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Article published in:

Universität Potsdam

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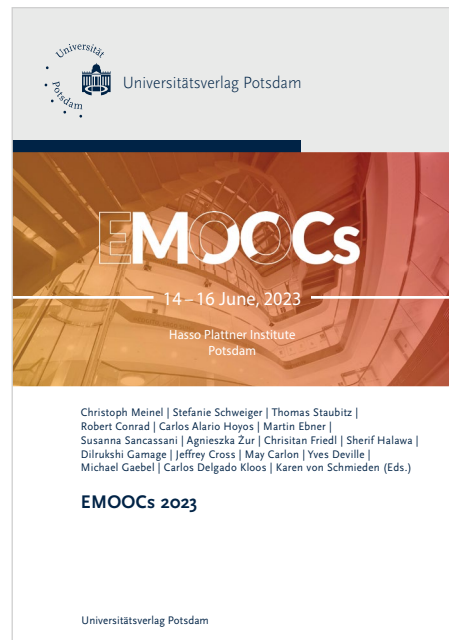
EMOOCs

14 – 16 June, 2023

Hasso Plattner Institute
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EMOOCs 2023

Universitätsverlag Potsdam

Central Elements of Knowledge and Competence Development with MOOCs
Using the Example of the OER-MOOC

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To implement OERs at HEIs sustainably, not just technical infrastructure is required, but also well-trained staff. The University of Graz is in charge of an OER training program for university staff as part of the collaborative project Open Education Austria Advanced (OEAA) with the aim of ensuring long-term competence growth in the use and creation of OERs. The program consists of a MOOC and a guided blended learning format that was evaluated to find out which accompanying teaching and learning concepts can best facilitate targeted competence development. The evaluation of the program shows that learning videos, self-study assignments and synchronous sessions are most useful for the learning process. The results indicate that the creation of OERs is a complex process that can be undergone more effectively in the guided program.

1 Introduction

Open Educational Resources (OERs) have increasingly become a key element in the field of education in recent years. The first definition of OER dates back to 2002 [6] and has been adapted several times over the last 20 years [7]. The benefits of OERs (5 Rs – Reuse, Retain, Revise, Remix, Redistribute) [11] show that OERs are not only freely accessible and easily adaptable, but can also increase the quality of teaching materials.

In order for OERs to be implemented sustainably at HEIs, not just the technical infrastructure is required, but above all well-trained staff who have the expertise and skills for the legally secure use and creation of OERs. The University of Graz has therefore identified central pillars within its OER policy, namely support services, qualification measures and the distribution of information material [8].

In the inter-university cooperation project Open Education Austria Advanced (OEAA), the University of Graz is responsible for the development of an OER training program for university staff with the aim of ensuring lasting competence

growth in the use and creation of OERs. This training program is based on two pillars. The first is the MOOC "Using and Creating OERs" (OER-MOOC) which is freely available under a CC BY 4.0 license for all interested users on the Austrian MOOC platform iMooX and aims to convey basic OER knowledge in a self-learning format. The second is a blended learning training course that was designed based on the MOOC, which focuses on the development of OER competencies with synchronous online meetings and individual support. On the basis of evaluation results collected at the University of Graz in the period from 3 March 2022 to 28 February 2023, this paper will show which accompanying teaching and learning concepts can facilitate targeted competence development with the help of a MOOC.

2 Pillar 1: The MOOC "Using and creating OERs"

The self-study course "Using and creating OER" [3] has been available free of charge since March, 3rd 2022 on www.iMooX.at and consists of four units.

Unit 1 gives an overview and introduction to Open Educational Resources. After that, participants learn how to search for and find OERs in unit 2 and are given an overview of the guidelines for creating OERs in unit 3. Finally, in unit 4, the participants are given the opportunity to plan their own OER project. Table 1 gives an overview of the structure of the MOOC.

Table 1: Design of the MOOC

Unit 1 – Introduction	Unit 2 – Searching and finding OERs	Unit 3 – Creating OERs	Unit 4 – My OER Project
What are OERs?	CC license models	Basic rules of OER creation	OER practice report
Experience with OERs	Sharing OERs	Combining licenses	Planning OER projects
Why use OERs?	Where to find OERs?	Legal aspects	OER practitioner
OERs and copyright	Quality of OERs	Publishing OERs	

To facilitate knowledge acquisition, four videos with corresponding transcripts are available in each unit. To accompany each video, learners receive additional

materials for more in-depth reading. For better guidance on the individual learning objectives, a mascot named "KatOER the OER cat" acts as a connecting element in the MOOC and introduces the learning objectives of the videos, summarizes the central content and draws attention to any cross-references. This combination of videos, transcripts and accompanying materials provides participants with a broad foundation for targeted knowledge acquisition in the field of using and creating Open Educational Resources.

In addition to extensive (legal) knowledge, a broad range of competences is required for the correct use and high-quality creation of OERs. Assuming a constructivist view of learning, in which knowledge is acquired independently and actively in a context of action [4], targeted competence development requires "motivation-activating learning processes" [2]. According to this, successful learning processes consist of six central characteristics, including the presence of positive emotions, the self-direction of processes, the integration of new knowledge into existing knowledge patterns, the independent participation of the learner, but also the interaction with others and the acquisition of knowledge within the framework of contextual and situational references [4].

A MOOC can only partially enable these processes. For instance, forums have the potential to support interaction of learners. However, research shows that only around one third of course participants actively take part in discussions within forums [1]. Contextual references to the learning and work environments of the participants are created in the videos and through practice-oriented accompanying material. However, practical tasks and individual coaching in regards to the assignments would be more precise ways of supporting the participants individually.

3 Pillar 2: The guided training program

In order to close these gaps, we designed a guided training program on the basis of a blended learning approach to complement the MOOC's self-learning offer within the OEAA project. The aim is to provide university staff with not only basic OER knowledge, but also specific OER application skills. Alongside the independent exploration and creation of OERs, an exchange with peers and experts is central to the program. In this way, the participants can expand their personal OER knowledge and improve their OER use and creation skills.

The guided training builds on the OER-MOOC. The participants complete this course in self-learning mode. At the same time, various assignments are to be completed, which support the application of the acquired knowledge and the targeted development of competences.

During three synchronous online-meetings, the individual challenges of the practical implementation are discussed with the participants, individual perspectives for growth are identified and open questions are answered. The final step of the training is the publication of three self-produced OERs. During this process, the participants receive extensive support and feedback on the created materials from the course leader. Figure 1 gives an overview of the guided OER training with a duration of eight weeks and a workload of 25 hours / 1 ECTS credit.
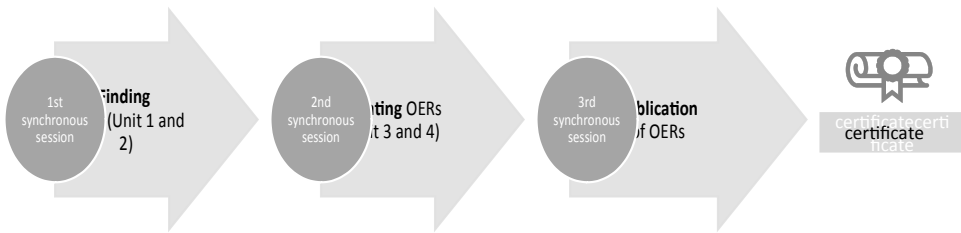

Figure 1: Process of the OER training program

By completing this training, participants achieve the following learning objectives:

- I can name and use different open licenses and their requirements and differences.

- I can find Open Educational Resources (OERs).

- I can create, revise and remix OERs.

- I can publish OERs and make them available to others.

The assessment consists of attendance at the synchronous sessions, completion of the OER-MOOC, verified by the iMooX certificate, successful completion of a total of nine assignments including revision according to the individual feedback from the course instructor, peer reviews and the correct publication of three self-created OERs.

The training is based on Schlögl [5] and the Active Blended Learning approach (ABL) by the University of Northampton [10]. This concept combines face-to-face interaction, small group teaching, problem-solving and allows to learn anywhere in the world [9]. The mix of self-learning phases, synchronous sessions, peer feedback and accompanying coaching encourages social processes and, with the help

of specific tasks, draws on the individual professional experience of the course participants. This enables a targeted acquisition of knowledge and the development of basic digital skills [10] for the use and creation of OERs.

4 Knowledge and competence development

In the period from 3 March 2022 to 28 February 2023, 407 participants successfully completed the MOOC in self-study mode, which is 44 % of all registered users. The requirement for MOOC completion is the successful participation in four quizzes with 75 % correct answers. At 44 %, the MOOC completion rate is way above average (see results in [1] – completion rate 7.6 %). However, these figures are put into perspective, as the completion of the MOOC is compulsory in the context of various OER continuing education formats, as shown by numerous forum posts in the MOOC's introduction forum [3].

In the same period, 75 people participated in the guided OER training program at the university of Graz during its four runs, 72 % of whom successfully passed the training. At the end of the last synchronous session of each run, the participants were asked to take part in an online evaluation, for the purpose of continuous improvement of the training program in line with the needs of the target group, as well as for scientific monitoring of the development process. By using six question blocks and 23 individual questions, the course participants were asked about the content, the structure and the implementation of the training. Also, they were asked about their personal evaluation of the achievement of the learning objectives. Around 63 % of the participants responded to the entire online evaluation, and 76 % answered at least some of the evaluation questions.

A central element of the survey was the question of how helpful the learning methods were for achieving the learning objectives. An overview of the results is given in Figure 2. It is evident that the completion of the assignments is regarded as a very helpful tool for achieving the learning objectives by around 94 % of participants. The materials and references as well as the instructional videos are rated as very helpful by about 90 %, followed by synchronous sessions (83 %), peer reviews (71 %) and participation in the supervised forum (69 %).

The evaluation clearly shows that the completion of work assignments, the instructional videos, the materials and references and the synchronous sessions were most frequently rated as very helpful in achieving the learning objectives. The MOOC in self-learning mode, however, provides its participants with only one part of these most important factors.

The importance of guided training is also emphasized by the findings regarding the achievement of the learning objectives. As shown in Figure 3, the participants
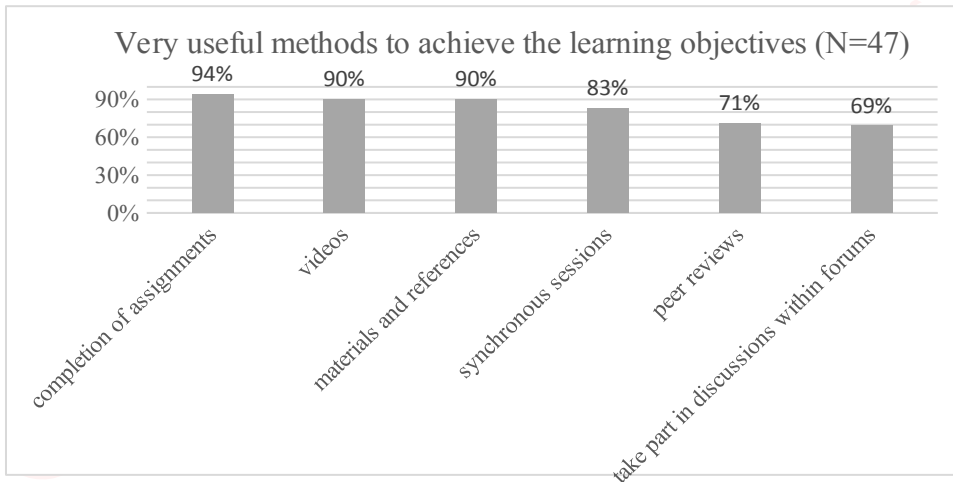
Figure 2: Usefulness of methods of learning to achieve the learning objectives

strongly agree that they have achieved the four learning objectives through the guided OER training. However, the level of agreement decreases significantly as the learning objectives become more complex.
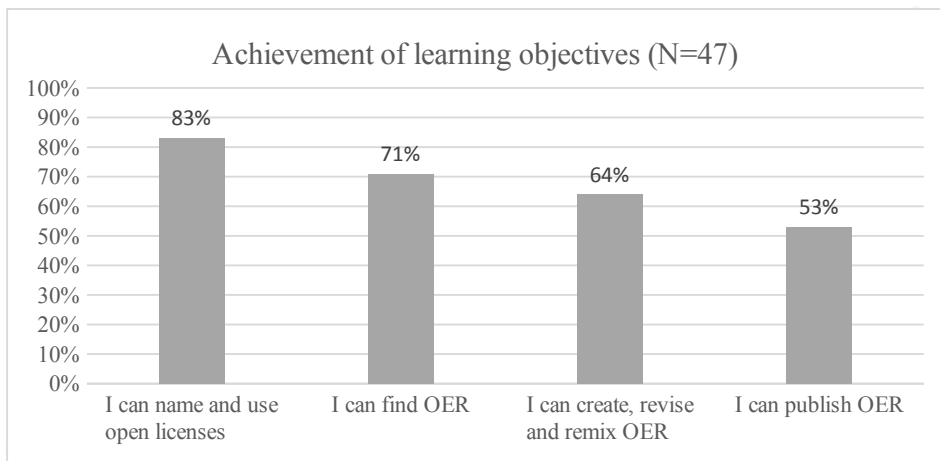

Figure 3: Achievement of learning objectives

The findings support the fact that the complexity of the topic of OER increases significantly from basic knowledge, through the use of OER, to the creation of OER, and with this the need for corresponding skills also increases. Only just over 50 % of the participants in the guided training program agreed that the learning objective for the publication of OER had been achieved. With regard to the learning objectives on basic knowledge about OER and on finding OER, almost 84 % and 71 % respectively agreed that these learning objectives had been achieved.

These results indicate that the creation of OER is a complex process that can be taught more effectively in a guided training program.

5 Conclusion

A sustainable implementation of OERs at HEIs requires a substantial training offer that provides not only basic knowledge but also expert and content-related support in the use and creation of OERs. Such support services enable sustainable competence development among university staff, which in turn has a positive impact on the quality of the materials developed.

The MOOC "Using and creating OERs" in self-learning mode is a suitable tool for presenting basic knowledge through various materials. Due to a lack of data, however, no conclusion can be drawn on whether the learning objectives have actually been achieved. The evaluation results of the guided OER training have shown, however, that the need for comprehensive teaching and learning concepts that support situational, social and self-directed learning increases with the complexity of the learning objectives.

In the future, it would be beneficial to evaluate the OER-MOOC in a more focused way in order to obtain informative data on the achievement of learning objectives through self-study courses. These data could be used to develop targeted strategies to promote knowledge and competence development for self-learning courses.

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