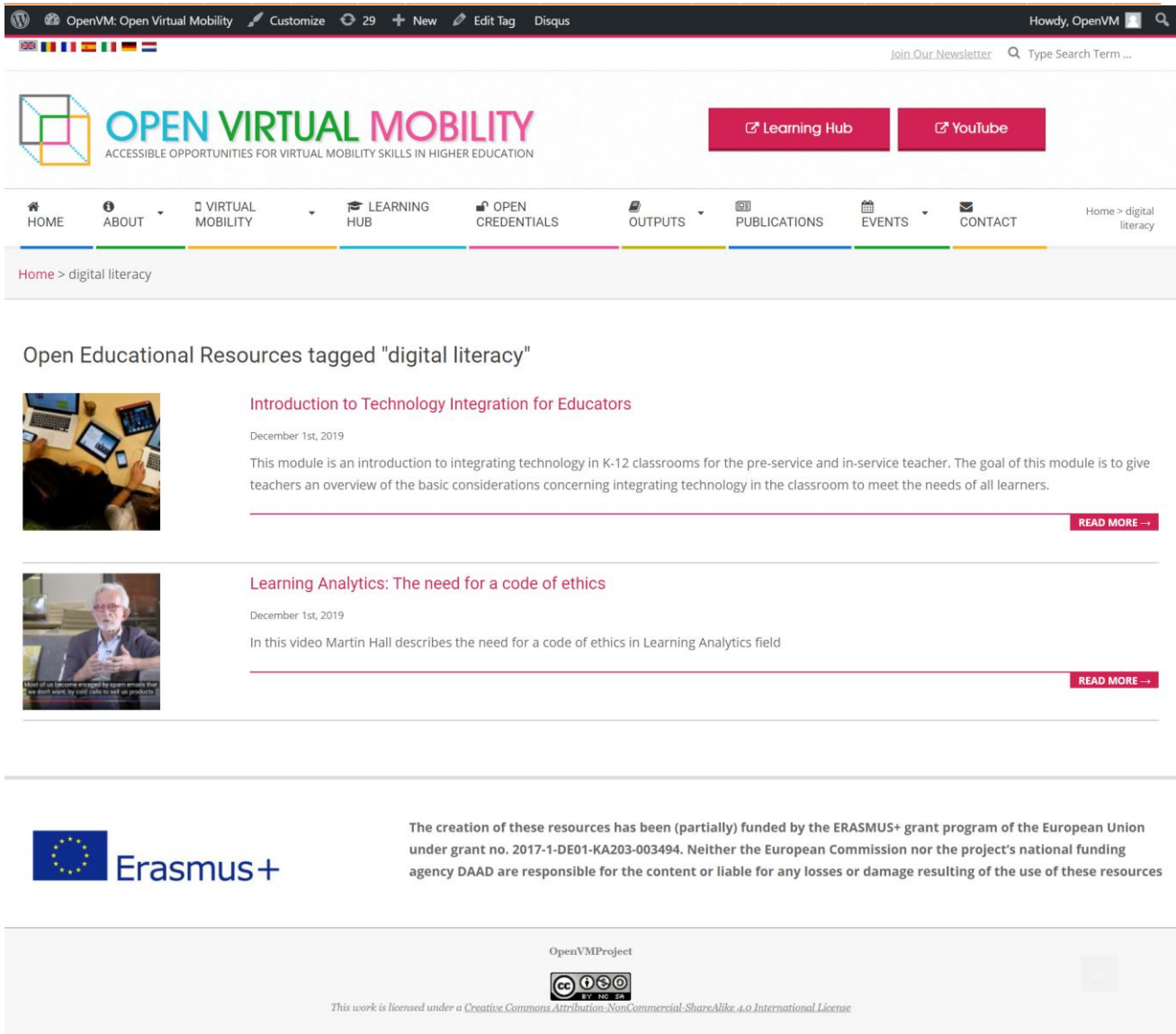
	<p><b>Quiz – Lernzielkontrolle</b></p> <p>December 17th, 2019</p> <p><a href="#">READ MORE</a></p>
	<p><b>Quiz – Digitale Instrumente einsetzen, um die Auslandsmobilität Studierender zu fördern</b></p> <p>December 17th, 2019</p> <p><a href="#">READ MORE</a></p>
	<p><b>Quiz – Digitale Medien und Online Lehrangebote für das Anwerben internationaler Studierender</b></p> <p>December 17th, 2019</p> <p><a href="#">READ MORE</a></p>
	<p><b>Quiz – Digitale Medien und Online Lehrangebote für das Anwerben internationaler Studierender</b></p> <p>December 17th, 2019</p> <p><a href="#">READ MORE</a></p>
	<p><b>Digitale Medien und Online Lehrangebote für das Anwerben internationaler Studierender</b></p> <p>December 17th, 2019</p> <p><a href="#">READ MORE</a></p>
	<p><b>Quiz – Lektion 5.5.1.1 – Digitale Medien und Online Lehrangebote für das Anwerben internationaler Studierender</b></p> <p>December 17th, 2019</p> <p><a href="#">READ MORE</a></p>

Figure 9 Listing of OERs in the website



The screenshot shows the Open Virtual Mobility website interface. At the top, there's a navigation bar with links like 'OpenVM: Open Virtual Mobility', 'Customize', '29', 'New', 'Edit Tag', and 'Disqus'. Below this is a search bar and a 'Join Our Newsletter' link. The main header features the 'OPEN VIRTUAL MOBILITY' logo and the tagline 'ACCESSIBLE OPPORTUNITIES FOR VIRTUAL MOBILITY SKILLS IN HIGHER EDUCATION'. A navigation menu includes 'HOME', 'ABOUT', 'VIRTUAL MOBILITY', 'LEARNING HUB', 'OPEN CREDENTIALS', 'OUTPUTS', 'PUBLICATIONS', 'EVENTS', and 'CONTACT'. The main content area is titled 'Open Educational Resources tagged "digital literacy"'. It lists two resources:

- Introduction to Technology Integration for Educators** (December 1st, 2019): This module is an introduction to integrating technology in K-12 classrooms for the pre-service and in-service teacher. The goal of this module is to give teachers an overview of the basic considerations concerning integrating technology in the classroom to meet the needs of all learners. [READ MORE →](#)
- Learning Analytics: The need for a code of ethics** (December 1st, 2019): In this video Martin Hall describes the need for a code of ethics in Learning Analytics field. [READ MORE →](#)

At the bottom, there's an Erasmus+ logo and a disclaimer: 'The creation of these resources has been (partially) funded by the ERASMUS+ grant program of the European Union under grant no. 2017-1-DE01-KA203-003494. Neither the European Commission nor the project's national funding agency DAAD are responsible for the content or liable for any losses or damage resulting of the use of these resources'. Below this is the 'OpenVMProject' logo and a Creative Commons license: 'This work is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License'.


Figure 10 Listing of OERs tagged "digital literacy"

Of course, the OER module can display a single Open Educational Resource with all the information that has been filled in: name of OER, category of OER, description of OER, name of author, affiliation of author, media type, URL to original resource, license, tags, and so on (Figure 11).



OpenVM: Open Virtual Mobility
Customize
29
New
Edit Resource
Disqus
Howdy, OpenVM

Join Our Newsletter
Type Search Term ...



**OPEN VIRTUAL MOBILITY**  
ACCESSIBLE OPPORTUNITIES FOR VIRTUAL MOBILITY SKILLS IN HIGHER EDUCATION

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OUTPUTS
PUBLICATIONS
EVENTS
CONTACT

Home > Resource > digital literacy, educators, teachers, technology > Introduction to Technology Integration for Educators

## Introduction to Technology Integration for Educators



MEDIA AND DIGITAL LITERACY

### Description

This module is an introduction to integrating technology in K-12 classrooms for the pre-service and in-service teacher. The goal of this module is to give teachers an overview of the basic considerations concerning integrating technology in the classroom to meet the needs of all learners.

Original Resource: [sites.google.com](https://sites.google.com)

Author name: Paula Lombardi

Media Type: Website

Keywords:

DIGITAL LITERACY
EDUCATORS
TEACHERS
TECHNOLOGY

Figure 11 Single view of one OER

The OER plugin was customized to fit the needs of the Project Website. As such, we wrote CSS to customize the look and feel (Figure 12), customized the metadata fields of the OERs to fit our needs (Figure 13) and did other code personalization.

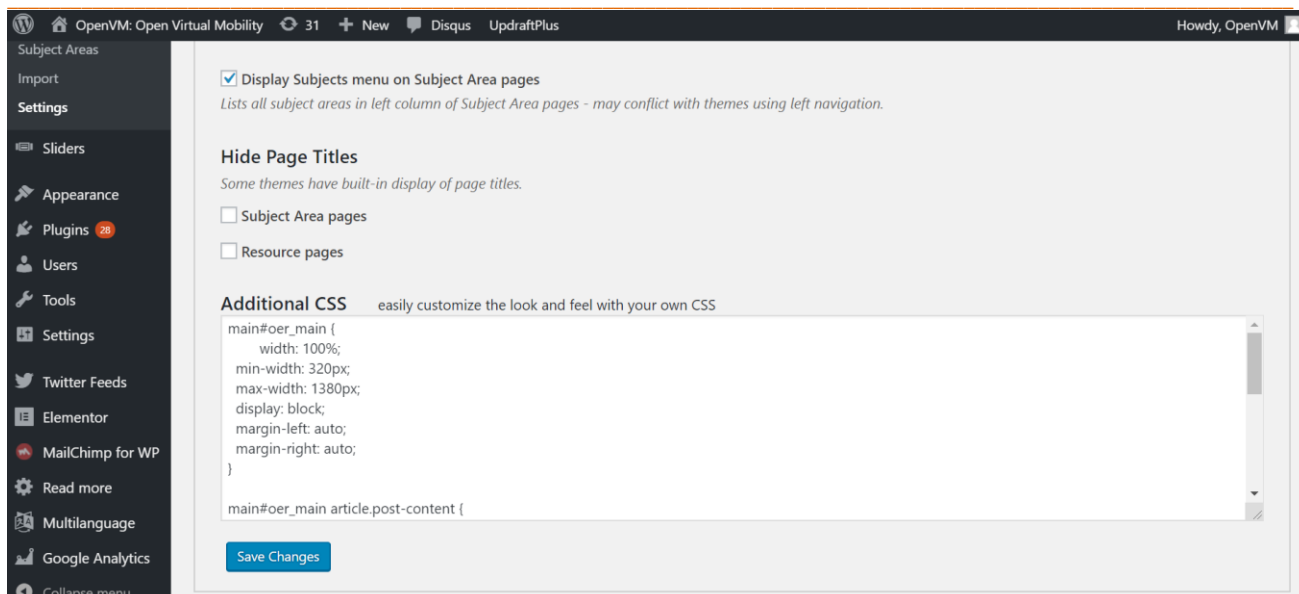


Figure 12 Customization of the look and feel of the OER module

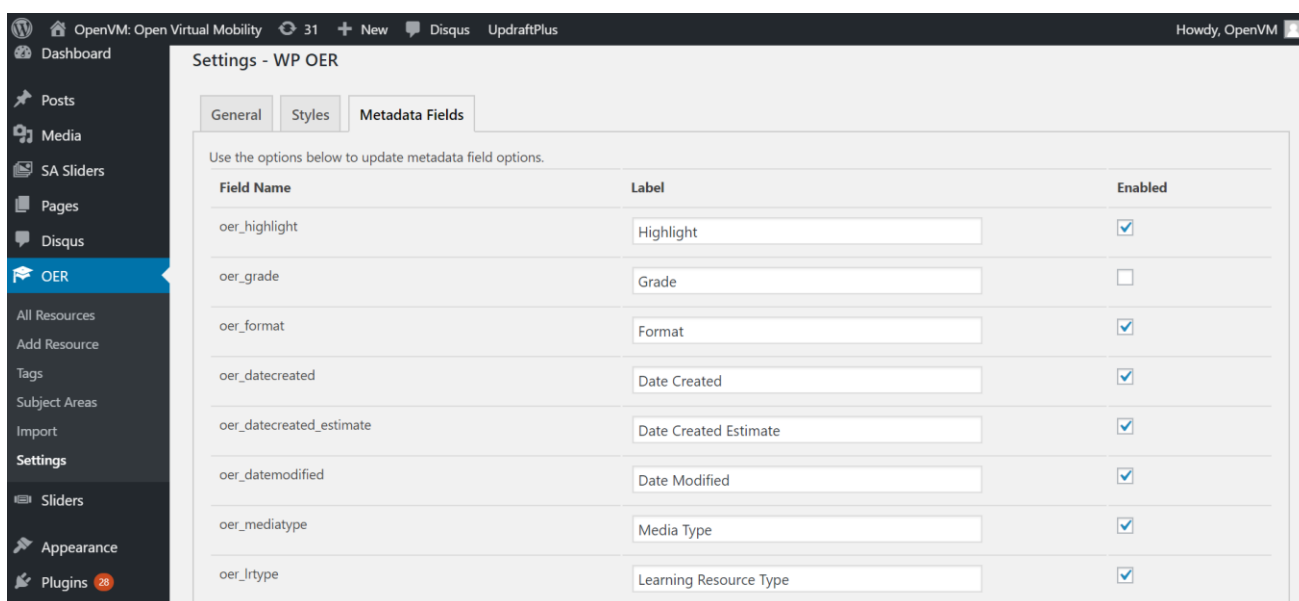


Figure 13 Customization of the metadata fields

At the moment, the OERs have been uploaded manually on the Project Website. Each partner has a backend account that they can use to input the data needed to properly display the OER in the frontend.

There are currently more than 200 OERs integrated in the Project Website<sup>6</sup> (Figure 9).

<sup>6</sup> <https://www.openvirtualmobility.eu/oer/>

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## 5. Next steps

From a technical point of view, the following operations need to be completed:

- Implementing additional functionalities according to the partners' needs and suggestions.
- Importing the OERs automatically on the Project Website from the VMLH for better visibility.
- Develop the missing functionalities.

## References

Wordpress - open source software for creating websites, blogs, or apps

<https://wordpress.org/>

WP OER – open educational resource repository for WordPress websites

<https://wordpress.org/plugins/wp-oer/>

Moodle – the leading open-source Learning Management System

<https://moodle.org/>

## Attachments

none