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SUPPORTING LAW TEACHERS' IN THE DEVELOPMENT OF MOOCS*

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ABSTRACT

Modernising law and legal education are inevitable in today's society. Possible arguments for not taking such steps disappeared with the pandemic which fostered processes which were postponed or were found as not applicable. Onwards, the COVID-19 pandemic has further accelerated the existing trend toward online and hybrid learning. It uncovered new and innovative ways for students and educators to organise their teaching and learning activities and to interact in a more personal and flexible manner online. Several papers and policies on the European level, among them Digital Education Action Plan highlight the importance of developing a high-performing digital education ecosystem and higher levels of digital capacity

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of education and training systems and institutions. Still, the process of modernisation and digitalisation of law and legal education is complex and requires significant efforts and resources from all stakeholders involved. The important aspect in this process is teachers' preparedness and ability to implement digital technologies in teaching and learning, the support they need in this process as well as their training in digital skills to be able to properly use and implement digital technologies using new teaching methods and digital pedagogies. This paper discusses how to support teachers in the digitalisation of law and legal education and teachers' training in acquiring necessary digital competences. This is part of the Erasmus+ project Digital in Law Education (DIGinLaw) where one of the results is the development of 12 MOOCs on the topic of law and legal education in higher education. The aim of this paper is to reveal the significance of organizational support for teachers and the importance of developing teachers' digital skills and competences for successfully meeting the challenges of the digitalization of legal education. The paper describes the process taken to support teachers in the development of MOOCs including their training in digital skills. The results of the research – the proposed model of supporting and training teachers in MOOC design - can be applied to similar requirements for higher education teachers' support in implementing digital technologies in teaching and learning. Using the survey as a quantitative research method and in-depth semi-structured interviews as a qualitative method, the paper gives insight into teachers' readiness to use digital technologies and what kind of support and training they need to sufficiently implement digital technologies in the educational process.

***Keywords**: digital technologies, MOOC, digitally competent teachers, organized support, teachers' training, digitalisation, legal education*

1. INTRODUCTION

Digital transformation today is no longer a matter of choice - it is inevitable, necessary and unavoidable. It refers to the process that starts from the moment when the organization starts to think about the introduction of digital technologies in all areas of business and lasts until the moment of their complete integration.

Today, after the crisis caused by the COVID-19 disease pandemic and everything we have been through, it is clear that we have already taken a deep step into digital transformation, but it is important that to try to put everything together systematically, plan strategically and realize it. Digital transformation has become one of the key strategic goals of the development strategy of most higher education institutions. Onwards, the COVID-19 pandemic has further accelerated the existing trend toward online and hybrid learning. Horizons have been broadened and the consequences have begun to be dealt with, which must be faced, but also anticipated and invested in the time that is coming and which must no longer surprise us. It is important to encourage a digital culture that fosters innovation and entrepreneurship and to develop the institution's digital strategy. In addition, it is extremely important to ensure the continuous professional training of teachers so that they have digital competences for the introduction of new teaching methods, for the transition to a model in which the student's educational process

is at the centre and so that they can ensure that students acquire the competences that are needed today and tomorrow, for jobs that don't even exist yet, as well as being able to fully participate in the society of the digital age. Increased digitalization has changed the way legal services are conducted. Future lawyers ought to be competent and skilled to meet the needs of their clients, law firms and the court system. The partners of the DIGinLaw project acknowledge that the lack of specific methodology in an e-course creation and performance caused by insufficient digital competences of the HE lecturers may impede the full capacity of legal knowledge transfer in a virtual environment. Thereby, the project supports the training of educators as well as raises awareness of its significance for HE of the future in general. The process of modernisation and digitalisation of law and legal education is complex and requires significant efforts and resources from all stakeholders involved. Setting MOOCs on topics in the field of digitalization of law (cross-border dispute resolution in the digital age, consumer protection in the digital age, artificial intelligence, cryptocurrencies in international private law, etc. is one of the possibilities digital technologies bring. Online learning makes it possible for learners to take up a course without attending an educational institution. Learners get the benefit of taking up a course from their home or from any place they're comfortable. It also enables learners to get credible certifications, thereby, improving their qualifications, which, in turn, play an important role in career progression.[1] [2] MOOCs also represent a kind of novelty in the context of thematic content but also teaching methodology in higher education in the field of law.

1.1. The DIGinLaw project

The Erasmus+ project Time to Become Digital in Law - DIGinLaw [3] is a consortium of higher education institutions aware of how strongly digitalization affects society, science and the transfer of knowledge. While taking advantage of modern technologies at low environmental costs, the DIGinLaw project aims to raise awareness of digital demands in HE in law and fosters the creation of digital literacy and digital competence that is needed in the law labour market. It also aims to foster the free circulation of highly educated workers and create an open and inclusive society of legal knowledge and open access to the scientific area dealing with the effects of digitalization on law and legal education. This Erasmus+ project

1 European Commission, *European Universities Initiative Survey on the impact of COVID-19 on European Universities,* 2020, [https://erasmus-plus.ec.europa.eu/document/coronavirus-european-universities-initiative-impact-survey-results], Accessed 10 February 2023.

2 WEF, *The future of jobs*, 2020, [https://www3.weforum.org/docs/WEF_Future_of_Jobs_2020.pdf], Accessed 10 February 2023.

3 DIGinLaw project web page, [https://www.pravos.unios.hr/diginlaw/], Accessed 8 February 2023.

is coordinated by the Faculty of Law at the University of Osijek, Croatia and partners on the project are The University Court of the University of Aberdeen, UK, Universita degli Studi di Milano, Italy and the University of Zagreb University Computing Centre SRCE, Croatia.

The overall objective of the DIGinLaw project is to advance the utilization of digital technologies in higher education in law. One of the objectives of the project is to contribute to building and advancing the performance of online higher education teaching in law studies. This specific objective is assured by providing quality training on digital competences addressed to law professors and lecturers. Training would develop the digital competences of HE law teachers and lecturers at three law faculties involved and result in an advanced level of performance of online HE teaching in law. SRCE as the project partner has focused its expertise on this objective.

2. THE THEORETICAL BACKGROUND

2.1. The E-learning Centre at SRCE

The University of Zagreb University Computing Centre (SRCE) [4] is the oldest infrastructural institution of the academic and research community in the area of the application of information and communication technologies (ICT) in Croatia. SRCE is the key institution in planning, designing, constructing, and maintenance of the computing, data and information infrastructure, the e-infrastructure for the Croatian academic and research community. Furthermore, SRCE is the competence centre for information and communication technologies as well as the centre for education and support in the area of ICT application.

The focus of the E-learning Centre at SRCE (ELC) [5] is to provide accessible and sustainable support to higher education institutions, teachers and students in the use and application of new technologies in teaching and learning. The ELC is ensuring and provides a generally accessible e-learning platform and ensures joint/centralized resources required for the application of e-learning and finally, but not less importantly, the promotion and dissemination of information about e-learning.

The ELC supports users in the process of the implementation of e-learning technologies in the educational process. The team provides help to teachers in the

[4] University Computing Centre University of Zagreb. [https://www.srce.hr], Accessed 8 February 2023.

[5] E-learning Centre at the University Computing Centre University of Zagreb, [https://www.srce.hr/elc], Accessed 8 February 2023.

preparation and maintenance of e-courses (blended mode or fully online), organizes training for teaching staff in e-learning technologies and course design and supports students in the virtual environment.

The Centre is providing everyday support via the helpdesk (phone, e-mail) and consultations with teachers. In addition, there are numerous learning materials like manuals, animations, quick help, guidelines and frequently asked questions that enable users to find information in the way that best suits them. The ELC has also prepared a number of training courses and workshops for teachers. Moreover, the ELC team holds daily consultations with teachers, devoting themselves to each individual teacher and his/her e-course. Creating a positive and creative environment, informing about e-learning and its possibilities in the academic community and providing quality and systematic support to users are long-term goals of the E-learning Centre at SRCE.

Therefore, the role of the SRCE E-learning Centre in this project was to provide training for teachers and support them in the design and development of MOOCs (Massive Open Online Courses). Therefore, SRCE developed the online course titled Digital Competences of HE Teachers for Innovative Teaching Practices and organized teachers' training that will enable them to create high-standard e-learning courses in law - MOOCs. Afterwards, the ELC team provided support to teachers in the development of MOOCs and in the end the evaluation of the developed MOOCs with recommendations for their improvement.

2.2. Supporting teachers in enhanced teaching and learning

Digital technologies have become ubiquitous in all aspects of life, work and learning. [6] Today, we can hardly imagine life without the use of mobile phones and computers, we primarily search for information on the Internet, and very often, we learn by attending online courses, reading various materials and watching tutorials and animations available on the Internet. However, in the formal education system, teaching still takes place dominantly in the classroom without the use of digital technologies, or they are used only as an addition to the teaching and for the preparation of lessons.[7] Nevertheless, the use of e-learning and digital technologies in education has been present for a long time, and many teachers and educational institutions try to implement them into the educational

[6] Bates, A.W., *Teaching in a Digital Age – Third Edition*, Tony Bates Associates Ltd., Vancouver, B.C., 2021.

[7] Brooks, D.C.; McCormac, M., *EDUCAUSE: Driving Digital Transformation in Higher Education* ECAR research report, ECAR, Luisville, 2020.

process on a smaller or on larger scale. Implementation and use of digital technologies in teaching and learning in higher education have become unavoidable in modern education, primarily because of the opportunities and advantages this technology brings to education as well as its role in enabling the achievement of educational goals.[8] After two years of a pandemic that moved education online, we have different views, attitudes and experiences with digital technologies than before. The picture is more nuanced than before, as surely teachers and educational institutions will keep on using some of the digital technologies they found most effective for the educational process. However, with the increasing number of various tools and technologies, the teacher very often loses pace because he/she cannot follow the news so quickly, familiarize himself/herself with them and find the right way to integrate them into the educational process.[9] [10] Therefore, organizational support for teachers is one of the most important factors. Such organisational units follow trends and enable teachers to implement innovative technologies and tools in teaching beyond the standard. They offer regular and varied training courses to teachers and work continuously on the further development of digital learning tools.[11] The importance of organizational support to teachers in the use and implementation of digital technologies was confirmed during the pandemic, clearly indicating the importance of e-learning centres, as central specialized units to provide support to teachers and education institutions within the system. For example, the Lotus report titled National Developments in Learning and Teaching in Europe states that such centres can serve as instrumental in providing support and advising on the use of technology and pedagogy related to digitalisation, and serving as coordinators for the exchange of good practices between teachers.[12] Last, but not least, the pandemic experience learned us all how to seek help and acknowledge we need it.

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8 Brown, M., *What are the Main Trends in Online Learning? A Helicopter View of Possible Futures,* Asian Journal of Distance Education, Vol. 16, No. 2, 2022.

9 Kučina Softić, S.; Radobolja, T; Martinović, Z., *How did we support education in pandemic- role of the e-learning centre*, EDEN Digital Learning Europe Proceedings, 2022 Annual Conference Tallinn, 20-22 June 2022.

10 Brown M.; Connole G.; Beblavy, M., *Education outcomes enhanced by the use of digital technology: Re-imagining the school learning ecology*, EENEE Analytical Report No. 38, Luxemburg, 2019.

11 European Commission, *European Education and Training Expert Panel: Summary of findings and of the discussions at the 2019 Forum on the Future of Learning*, Luxemburg, 2019, [https://op.europa.eu/en/publication-detail/-/publication/b976dfa7-a6a9-11e9-9d01-01aa75ed71a1/language-en], Accessed 10 December 2022.

12 Zhang, T., *National Developments in Learning and Teaching in Europe*, European University Association, Brussels, 2022.

2.3. Teachers' training in digital competences for innovative teaching practice

New technologies bring new opportunities for teaching and learning, and in addition to being an expert in the subject field, the teacher needs to monitor the development of ICT and be acquainted with them as well as have good pedagogical background to know how to implement them in the educational process. [13] [14] The teacher is facing a great challenge; he/she is expected to be competent in using new technologies, to be able to apply them in the educational process and to introduce new teaching methods. There is increasing pressure on the teacher who is expected to have all the necessary knowledge, but no one asks whether they have it, what are the conditions in which they work when it comes to teaching and how they will acquire the necessary knowledge and competencies to fulfil all the expectations. New Digital Action Plan 2021-2027 adopted by European Commission[15] defines the enhancement of digital skills and competences for digital transformation as the strategic priority. The Action Plan also stresses the importance of training in digital skills including digital teaching methods of teachers. Therefore, teachers and educators should be empowered to adopt innovative methods.

The pandemic also enhanced the use of digital technologies, as with the lockdown and closing of campuses and physical premises of higher education institutions, teaching and learning had to move to the online environment. For many HE institutions and teachers, this was the first experience with the use of digital technologies at all or in an extensive way. During the pandemic, teachers gained significant experience in the use of digital technologies. Some are good and some are poor because of a lack of digital competences and knowledge of how to integrate them into the educational process. Also, quite often teaching and learning in the online environment during the pandemic was misused for online education, but it was mostly emergency remote teaching where traditional classroom teaching was just transferred to an online environment.[16] Nevertheless, the gained experience is

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13 Kučina Softić, S.; Odak, M.; Lasić Lazić, J., *Digitalna transformacija: Novi pristupi i izazovi u obrazovanju*, Sveučilište Sjever, Koprivnica, 2021.

14 Gaebel, M.; Zhang, T.; Stoeber, H. & M. A., *Digitally enhanced learning and teaching in European higher education institutions,* European University Association, Brussels, 2021.

15 European Commission, *Digital Education Action Plan 2021-2027: Resetting Education for Digital Age*, European Commission, Brussels, 2020, [https://education.ec.europa.eu/focus-topics/digital-education/action-plan], Accessed 10 December 2022.

16 Bond, M.; Bedenlier, S.; Marín, V.I. *et al., Emergency remote teaching in higher education: mapping the first global online semester,* Int J Educ Technol High Educ, Vol. 18, 50, 2021.

important to plan the education process not only for today but for the future as well and to adapt it to the digital age.[17] [18]

It is very difficult for teachers to expect to be innovative or teach differently from the *historical model* (the teacher is at the centre of the education process and conveys knowledge to students) unless they understand other possible ways of teaching based on theory and research. Teachers should be encouraged to think outside the box and not just use technology to replicate conditions in the classroom but instead think about how technology can be used to improve learning and "do stuff that you can't do in the classroom". Especially after emergency remote teaching prevailed in the pandemic, teachers have to be aware that it was a temporary situation and that move to online teaching and learning was not planned and designed initially for such form. Lessons learned enabled teachers and educators to gain a deeper understanding of the possibilities that digital technologies can bring to education and online education as such. It also enlightened them that moving online should be discussed and prepared more seriously, not leaving it solely to teachers to cope with it. Without organized and systematic support to teachers, they will be less eager and interested to use and implement digital technologies in the educational process, and what is even worse, they will develop a distorted image of online education, either fully online or as a hybrid mode with a large online component.

Therefore, the project intellectual output O1 has focused on the building and advancement of digital competences of higher education teachers. So, one of the first tasks is the project were to develop a training program for teachers which consisted of e-course and designed training activities. The first step was to identify participants (teachers) who will attend the training and their experience in the use of digital technologies, as well as how much do they know about MOOCs. This was done during online project meetings with project partner representatives. SRCE developed an online course titled "Digital competences of HE teachers for innovative teaching practices" which is available on the e-learning platform MoD (mod.srce.hr). The aim of the course was to raise awareness of the importance of teachers' digital competences and continuous professional development that will enable them to implement digital technologies in a proper way into teaching and learning, to provide them with guidelines on how to do it and to introduce to

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17 Župan, M., *Online Legal Education in Croatia*, in: Nottage, L.; Ibusuki, M. (eds.), Comparing Online Legal Education, Intersentia, Cambridge, 2022.

18 Kumi-Yeboah, A.; Sallar, A.W.; Kiramba, L.K.; Kim., Y., *Exploring the use of digital technologies from the perspective of diverse learners in online learning environments,* Online Learning, Vol. 24, No. 4, 2020, pp. 42-63.

them Moodle as the e-learning platform. The developed course consists of five modules and its duration is 20 hours.

Figure 1: Main page of the training course for teachers "Digital competences of HE teachers for innovative teaching practices"

Source: https://mod.srce.hr/course/view.php?id=391

In July 2021, SRCE organized training for teachers from partner institutions. Due to the pandemic, training was organized online and lasted three days. The aim of the training was to increase the digital competences of teachers from the project partners' institutions and prepare them for the development of MOOCs. One of the activities within the training was taking the tutor-led course "Digital competences of HE teachers for innovative teaching practices". During and after training teachers had assignments that they had to fulfil and which were evaluated. They were mandatory in order to receive the certificate and digital badge that they have finished the course. Upon finishing the training, teachers had the possibility for online consultation with the SRCE team. After the training, the course was adapted to be self-paced and is open to everyone.

2.3.1. Participants' feedback on the training

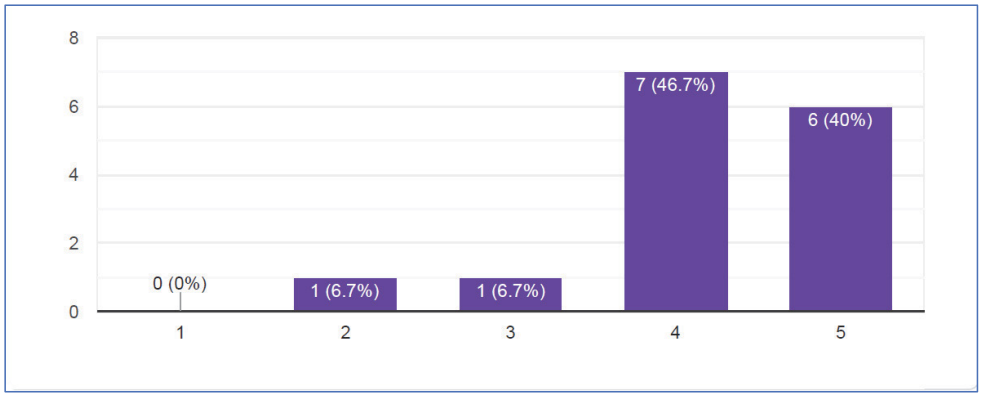
Fifteen participants took the training and provided their feedback in a survey prepared by the project coordinator. Quantitative research based on a survey was prepared. Likert scale was used in questions, with a scale from 1 to 5 with 5 as the highest and 1 as the lowest grade.

Based on the feedback, participants are satisfied with the training and it has reached its goal. Participants graded clearness of the objectives of the event, with an equal percentage of (46, 7%) for grade 4 and for grade 5, in total 93,4%. In addition, 86, 7 % of participants said that the objectives of the event have been met rating them with a grade of 4 or 5. The same percentage (86, 7%) was received in the question on how was the information during training presented as well as on the question on the clearness of the support materials prepared for the training.

Participants indicated that the training improved:

- their knowledge - 66,7% of them gave the grade 5 and 33,3% gave the grade 4;
- their digital skills – 53,3% gave a grade of 5, 26,7% gave a grade of 4 and 20% gave a grade 3
- their pedagogical and methodological skills – 40% gave a grade of 5, 46,7% gave a grade of 4 and 13,3% gave a grade of 3

Figure 2: Answers to the question "What is your overall evaluation of the training?" (Scale from 1 to 5 with 5 as the highest and 1 as the lowest grade)



Source: Author's research

The majority of participants (86, 7%) evaluated the training with grades 4 and 5, which indicates that the training reached its goal.

2.4. Supporting teachers in MOOC development

During MOOC development, teachers had the continuous support of the SRCE ELC team.

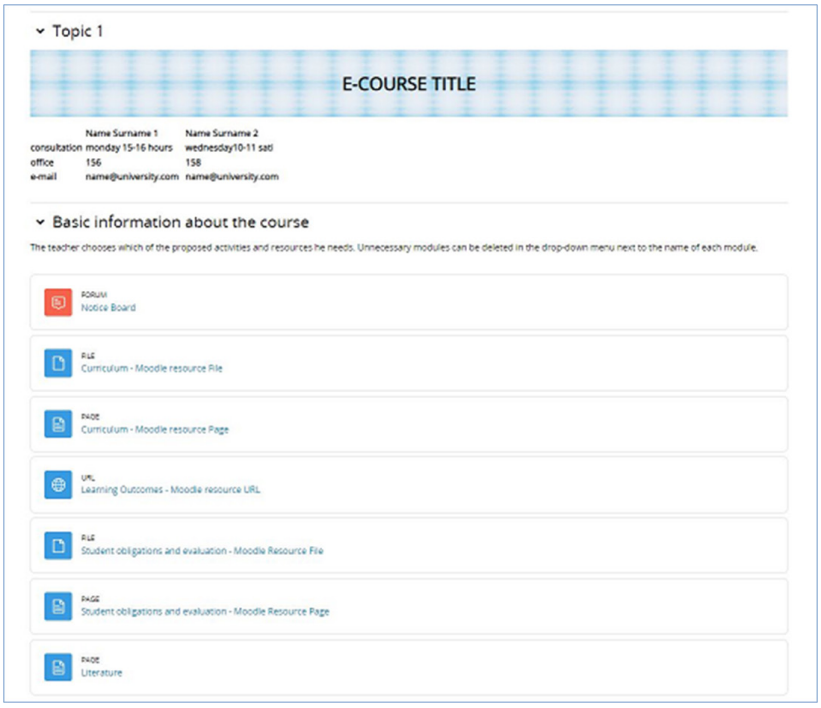
The support was organized through:

- continuous consultations
- designed Course Development Form
- designed Template for MOOC design
- opening of the e-course for MOOC development, enrolment of teachers
- evaluation of the developed MOOC with recommendations for improvement.

In the Course Development Form, teachers will describe the aim of the course and how it will be organized and the ELC team provided feedback on it as well. This helped teachers in the preparation of the MOOC design.

The ELC team prepared a Template for the MOOC design, which can be integrated into an empty online environment to help teachers to start with MOOC development.

Figure 3: Template for MOOC design



MOOCs are developed on the e-learning platform based on Moodle (mod.srce.hr) which is maintained by the ELC team. Therefore, the ELC team provided support in the opening of the MOOCs, enrolling the teachers into the course and in technical details related to the use of Moodle. Support was also provided on the design of the MOOC based on the course development forms. The ELC organized as well several group consultations on a defined topic.

During the process of the MOOC development, the ELC team provided support and help when needed. Upon finalisation of their MOOC, teachers reported it to the ELC team who then made an evaluation and provided feedback. Feedback consisted of technical parts related to the proper use of resources and activities in Moodle, but also on MOOC design- choice of the teaching methods, how the digital learning materials have been presented, defined learning outcomes and assessment. When teachers improved their MOOCs, the SRCE team provided a second round of feedback.

3. METHODOLOGY, RESULTS AND DISCUSSION

3.1. Research method

SRCE team conducted in September 2022 qualitative research with teachers from partner institutions who are developing MOOCs, with the aim to get their feedback on the experience of the MOOCs preparation and development. This research is built on the work done in IO1 in the project and relates on the overall topic of digitalization of legal education and digitalization of law. In parallel with the research, the SRCE team evaluated the developed MOOCs.

The research was conducted in the following way:

- literature review
- short introductory survey
- interview with teachers from partner institutions (main method)

As a research method, qualitative research was used with semi-structured interviews.[19] [20] Each interview consisted of two parts; the first part was a short survey with questions and the second part semi-structured interview. In addition, the SRCE team did a literature review related to teaching and learning during the pandemic. The received feedback will enable the SRCE team to fine-tune the

[19] Creswell, J. W., *Research design: Qualitative, quantitative, and mixed methods approaches*, 2nd ed., Sage, 2011.

[20] Merriam, S. B., *Qualitative Research: A Guide to Design and Implementation,* Jossey-Bass, 2009.

designed training of teachers and support so it can be used as a model for similar scenarios.

Research hypotheses are:

- Training and support provided to teachers by the SRCE ELC team were enough for teachers to be able to design their first MOOC
- Based on gained experience in the development of the first MOOC, teachers are more open to using digital technologies in their teaching.

The first part of the research was a short survey consisting of questions related to the demographic part and teachers' digital competences and consisted of seven questions.

The second part was a semi-structured interview starting with the context and the profile of participants and then questions related to the following issues. The 17 questions in total:

- [Attitudes] to identify and analyse what participants think about the implementation of e-learning in the educational process and how they feel about MOOCs.
  - What is your attitude towards the use of e-learning in Law subjects?
  - Have you yourself attended any MOOC? If yes, how do you find it? If not, why not?
  - What is your attitude towards developing MOOC in the DIGinLaw project? How did you perceive this task (easy, difficult, unrealistic...)?

- [Adaptability] To identify and analyse the kind of adjustments and the degree of flexibility teachers need to adapt to new circumstances and work in an online environment, especially those teachers who had no prior experience in e-learning and MOOCs.
  - How did you prepare for the development of the MOOC?
  - Was your previous experience in teaching and use of digital technologies enough to start with the preparation and development of MOOC?
  - How much did you rely on support in the preparation of MOOC? What kind of support did you need? Technical, in learning design, in video preparation, pedagogical....
  - How did you prepare learning materials for MOOC? used existing ones, adapted existing ones or prepared new ones

- [Advantages and disadvantages] To identify and analyse the reasons expressed by teachers in the case they foresee further use (or not) of e-learning and available support.
    - Based on your experience in the use of digital technologies and e-learning so far, what would you identify as advantages and as disadvantages?
    - Now when you have developed MOOC, what advantages/disadvantages do you see in such a way of teaching? Would you copy this experience and way of teaching and learning to other courses?
    - Do you find your digital skills enough for the preparation of MOOCs and e-courses? Do you think that teachers' professional development in digital skills should be compulsory?
    - How important is support to teachers in the use of e-learning and new teaching methods? How should it be organized?
    - Would you recommend the use of e-learning and the development of MOOCs to other colleagues?

The target group of research are teachers who participated in the training organized by SRCE and are developing MOOCs within the DIGinLaw project. Six teachers participated in the research. They were from the University of Osijek (3 teachers), the University of Milan (2 teachers) and the University of Aberdeen (1 teacher).

Interviews were conducted online using SRCE videoconferencing system and recorded. Interviews lasted up to one hour. Before the interview, participants gave consent for participation in the research and for the recording of the interviews. The interviewee and interviewer signed the consent. The data were collected and analysed by the authors of the research and were stored on the SRCE server. Only authorized persons in SRCE have access to data. All received data during the interview were anonymised in the analysis and presentation of research results.

The obtained data (quantitative and qualitative (narrative analysis)) were tabulated in a Microsoft Excel (MS Excel) file. The processing of the data obtained from the research was carried out using MS Excel software.

3.2. Research results

Participants were five females and one male in the range of 31 to 60 years of age. Five of them have been teaching for more than 11 years and one for up to 10 years.

Teachers participating in the research already had some experience with online teaching and learning, which was gained mostly during the pandemic time and was mostly in the use of videoconferencing systems. None of the participants had experience with the development of MOOC before. The design of the MOOC in the DIGinLaw project was the first MOOC they were developing. Some of the teachers had knowledge of what MOOCs look like as they have attended some.

In a question about how they assess their digital competences for teaching in higher education one participant graded himself A2, two of them graded themselves B1 and three B2 on a scale from A1 to C2 with A1 being the lowest and C2 the highest level (Table 1). Levels A1 and A2 refer to the beginning of the use of technology in some areas and awareness of its potential in improving pedagogical and professional practice. Levels B1 and B2 refer to the application of digital technologies in different contexts and in different ways.

Table 1: Teachers' self-assessment of digital competences for teaching in higher education

	Levels					
Participants	A1	A2	B1	B2	C1	C2
P1		X				
P2			X			
P3				X		
P4			X			
P5				X		
P6				X		

Source: Authors research

Half of the participants (n=3) stated that they are quite sure about which e-learning tools and technologies to use in class, while others state that they use some e-learning tools and technologies for teaching, but are not sure how to choose the most appropriate ones. Four participants in this research stated that they have very good and good knowledge of the application of e-learning technologies, but two of them stated that their knowledge about the application of e-learning technologies is poor.

In the survey on higher education teachers and the pandemic of COVID-19 done by the Agency for Science and Higher Education, University Computing Centre and University of Rijeka in 2021, the results are very similar.[21] Research results showed that 87% of teachers find themselves to have good or very good knowl-

[21] Agencija za znanost i visoko obrazovanje, Sveučilišni računski centar Sveučilišta u Zagrebu, Sveučilište u Rijeci, *Visokoškolski nastavnici i pandemija: akademski i pshiološki izazovi*, Zagreb, 2021.

edge of the application of e-learning technologies. Taking into relation research results by Kučina Softić [22] where 69, 3% of teachers at the beginning of 2020 considered themselves to have good and very good knowledge of the ICT and e-learning application; the percentage in 2021 is higher and can be explained by teachers' gained experience during the pandemic. Looking into the research results done in higher education in Montenegro in 2021 [23] it can be seen that teachers' digital literacy significantly influenced the success of their online teaching ability during the pandemic. A similar conclusion can be reached in the research conducted at the University North [24], which shows that teachers who find themselves to have good knowledge of e-learning application in the educational process are more eager to have an e-learning component in their courses going to the hybrid model or fully online as well.

In the qualitative part of the interview, participants answered the following questions related to the context and profile of participants:

1. *Did you use digital technologies in your teaching during the pandemic? Which technologies did you use?*

All teachers used digital technologies in their teaching during the pandemic. The most used technologies are MS Teams and Zoom, PowerPoint presentations and e-learning platforms Moodle and Blackboard.

2. *Did you stream live your lectures during pandemic to reproduce face-to-face classroom lectures? Did you change anything in preparation or delivery of lectures online besides that they were now online?*

During the pandemic, the four participants (P1, P2, P4, P5) organized their lectures online using video conferencing tools. Most of them (P1, P4, P5) realised that during online lectures, it is important to engage the students, and they began to include group work and other tasks that required students' active participation in online lectures. Some teachers (P2, P3) developed learning materials for an online environment and some (P6) prepared short podcasts.

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22 Kučina Softić, S., *Digitalne kompetencije nastavnika za primjenu e-učenja u visokom obrazovanju*, Zagreb, 2020, doctoral thesis.

23 Kavarić, M.; Kavarić, A.; Djokovic, R., *Challenges in online teaching during COVID-19 pandemic: Higher education survey in Montenegro*, Innovations in Education and Teaching International, 2021.

24 Kučina Softić, S.; Lasić Lazić, J.; Tropša, V., *Analiza ankete o stavu nastavnika prema tehnologijama e-učenja u visokom obrazovanju te koje digitalne kompetencije su im potrebne kako bi na kvalitetan način primijenili e-učenje u obrazovnom procesu*, Sveučilište Sjever, Koprivnica, 2022.

One participant (P3) explained how he/she had to change teaching method in an online environment after realizing that the traditional form of teaching was not adequate in an online environment:

„I live streamed and I had combination; so some of my lectures were like classic lectures in the beginning, but later on I had a combination with Moodle. And I was then creating different materials for students so they can learn on their own or follow up on my lectures. So, I started changing the teaching methodology. But at first, I was just speaking to the camera for three hours."

3. *How did you find out which digital technologies to use and did you have any support in learning how to use them?*

When the pandemic started, most of the participants (n=4; P1, P4, P5, P6) received a list of recommended technologies for online teaching and learning at their institutions. Some of them also had support from the University's IT department and had organized training in the use of digital technologies. One participant taught himself/herself how to use the recommended technologies, and two participants researched on their own which technologies would be adequate to use in class, with some help from their colleagues. After his/her own research, one participant subsequently received instructions from the university as well as provided professional assistance.

4. *Do you have an e-course today? Is this an addition to classroom teaching or do you use a hybrid model or a fully online one?*

Half of the participants (n=3) in the research have an e-course today in the hybrid form, while others do not have an e-course nevertheless they designed the MOOC.

Attitudes

1. *What is your attitude towards the use of e-learning in Law subjects?*

Four participants have a positive attitude towards the use of digital technologies in Law subjects. They believe that e-learning tools are extremely useful and suitable for some teaching activities. One participant (P3) pointed out that traditional teaching methods are no longer suitable for today's students and that the interaction and engagement of students in classes can be improved with the use of digital technologies and an online learning environment:

„I think that it can be very useful. It can lead to the transformation of the learning methods, which are not so adequate for today's students. The traditional way of lecturing, especially at Law schools where we're having 3 to 4 hours of only lectures in the classroom can't be successful in the means of having the attention of the students for the whole time. The lectures need to be interactive and with the participation of the students. I think that online environment can contribute to that."

Two participants (P3, P4) are still reluctant regarding the use of e-learning in Law courses. They find that e-learning is not applicable in all fields of Law and all domains of higher education.

2. *Have you yourself attended any MOOC? If yes, how did you find it? If not, why not?*

Half of the participants(n=3) did not have any experience with MOOCs as they did not find time to attend them. Another half of the participants have enrolled on some MOOCs, some of them (P3, P4) just because of the project to get an idea of what a MOOC should look like. Only one participant actively participated in some MOOCs and he/she liked the flexibility of such courses.

3. *What is your attitude towards developing MOOC in the DIGinLaw project? How did you perceive this task (easy, difficult, unrealistic,..)?*

Three participants had some big concerns before starting MOOC development as they did not have enough knowledge and experience about it and they knew that the process would be rather complex and demanding. The process of MOOC development itself had shown them to be reachable in the end. They learned a lot and they reconsidered their teaching methods. In the end, they enjoyed the whole process.

One of the participants (P4) pointed out that in online teaching and learning, he/she misses the social element through which teachers get feedback about his/her teaching.

„It was a challenge. It made me think about teaching in different way. It made me think more about the outcome – what I wanted the students to learn and to think about this much more than I do in general. When I teach in class I heavily rely on the reactions of the students - looking at their faces and change or come back to an idea if I have the feeling that they are not understanding or giving an example or moving faster if I realised that they are confident with the subject."

The other three participants have a positive opinion about MOOC development and found some processes quite realistic. During MOOC development, they found that some steps in the MOOC development are harder than they thought,

and some are easier, but in the end reachable. They have also pointed out that it was all new for them, and that they have a positive view of the process.

Adaptability

1. *How did you prepare for the development of the MOOC?*

All participants find that the organized training they had before the MOOC development was a good starting point. Five participants first developed all learning material, and then with the support of their colleagues and SRCE and the available online course "Digital competences of HE teachers for innovative teaching practices" started to develop the MOOCs. After that, they worked on MOOC improvement to make it self-paced. Only one participant (P2) tried to visualise and develop a structure of his/hers MOOC before putting learning material into the course and adapting it to be self-paced. After developing the course structure, the next step was putting learning materials into an online environment.

2. *Was your previous experience in teaching and use of digital technologies enough to start with the preparation and development of MOOCs?*

Four participants stated that their previous experience with teaching and the use of digital technologies was not enough to prepare and develop MOOCs. Two participants (P1, P2) find their previous experience in combination with training about basics in Moodle (organized by the SRCE team) was enough for the preparation and development of MOOCs.

3. *How much did you rely on support in the preparation of MOOC? What kind of support did you need? Technical, learning design, video preparation, pedagogical,…?*

All participants stated that they need some kind of support in MOOC development, some needed technical support in the use of Moodle and some pedagogical support in defining teaching methods. Some have relied on the support of their colleagues. All participants have prepared learning materials on their own.

4. *How did you prepare learning materials for MOOC? used existing ones, prepared new ones?*

All participants have developed new materials for MOOCs, and one (P2) has used some existing learning materials available in free access (open educational resources).

Advantages and disadvantages

1. *Based on your experience in the use of digital technologies and e-learning so far, can you identify some advantages and disadvantages?*

Participants recognize that digital technologies and e-learning can bring advantages to education, such as flexibility in the learning process; students have grown up with new technologies and use them very well; better student engagement in the teaching and learning process; learning materials are constantly available to students. One participant (P1) also focused on the advantages that digital technologies bring to teachers: the teacher can teach from a remote location, student evaluation is much faster and more effective; the system is more precise, and the discussion in class is better.

Teachers singled out as the main disadvantage of digital technologies and the e-learning time required to learn how to work with them, the lack of social aspects in online classes (students disconnect and do not participate), lack of social contact and difficulty to assess students' knowledge online.

2. *Now that you have developed MOOC, what advantages/disadvantages do you see in such a way of teaching? Would you copy this experience and way of teaching and learning to other courses?*

The teachers participating in the survey see as advantages of MOOCs that students can better organize their own learning, that they are given more autonomy; learning takes place all the time (not subject to other influences) and is accessible to everyone. Some disadvantages that the participants mentioned were hacker attacks, and lack of social contact.

Most of the participants would use this type of teaching in their own e-courses. One participant (P1) pointed out that he/she likes this way of teaching because it is more efficient for the teacher in the long term, and the students are provided with a better quality of education:

„Yes, of course, I would. This way of teaching requires you to prepare much more, so in the preparation phase you have to devote much more time and energy but then once you have that all set up, the actual teaching is much easier and you have to put in a lot less energy than in classical teaching. In a long term, this is easier for teachers and I think students get more quality."

3. *Do you find your digital skills enough for the preparation of MOOCs and e-courses? Do you think that teachers' professional development in digital skills should be compulsory?*

Three participants found their digital skills sufficient for the development of MOOC and e-courses, and they improved them working on this project. Two participants (P1, P2) stated that they attended some courses that helped them when creating MOOCs, but also that the key to everything is the constant use of technology because the acquired knowledge is forgotten if not used. Most of the participants (n=5) believe that professional development in digital skills must be mandatory.

4. *How important is support to teachers in the use of e-learning and new teaching methods? How should it be organized?*

All participants find that support for teachers in using of e-learning and new teaching methods is essential. They pointed out that universities and faculties must provide such support to teachers in the form of workshops, courses and consultations. One participant (P3) also emphasized the importance of personal motivation in the whole process:

„*Of course, they should not be alone, particularly those that are inexperienced. Teachers must be motivated and they must have some initial training but after that, they have to try on their own. Because the content you want to create is something that you have in mind and you know why certain sentence or idea or knowledge is important and you know how to make it compulsory for student or interesting; so it's something that can't be taught or supported. You need support from the beginning and you need constant support about methodologies, but you have to try. So it's a process that really is dependent on the motivation of each teacher."*

5. *Would you recommend the use of e-learning and the development of MOOCs to other colleagues?*

All participants would recommend the use of e-learning and the creation of MOOCs to their colleagues. Additionally, one participant (P6) expressed the opinion that hybrid and online classes are the future of education:

„Yes, I would definitely recommend that. I think it's an excellent experience and it really increases our capabilities as teachers in higher education and I think it's good for the students, it's good for us as teachers because I think that's the future of education. I know students still like face-to-face elements but I think that some sort of hybrid learning is probably where the future will be going."

3.3. Discussion and concluding remarks

This paper outlines the example of providing support to teachers in the development of MOOCs. Support to Law teachers in the development of MOOCs was organized within the Erasmus+ project DIGinLaw.

Although without experience in the design of MOOCs and even without knowing how a MOOC should look like, Law teachers participating in the DIGinLaw project were able to design successfully a MOOC with the proper training and support. Training and support in this project were organized in the following way:

- identification of participants (teachers) and setting of the training strategy
- training adapted to participants (tailor-made)
- preparation of the Course Design Form (to help participants recognize all parts of course design)
- preparation of a Template on MOOC design
- providing continuous support to participants in course development (consultations one on one, and consultations for a group of participants) on technical issues and on learning design
- evaluation of the designed courses with recommendations for improvements
- final evaluation of MOOCs.

In order to verify the proposed training programme and get feedback from teachers about their experience with MOOC development, the E-learning Centre team conducted research. As the research method, semi-structured interviews were chosen. The interviews were done with teachers participating in the project who volunteered to participate in the research.

The proposed hypothesis that training and support provided to teachers by the SRCE ELC team was enough for teachers to be able to design their first MOOC has been confirmed in the research.

The second hypothesis has been also verified in the research. Most teachers are more open to the use of digital technologies in teaching and recognize the benefits digital technologies can bring to the educational process.

The research results showed the importance of support to teachers in the process of designing and developing MOOCs. No less important is creating a positive environment in which they work so that they are motivated to foster excellence in teaching and use of digital technologies to improve the quality of the educational process. Teachers' digital competences in ICT and e-learning are crucial to enable them to choose the right digital technologies for purpose of their teaching and know how to integrate them into the educational process. User support is one of the important factors in process of the implementation of ICT and e-learning technologies into the educational process. Knowledge of working with ICT and e-learning technologies is not enough. Lack of support and training in new pedagogical methods and technologies can particularly affect teachers who do not feel

comfortable with them.[25] [26] [27] It is, therefore, necessary to provide teachers with training to gain knowledge on how to improve their pedagogical practice, how to replace traditional teaching and incorporate new educational models that place students at the centre of the educational process.[28] An important factor is an available infrastructure in terms of the availability of e-learning tools and technologies, IT support and stable internet connection According to this, it can be concluded that the skills and competencies of teachers, especially competencies related to ICT and pedagogical competencies, are necessary for the adoption of e-learning.[29] Results from research titled Higher education teachers and pandemic: academic and psychological challenges done in 2021 by the Agency for Higher Education and Science [30] on a sample of 1204 teachers show that support is very important in preparation and conducting online teaching and learning. Support in the preparation and development of e-courses is considered extremely important and important to 78% of teachers, and 76% of teachers need support related to pedagogy and teaching methods. Comparing these results to those of the present research, we can see a correlation. Institutions that have successfully deployed new learning technologies provided technical support and training for students and guidance for faculty on how to adapt their course content and delivery.[31]

Experience gained during the pandemic certainly influenced teachers' readiness to use digital technologies and to develop MOOCs. Although finding the design of MOOC challenging at the beginning, most of the participants, in the end, were satisfied with the results, knowledge and experience they gained.

The SRCE ELC has a long time of experience in supporting teachers in the design and development of e-courses and providing training for teachers, nevertheless, this was a new and exciting experience for them as well. Working with teachers

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25 Kučina Softić, S., *Teachers' digital competences as a key factor for the digital transformation of education*, *Advances in Online Education: A Peer-Reviewed Journal*, Vol. 1, No. 1, 2022, pp. 75-86.

26 Buabeng-Andoh, C., *Factors influencing teacher's adoption and integration of information and communication technology into teaching: a review of the literature,* IJEDICT, Vol. 8, No. 1, 2021, pp. 136-155.

27 Mahdizadeh, M.; Biemans, H.; Mulder, M., *Determining factors of the use of e-learning environments by university teachers*, Computers& Education, Vol. 51, No. 1, 2008, pp. 142-154.

28 Bennett, S.; Lockyer, L.; Agostinho, S., *Towards sustainable technology-enhanced innovation in higher education: Advancing learning design by understanding and supporting teacher design practice,* British Journal of Educational Technology; Vol. 49, No. 6, 2018, pp. 1014-1026.

29 Jokiaho, A.; May, B.; Specht, M. S. S., *Barriers to using E-learning in an Advanced Way,* International Journal of Advanced Corporate Learning, Vol. 11, No. 1, 2018, pp. 17-22.

30 Agencija za znanost i visoko obrazovanje, Sveučilišni računski centar Sveučilišta u Zagrebu, Sveučilište u Rijeci, *Visokoškolski nastavnici i pandemija: akademski i pshiološki izazovi*, Zagreb, 2021.

31 Brasca, C., Marya, V., Charag, K., Owen K., Sirois, J., Ziade, D., *How technology is shaping learning in higher education,* McKinsey&Company, 2022, [https://www.mckinsey.com/industries/education/our-insights/how-technology-is-shaping-learning-in-higher-education], Accessed 20 February 2023.

from different universities and from different countries provided new and important insight into the needs of teachers when using digital technologies to adapt education to the digital age.

The presented model of teachers' training and support in the use of digital technologies to develop MOOCs can be adapted to similar situations. The online course "Digital competences of HE teachers for innovative teaching practices" (https://mod.srce.hr/course/view.php?id=391) is open to everyone and is open access and can be used for further training of teachers in digital technologies.

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