University Teacher Skills and Attitudes to Create and Use Open Educational Resources

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Abstract

Open Education Resources (OERs) are not a new phenomenon; however, it is still indolently used in higher education curriculum. Although it can bring new ideas for learning and teaching, motivate students, help them learn better, and prepare more attractive curriculum, the usage and development of OERs can be challenging. Using OERs in university curriculum, it is important to find out, what is the attitude of university teachers towards OER, their use and creation? What are the skills of university teachers to create and use OER? These were the main research questions of this research. In order to answer the research questions, the design-based research and semi-structured interviews were used. The preliminary results of research findings show that university teachers are not sure if they have the skills for OER development and don't feel the need to share all created resources.

Abstract in German

Open Education Resources (OERs, "Offene Bildungsressourcen") sind kein neues Phänomen; dennoch werden sie bisher in der Hochschulbildung nur zögerlich genutzt. Obgleich sie das Potenzial bergen, neue Ideen für Lernen und Lehre zu generieren, Studierende zu motivieren, sie beim Lernen zu unterstützen und Lehrinhalte attraktiver zu machen, können ihre Entwicklung und ihr Einsatz herausfordernd sein. Für die Nutzung von OERs in der Hochschullehre ist es daher wichtig, herauszufinden, welche Einstellungen Lehrende zu OERs, ihrem Gebrauch und ihrer Erstellung haben. Welche Fähigkeiten haben sie in diesem Bereich? Dies sind die leitenden Fragestellungen dieser Untersuchung. Um sie zu beantworten, wurden Design-Based Research und semi-strukturierte Interviews durchgeführt. Die vorläufigen Ergebnisse zeigen, dass Hochschullehrende unsicher sind, über die notwendigen Fähigkeiten für die Entwicklung von OERs zu verfügen und nicht das Bedürfnis verspüren, alle erstellten Materialien mit anderen zu teilen.

Keywords: open educational resources, higher education, open education, distance learning, teacher skills, attitudes

Introduction

Open educational resources (OERs) are not a new phenomenon and traditionally are described as

> *"any type of educational materials that are in the public domain or introduced with an open license. The nature of these open materials means that anyone can legally and freely copy, use, adapt and re-share them. OERs range from textbooks to curricula, syllabi, lecture notes, assignments, tests, projects, audio, video and animation".* (UNESCO, 2019).

OER use in education has been analysed from different perspectives – as possibility to open curriculum (Dalsgaard & Thestrup, 2015; Rolfe, 2017); development and integration in university curriculum (Allen & Seaman, 2014); impact on teaching or learning (Bodily, Nyland & Wiley, 2017) and students' satisfaction. However, OERs are still indolently used in higher education curriculum as teachers lack time, skills, attitudes and incentives for OER creation or search and use (Allen, & Seaman, 2014; Guo, Zhang, Bonk, & Li, 2015).

> *"Opening up education requires a change in attitudes and mindset"* (Ossiannilsson, Altinay, & Altinay, 2016; p.159).

The development of high quality OER could be seen as a tool for marketing institution and its courses (Comiskey, McCartan, & Nicholl, 2013). However, the use of OERs in university curriculum may also contribute to the reflection of educators (Elf, Ossiannilsson, Neljesjö, & Jansson, 2015) and sharing of their practices. Allen and Seaman (2014) research revealed that although university teachers indicate OER discoverability and evaluation as the main barriers while searching for and selecting OER, the discoverability rate of OER, compared to discoverability rate of traditional resources was very similar.

Wiley, Williams, DeMarte, and Hilton (2016) indicate the following challenging activities for institutions and teachers while integrating OER into university studies: time spent for searching and finding a proper OER; knowledge and use of open licenses; effective integration of OER into learning practices and university learning

management system, as this may require additional tools, plugins, software, ICT skills. Blessinger and Bliss (2016) provide the results of teacher's time for course preparation with usage of OERs textbooks: more than half of the teachers reported that they spent more time preparing course with OERs than in the past. However, despite of course preparation time, teachers see some advantages, such as OER online books are available from the first lecture, all students have access to it, and learning can start from the beginning of the class.

Trainings and systematic development of teacher skills are needed for successful OER use in university curriculum. Armellini and Nie (2013) suggest that teacher trainings should cover: identification of repositories with qualitative and subject-specific OERs; developing teacher skills for OER creation using different software and tools; practicing the skills regarding use of copyright and licensing; providing guidance on possible OER formats, size; and sharing developed OERs as good practices. However, the lack of teacher skills could be significant obstacle for OER creation. Guo, Zhang, Bonk & Li (2015) indicate 5 groups of OER development and usage barriers, stressed by university teachers from China – (a) content, (b) experience, (c) institutional, (d) interface, and (e) habit (of online learning). Besides, teacher attitude towards OER occupies a prominent place when choosing weather to use OER, while preparing curriculum.

Thus, with this research we aim to identify university teacher attitude towards OER and their skills to create and use in the curriculum. The research questions are: what is the attitude of university teachers towards OER, and their use? What are the skills of university teachers to create and use OER?

Research methodology

Qualitative research is based on induction and description of results; its purpose is to study and understand complex phenomena with their characteristics, and to present various meanings and attitudes about the investigated phenomenon from the perspective of participants (Merriam, 2002; Creswell, 2007; 2009; Flick, 2009; Žydžiūnaitė & Sabaliauskas, 2017). The lack of research on the university teacher skills and attitudes towards the use of OER, on the needs for the change of high education curriculum towards open online learning, and the use of OER in university curriculum, and focus on responding to the learning needs of digital and network society, has led to the selection of a qualitative research paradigm that helps to understand human experience, and to reveal the subjective meaning and

interpretation of instances of individual experiences without isolating them from the context. In order to answer the research questions the theory analysis and design-based research were used.

Data collection and research participants

During the first research stage a semi-structured expert interviews with three open-ended questions (about the characteristics of open online learning curriculum, its change and impact on learning process, and finally on OER impact for open online learning curriculum in HE) were used for collecting data from education experts and indicating the main areas of concern and deeper analysis of the focus for further research. The interviews were recorded with the permission of participants; and essential aspects of the interview or further questions were noted in the researcher's dairy. At this stage of the research, the questions for experts were constructed on the basis of theoretical findings and orientated towards research questions.

In this study, the selection of interviewees was used to select those who are most familiar with the research problem and can provide detailed information on needs for the change of open online learning in high education, considering skills, needed for OER creation and use, and integration into the university curriculum. The target selection of interviewees was based on the criteria:

- international expert in open and online learning;
- having at least 10-year expertise, implementing open and online learning in higher education.

The researchers interviewed 13 international experts, based on the fact that such an interview would help to obtain enough meaningful information for research, which would help ensure data saturation. The study involved 7 women and 6 men aged 25-60, with experience in the open online learning from 10 to 18 years, from 8 countries, ranging from policy level experts up to practical application teachers and researchers in universities and companies.

Based on the interview findings, a design-based research was prepared. It was started with the state of art survey, which included an ATOER scale (developed, tested and validated by Mishra, Sharma, Sharma, Singh, & Thakur, 2016) for assessing the attitude of Lithuanian teachers towards OER. This teacher attitude survey was one of the initial design-based research steps, and it was followed by OER creation (in the form of openly shared slides under the CC BY SA licence) and integration into

curriculum, all taking place and under suggested scenario, then curriculum testing and analysis of the findings. The survey including ATOER scale was used twice: first, with teachers having little experience in creating OER, and repeated with the same teachers after they've created OER. The next steps of design-based research are planned to be followed by teacher focus group discussions, student surveys, and teacher interviews on their experiences in creating and sharing OER, integrated into curriculum.

This initial state of art survey of design-based research was performed with 30 Lithuanian teachers (15 university teachers and 15 VET teachers) who filled in the survey after participation in the trainings on how to create OER using suggested OER creation platform in April 2018. From April 2018 to August 2018 the teachers created OER and integrated them into curriculum using provided scenario. The second survey on teacher attitude and skills was launched in September 2018, it included the same ATOER scale to indicate if there were any changes in teacher attitude towards OER, sharing and adaptation. Teachers were testing the curriculum (with integrated OER) from September 2018 to January 2019.

Data analysis

Qualitative data of the semi-structured interview were analysed through thematic analysis, based on the steps documented by Braun and Clark (2006; 2013) and provided with guidance in applying the six-phased method (Nowell, Norris White, & Moules, 2017): (a) Familiarizing with data; (b) Generating Initial Codes; (c) Searching for Themes; (d) Reviewing Themes; (e) Defining and Naming Themes; (f) Producing the Report.

Certain preliminary broad theme nodes were provided to describe the phenomenon of research, however, the data was essentially processed on the basis of the inductive research logic, since the underlying themes and subthemes were formed directly from the results of the empirical data. In other words, the empirical data were specified and supplemented with preliminary nodes of the themes, discovering themes from the data itself.

The study was initially guided by the principle of volunteering (Allmark, 2002; Flick, 2009; Smith, Flowers, & Larkin, 2012), an email agreement was received from the participants to participate in the interview. The investigation was confidential (no one except the researcher cannot use information provided) and anonymous – without

disclosing the identity of the participants in the investigation (Allmark 2002; Creswell, 2007; 2009; Flick, 2009; Smith, Flowers, & Larkin, 2012).

The initial teacher survey data were summarized and analysed using MS Excel to indicate state of art of teacher approach to OER, noting the tendencies and comparing the differences of VET ant university teacher approaches. The data analysis of this survey is going to be followed by statistical analysis in the second round, when the second survey results are available. The data from the second teacher survey will be analysed and used to indicate the change in teacher approach and skills for OER creation, after the experience of OER creation and integration into curriculum.

Research findings

The thematic analysis of semi-structured interviews revealed that universities are changing and they need to change –

> *"universities have to adopt to processes like accreditation" (I7) and recognition of open content (I8);*

> *"from educational perspective we need to be open to the source of changes that are going on" (I8); "universities are not organized around the needs of students" (I9).*

Experts stressed that "every change has to come from inside the educators" (I12) and the change in curriculum is important, necessary (I7) and going on (I3, I5). It was pointed that teachers and the curriculum they deliver need to change to adopt to learner needs and other processes, driven by technologies and openness (I5, I9, I11, I12, I13).

> *"As sharing is one of the key features of the digital society, the role of OER is increasing. It is important not to repeat and not to "rediscover the bike", but to use what has been found and has already been done" (I1); "Do not design new Simon. If you know exactly that the Simon already exists, just use this Simon, and say thank you to the person that you can use this…" (I5).*

OER impact was noted to be important (I3, I4, I7, I8, I11), but still not sufficient (I3, I4, I5, I9, I11, I12), or "even very very little" (I9) – "OER is slowly arriving" (I5), but it has still not reached the mainstream (I5, I10). Experts also mentioned that there are

existing forces that want to prevent from this change (I8, I2) that OER are bringing. Raising teacher awareness on OER (I10) and transforming their "way of thinking" (I11) was emphasized. The insights of different teacher patterns of using educational materials (I2, I8, I9) and attitudes towards OER (I2, I10) were also underlined by experts, leading to thorough research in the topic.

Initial Lithuanian teacher survey revealed that most teachers, selected for OER creation and development had a positive attitude towards OER and sharing, noticing that VET teachers had more positive attitude than university teachers. It was revealed that 80% of the teachers thought that "It was a pleasure if someone adopted or adapted their educational resources" and most of them (73%) agreed that sharing enhances their personal and organizational reputation. Also, it was positively assessed that sharing of educational resources increased teacher profile amongst peers and others, and that OER increased the network and sphere of influence, promoted collaboration, and sharing OER encouraged others of doing so (70% of teachers agreed with all statements). However, it was controversially assessed by university and VET teachers a responsibility of a teacher to share all their created educational resources – although generally half of the teachers agreed and the other half was not sure or disagreed, making separate analysis of university and VET teacher responses it was found that more of university teachers disagreed (47%) in sharing all their created resources than agreed (40%), while 60% of VET teachers were tend to agree (and only 13% to disagree) that it was their responsibility to share all created educational resources.

Initial Lithuanian teacher survey revealed that many teachers (37%) were not sure of what impact OER creation had upon their recognition at global level, however the other (60%) tended to think positively. Research also showed that 33% of the teachers were not aware of what were their feelings, if someone used their OER, leading to the assumption that they had not shared OER previously. The 33% of teachers were also not sure, if creation of OER is driven by student academic requirements, and generally 43% tended to agree and 23% to disagree. However, when analysing VET and university teacher opinions separately, it was noted that 40% of university teachers disagreed (40% were undecided), while 67% of VET teachers agreed (27% were undecided) that they adopted OER as this fulfilled academic requirements of their students. Some of the summarized insights and other ideas, revealing teacher attitude and skills towards OER are presented in Figure 1.
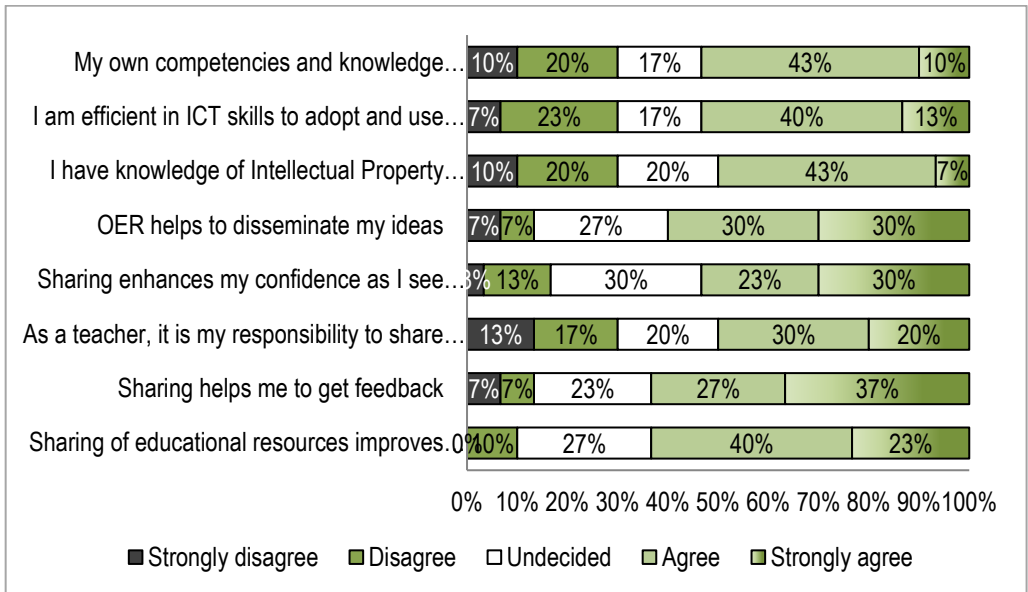
Figure 1. Attitude to OER creation and use by university teachers

To sum up, according to Lithuanian university and VET teacher survey most teachers had a positive attitude towards OER creation and sharing: it was a pleasure for them if someone adopted or adapted their educational resources; sharing enhanced their personal and organizational reputation; and they agreed that their sharing of OERs would encourage others to share. However, only half of the teachers agreed that they as teachers have to share their personally created educational resources and assessed their ICT skills to adopt and use OER as sufficient. Even less of the teachers indicated that they have knowledge about intellectual property rights and licensing of their OERs.

Conclusions

1. University teachers are not sure if they have the skills for OER development. The comparison of VET and university teacher skills showed that VET teachers tend to rate their skills higher than university teachers.

2. University and VET teachers and don't feel the need to share all created resources – only half of them feel that it is responsibility of a teacher to share all resources created by them. However, most of the teachers agree that OERs contribute to idea sharing and person's professional respect, as well as to receive feedback.

3. The research results confirm that teachers need trainings, guidance on the use of specific tools, and institutional encouragement to start creating and using OER for teaching.

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