A TOOL TO ENHANCE THE UTILIZATION OF OER IN HIGHER EDUCATION

L. Ali, U. Schroeder

RWTH Aachen (GERMANY)

Abstract

Open Educational Resources (OER) are an important element in the process of digitizing higher education teaching and are seen as an essential building block for openness in the education system. OER can potentially play an important role in improving the education around the globe, since it eases the access to high quality digital educational materials. However, there are challenges that are facing the deployment of OER in higher education. One of the most important challenges is the production of new OER materials and the conversion of already existing educational resources to OER. This could be viable by qualifying educators and teachers through training courses and/or supporting them with appropriate tools. There are many tools to create new OER contents. However, there is a huge amount of already produced and well-tested educational materials, which could be utilized and converted to OER instead of producing new content from the scratch. In this paper, we will summarize different aspects of deploying OER in the context of higher education based on a survey conducted during OER workshops. The survey output will be introduced briefly concentrating mainly on challenges facing the educators when dealing with OER. We suggest some ideas and solutions to overcome these challenges in order to ease the deployment of OER. Additionally, we will introduce a tool currently under development to support converting the educational materials to OER and we will present its main functionality.

Keywords: OER, Higher Education, Open, Education, Open Educational Resources, OER Survey, OER Tool.

1 INTRODUCTION

Open Educational Resources (OER) is playing nowadays a vital role in transforming the education in general and the higher education specifically. Through the deployment of OER, students can access high quality educational materials at lower cost. They can also share a broad range of subjects and topics [1]. OER offer opportunities for broadening the participation in higher education, reducing course development and study costs [2]. This could reduce the impact of demographic, economic, and geographic educational boundaries [3] and offer students especially from the developing countries access to the best courses and degree programs. Additionally, OER guarantees the possibility to modify, reuse, remix and redistribute the resources which is the core principle of OER original proposal [4].

However, there are many challenges that are still facing the proper utilization of OER in the higher education context. One of the most important challenges is how to access the appropriate resource and to choose among that huge number of available resources which are permanently growing. Another significant challenge is the production of new OER materials and the conversion of already existing ones which is only viable by qualifying educators and teachers through training courses and/or supporting them with specific tools. In addition to that, the uncertainty about free licences and the combination of different Creative Commons (CC) [5] licences are considered an obstacle in the deployment of OER.

There are many platforms and tools that support producing and sharing OER contents. One of the most famous tools that supports creating and editing interactive learning content for the web is H5P [6]. The web based editor is able to add and replace multimedia files and textual content in all kinds of H5P content types and applications. Tutory [7] is another free tool, which supports teachers with creating worksheets. The materials created with Tutory are available under Creative Commons licence as OER and can be used and adapted by other teachers. Another useful tool for combining different resources with different licences is the ccMixer [8], which is still a prototype. This tool checks with three clicks if different licences are compatible with each other and suggests all possible licences for the new work. Moreover, the integrated online image search in Microsoft products enables looking for creative commons images and include them within the work. However, without listing the appropriate licence for the found images. All of the above-mentioned tools are oriented towards creating new OER contents. But what about the huge amount of already produced and well tested educational materials which are
not OER compliant? It would make sense to convert these materials to OER instead of the time-consuming production of new materials from scratch.

In this paper, we will present briefly a survey output accomplished in January this year at three OER workshops. The aim was to analyse the responses of the participants regarding OER context and to determine the challenges facing the utilization of OER in higher education context. In an attempt to overcome some of the challenges and to support producing OER, we have started to develop a tool to semi-/automate the conversion of already produced educational materials to OER. A brief description of the tool functionality is presented in the following sections.

2 METHODOLOGY

In order to analyze the current situation related to the acceptance of openness in the context of higher education in general and to the term OER specifically, we have conducted a survey covering the different aspects of openness. We have asked the participants at three OER Workshops conducted at RWTH Aachen and at the International OER conference in Lucerne-Switzerland to fill out the survey consisting of different questions regarding the utilization of OER in higher education. As can be seen from Table 1, the majority of the participants were educators (professors, lecturers and research assistants) with 70% percent. The remaining 30% percent were interested people from other sectors such as university libraries.

<table>
<thead>
<tr>
<th>Function</th>
<th>Num. Participants</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professor</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Lecturer</td>
<td>3</td>
<td>7.5</td>
</tr>
<tr>
<td>Research Assistant</td>
<td>23</td>
<td>57.5</td>
</tr>
<tr>
<td>Other</td>
<td>12</td>
<td>30</td>
</tr>
</tbody>
</table>

The questions covered many aspects regarding the deployment of OER such as: the most used OER types, the challenges facing the utilization of OER and the purposes to use OER in their educational practices. Additionally, we introduced the idea of automating the (re-)production of already exiting educational resources as OER. The idea behind that is to avoid the unneeded effort to create new educational resources from the scratch and to utilize those already produced and well-tested materials. More than 80% of the participants were interested in a tool to semi-/automate the re-/creation of educational resources and convert them to OER (Fig. 1).

3 RESULTS

According to the participants feedback regarding semi-/automating the production of OER, we have started to develop a tool to assess in converting the already exiting educational materials to OER. We have started with materials containing images, since according to our survey, images are the most common used resources among educators as shown in Fig. 2.
The tool is intended to extract the images from a file and to search for similar OER-images in the OER portals. Upon finding the appropriate similar images, the user will be asked to choose the most suitable OER image which corresponds to his requirements. The found images will be extracted with their meta data and will be listed with the information necessary for the correct and completed OER-citation like: the source of the image, the name of the author or the artist and the type of creative commons (CC) licence of the image. The new found OER image can then replace the old one. Fig.3 shows a sketch of the Graphical User Interface (GUI) of the intended tool.

Based on the licences of the new images along with the licences of other resources appeared on the file, the final licence of the overall document can be determined. To determine that, the tool asks the user, if he wants to edit the images. If no, the user can freely choose the type of CC licence for his document. If the images are to be edited, the document should be licenced according to the CC compatibility table shown in Fig. 4. The table illustrates whether different licences are compatible with
each other and suggests one variation of the licence that could be applied when combining different resources. It is intended that the tool will adopt this table as a reference for determining the overall licence of the document. The licence has to be clearly visible within the document.

![Compatibility table of CC licenses](image)

Figure 4: Compatibility table of CC licenses [9].

4 CONCLUSIONS

The deployment of open educational resources can revolutionize the educational system, since they provide many opportunities in accessing and utilizing the huge amounts of educational materials. However, there are many challenges that are still facing the effective use of these resources in addition to those challenges facing the proper adaption of the valuable already exiting non OER resources and converting them to OER. In this paper, we have introduced briefly a survey output conducted during different OER Workshops. Upon analysing the survey, we have concluded, that there is a need to support the OER community and especially those interested in creating OER contents with a tool to facilitate converting the available educational resources to OER. Currently, we are developing a tool to support this conversion. According to the survey, the most common used OER types among the educators are images. Therefore, we have started the development of the tool with emphasis on images. The preliminary specification of the tool has been presented in the previous section. After finishing the development and testing of OER Image wizard, we are planning to extend the tool to deal with other resources such as videos.

ACKNOWLEDGEMENTS

A special thank to all participants at OER Workshops held at RWTH Aachen University and at the International OER conference 2019 in Lucerne who filled out the survey.

REFERENCES


