Open Virtual Mobility

Technical Implementation

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

- Final Draft -

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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)[1] and the Project Website[2]. 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.

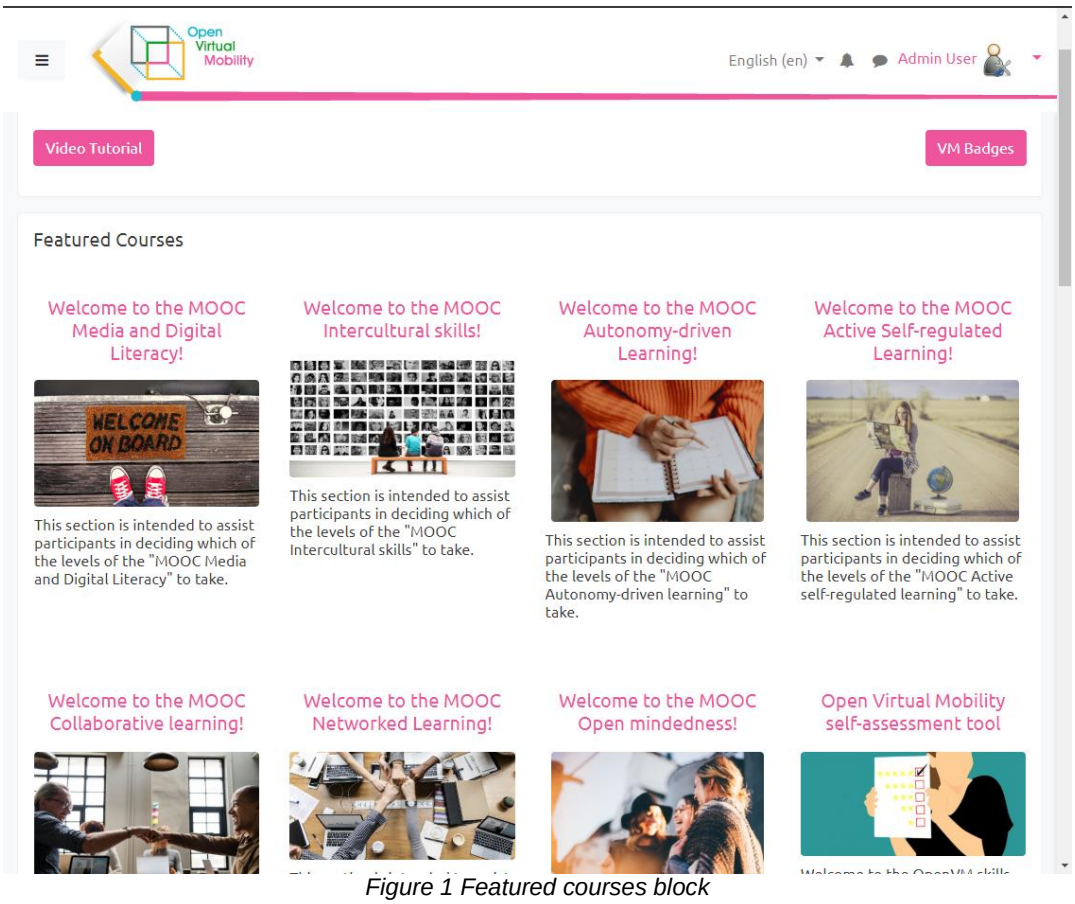

Figure 1 Featured courses block

[1] http://hub.openvirtualmobility.eu
[2] 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).

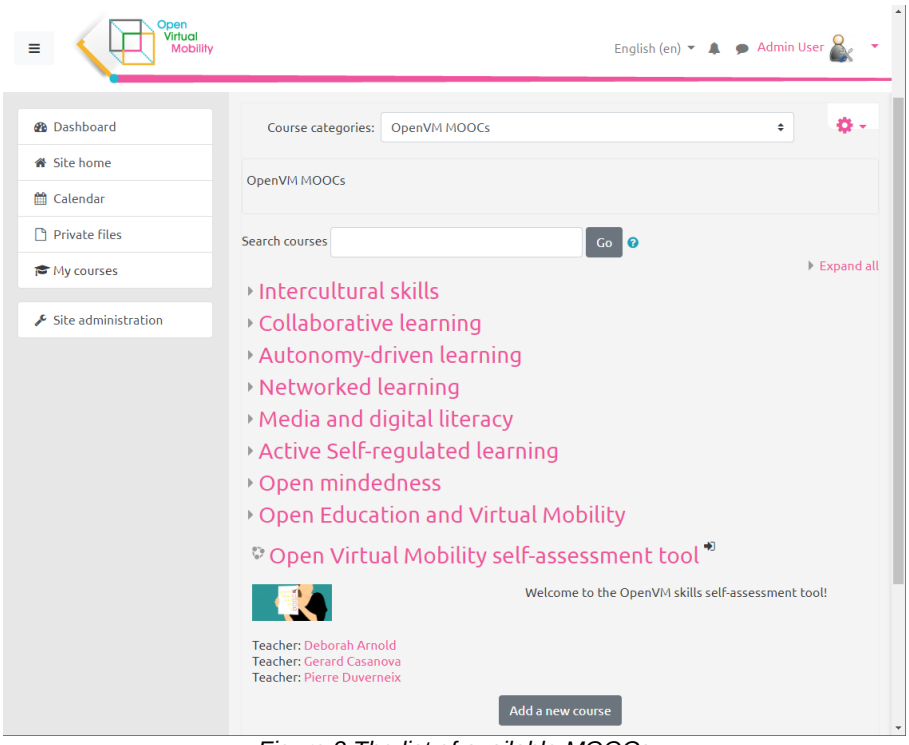

Figure 2 The list of available MOOCs

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

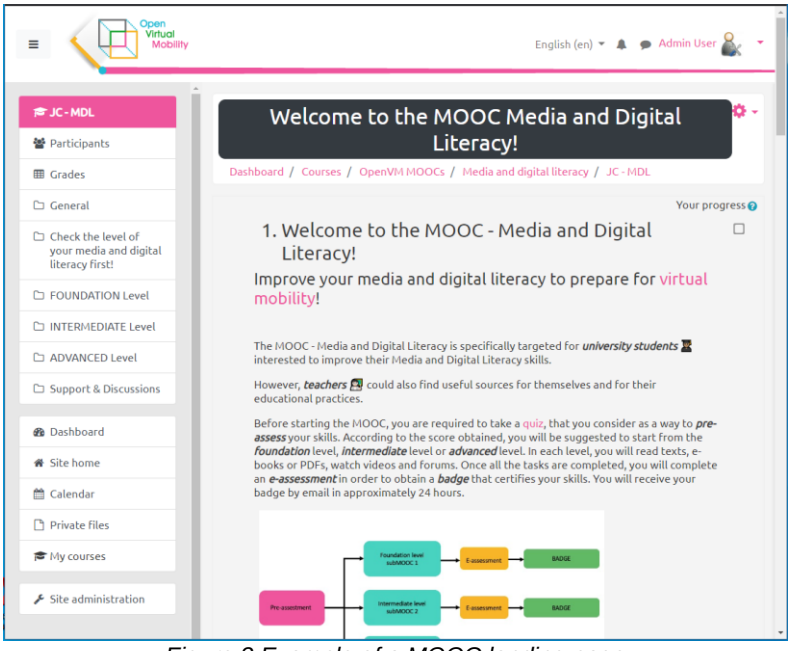

Figure 3 Example of a MOOC landing page

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.

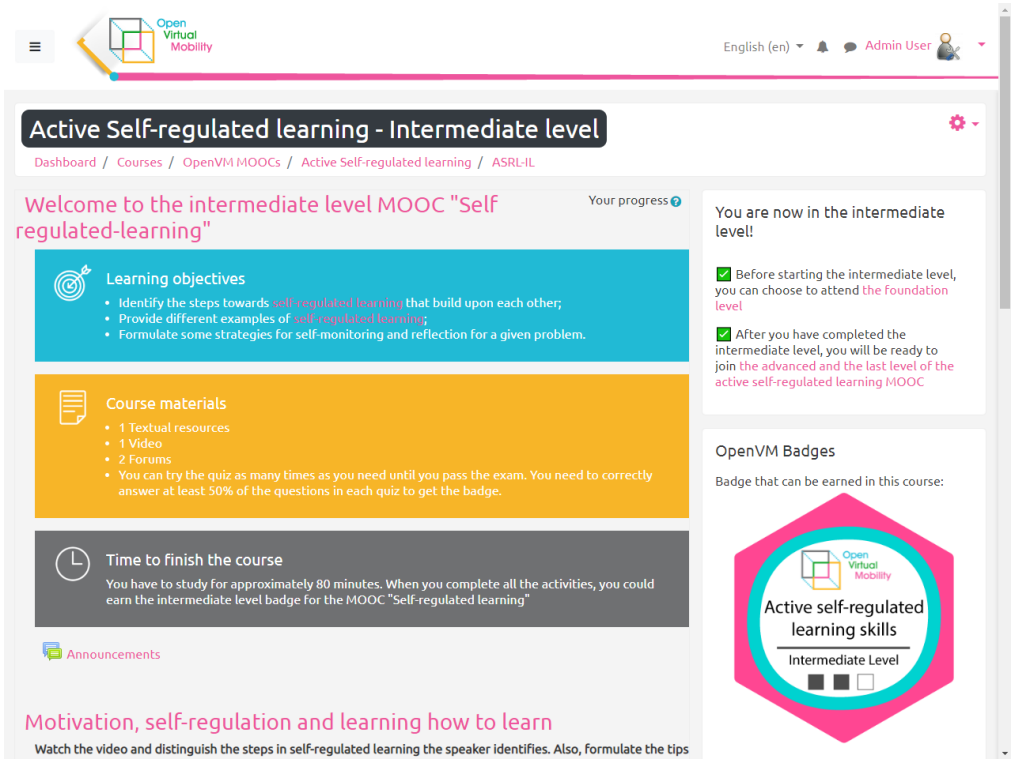

Figure 5 Sub-MOOC interface

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.

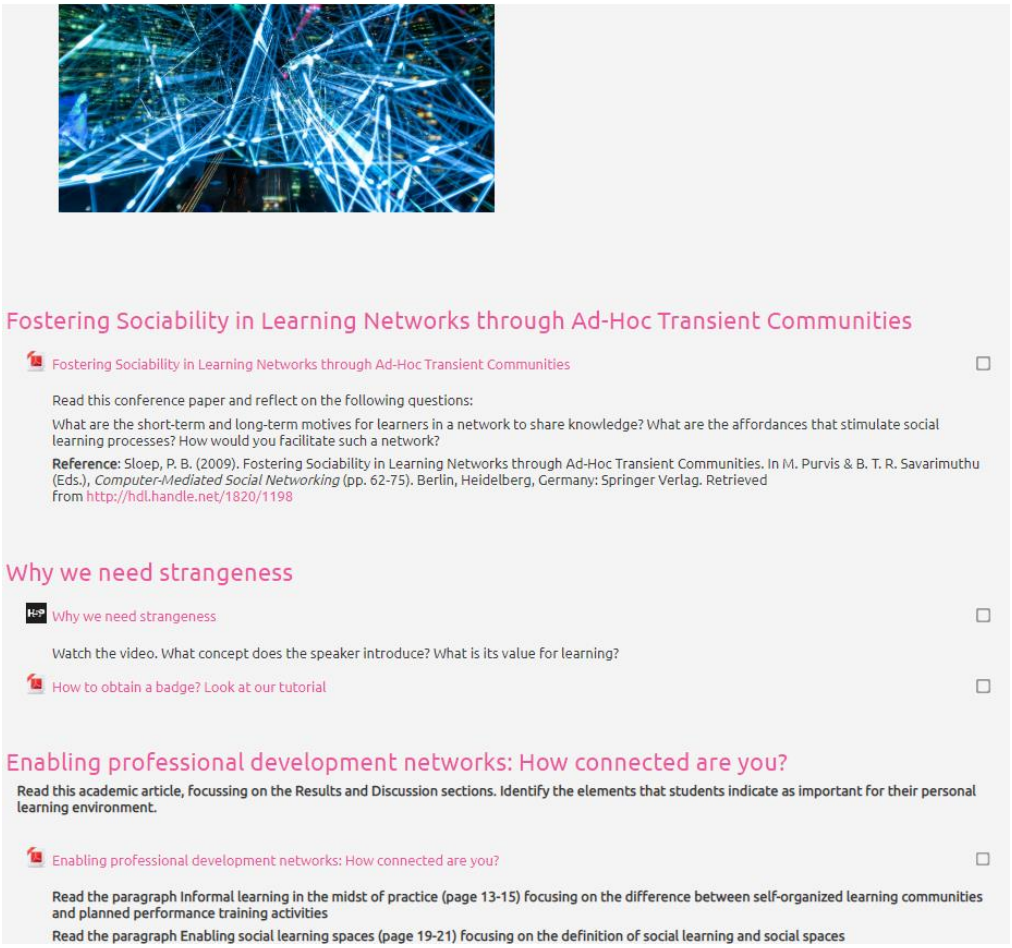

Figure 6 MOOC content

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.

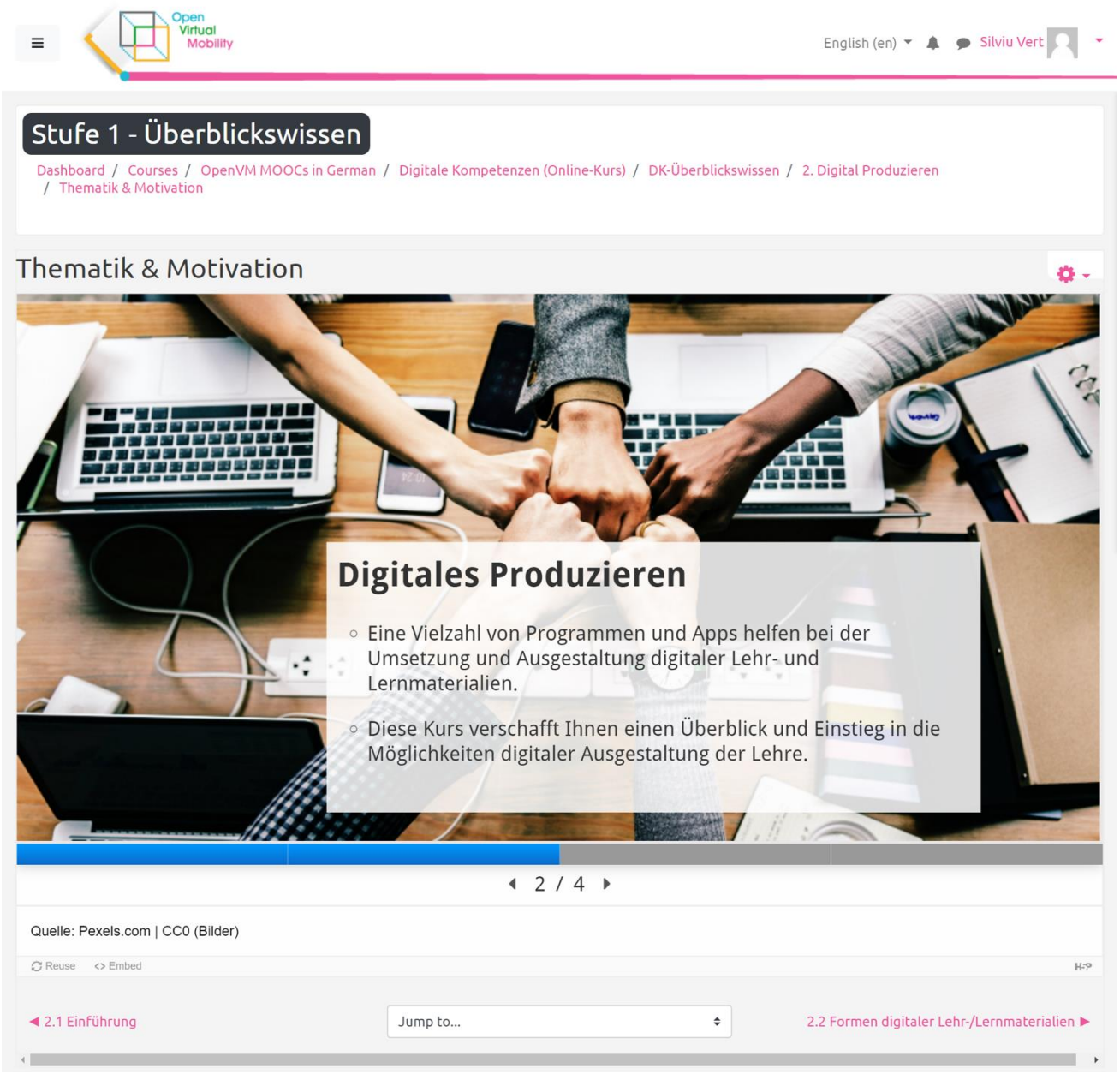

Figure 7 Integration of single OER in VMLH

There are currently more than 200 OERs integrated in the VMLH. They are listed in the OER section[3] of the website (Figure 8).

[3] https://www.openvirtualmobility.eu/oer/

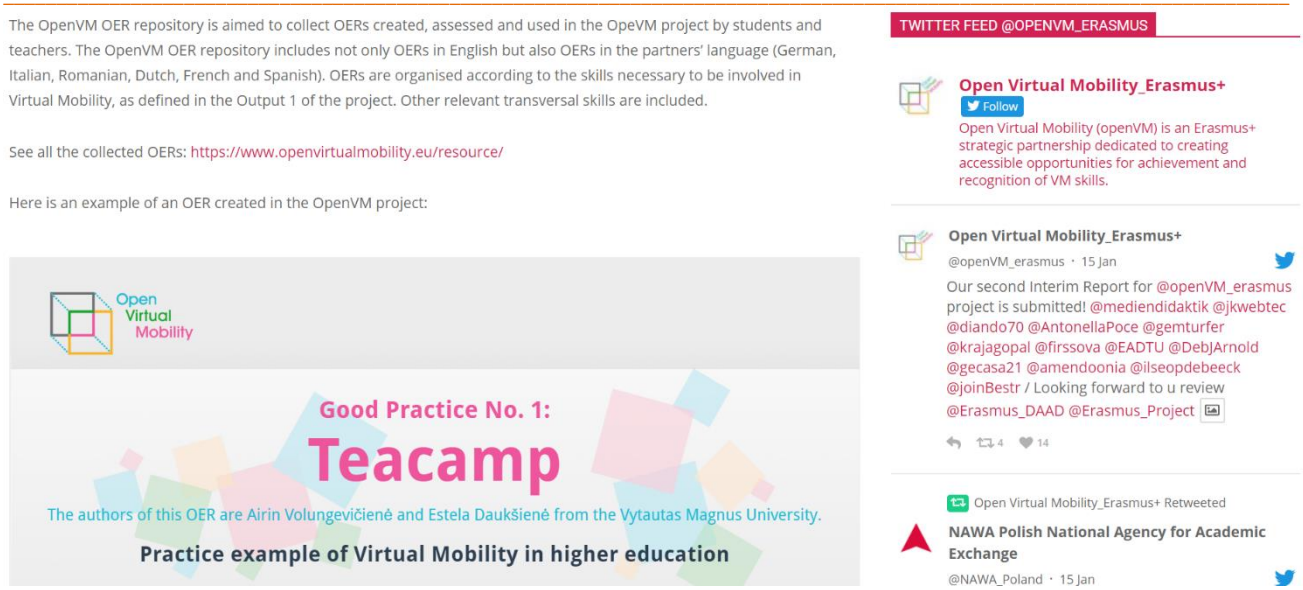

Figure 8 Starting page for the list of OERs integrated in the VMLH

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[4] 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[5] 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).

[4] https://trends.builtwith.com/cms
[5] https://wordpress.org/plugins/wp-oer/

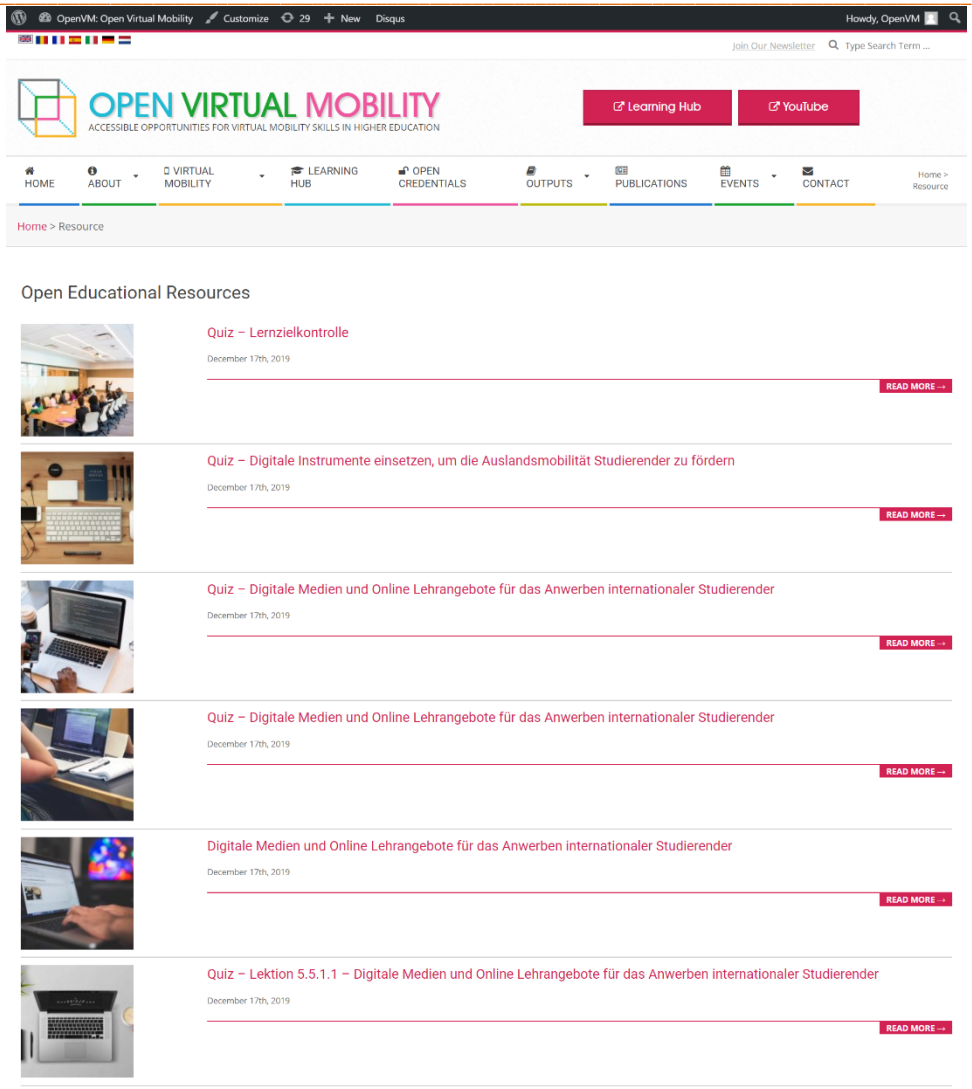

Figure 9 Listing of OERs in the website

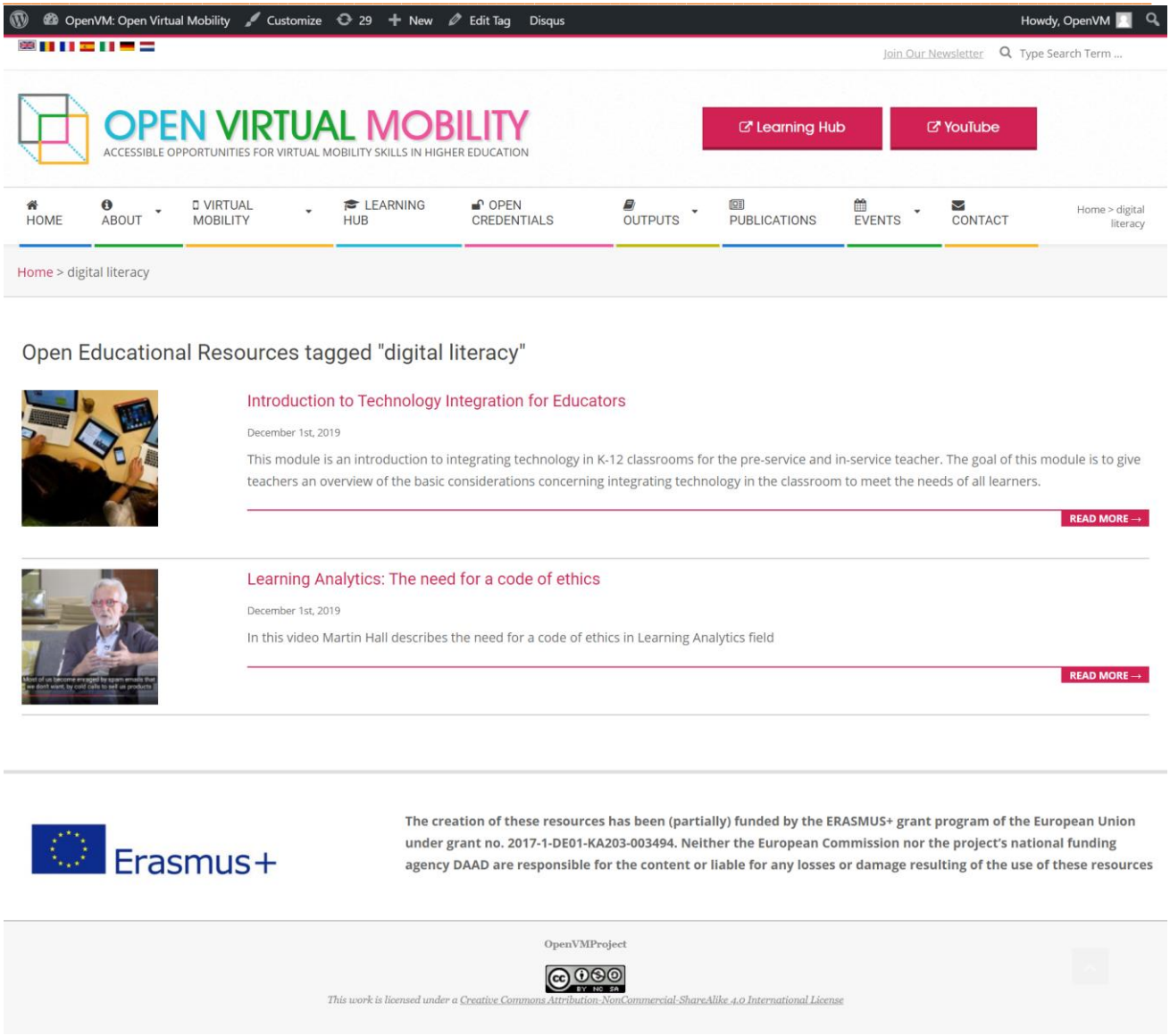

Figure 10 Listing of OERs tagged "digital literacy"

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).

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.

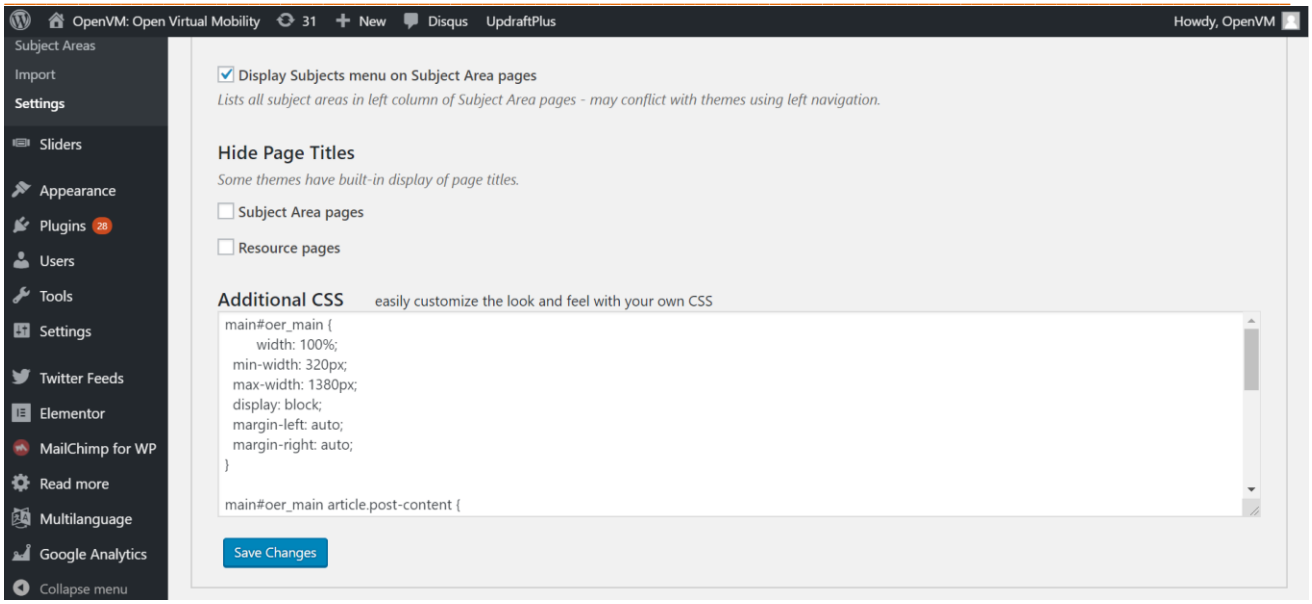

Figure 12 Customization of the look and feel of the OER module

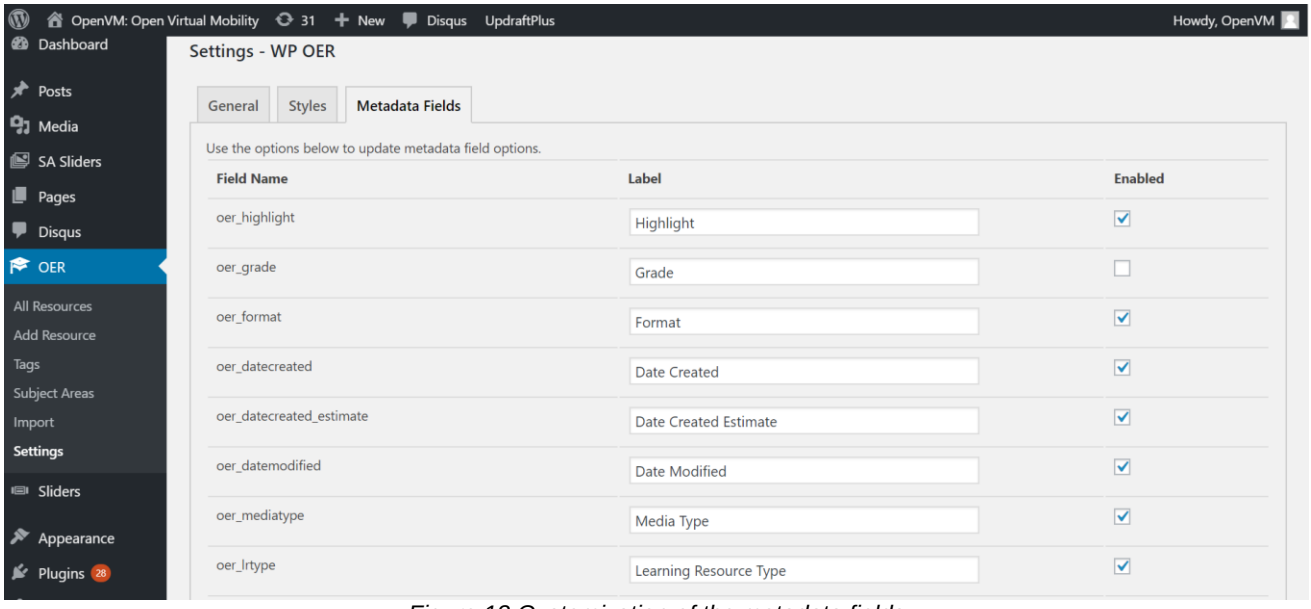

Figure 13 Customization of the metadata fields

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[6] (Figure 9).

[6] https://www.openvirtualmobility.eu/oer/

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