

CHALLENGES OF RAPID TRANSITION TO ONLINE EDUCATION - EVIDENCE FROM SIX EUROPEAN COUNTRIES

Elena Buzan^{1,2}, Olga Dębicka³, Lorena Dadić Fruk⁴, Laura Iacolina¹, Jelena Dorčić⁴,
Jelena Mušanović⁴, Helga Maškarin Ribarić⁴, Felicita Urzi¹

¹University of Primorska, Faculty of Mathematics, Natural Sciences and Information Technologies,
Glagoljaska 8, SI-6000 Koper, Slovenia

²Faculty of Environmental Protection, Environmental Protection College, Trg Mladosti 7, 3320
Velenje, Slovenia

³University of Gdańsk, Faculty of Economics, Armii Krajowej 119/121, 81-824 Sopot, Poland

⁴University of Rijeka, Faculty of Tourism and Hospitality Management, Ika, Primorska 46, P. O. Box
97, 51410 Opatija, Croatia

Abstract

The COVID-19 pandemic situation has had a significant impact on the regular delivery of education in the academic community. High Education Institutions (HEI) around the world were forced to transform their teaching systems into online type almost overnight. The challenge was to provide education with no previous experience and competences designed for the circumstances created by the pandemic. In such a critical time for our society, access to education has evolved, more than ever. The development of digital competence in the area of online learning, including teaching at the international level resulting from increasing mobility of students and academics, should be based on the identification of needs and problems arising in this area. On the other hand, the current situation with remote teaching and restrictions on traveling, offers the universities possibility for providing new teaching modules online, that can be attended remotely, even in the future after the pandemic. Now it is time to identify challenges and problems that occurred during the transition to online teaching, draw conclusions and share the best solutions to inspire good practices. The survey and interview analyses conducted in six European countries within the Erasmus+ project "Innovative competence in online higher education" (InCompEdu) allow conclusions to be drawn on the factors that may influence the success of online courses. This, in turn, will allow to identify key elements that should be included in online curricula, as well as the methods to be used.

Keywords: online education, challenges, transition to hybrid teaching, best practices, IT support

1. INTRODUCTION

Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2), better known as COVID-19 disease [WHO, 2020], has greatly changed teaching and learning in higher education institutions (HEI) worldwide. The transition to online teaching and learning presented a significant challenge to higher education, particularly given the emergency nature of the transition and the extremely tight timeframe available to university staff to make major changes to their courses [Aristovnik et al., 2020].

There are some technology-related benefits of online learning, such as accessibility, affordability, and flexibility [Armstrong-Mensah et al. 2020; Dhawan 2020], but the unexpected shift from face-to-face to online education required a relatively rapid and unplanned adjustment from the universities, with varying degrees of preparedness to use the online education platforms and tools from both academic staff and students [Armstrong-Mensah et al. 2020; Filho et al. 2021]. The study experiences are an integral part of students' daily lives and have been directly affected by various challenges related to online education [Barrot et al. 2021]. Although there are positive examples, like the one showing the successful speedy transition to the online model of education in a study in Georgia performed on 950 students [Basilaia & Kvavadze 2020], some others highlight various problematic aspects. For example, several recent studies that have looked at the impact of the pandemic on student learning show that

students reported increased workload [Aristovnik et al. 2020; Armstrong-Mensah et al. 2020; Al-Kumaim et al. 2021]; and academic burnout [de la Fuente et al. 2021] during the transition to online education. An additional problem observed is that, as the duration of online learning increases during the two-year retention period, students' motivation to learn decreases, which became one of the major concerns. This decrease of motivation reflects on decreased student engagement, which in turn can translate into poorer academic performance [Garcia-Martinez et al. 2021].

However, students were not the only one facing challenges. While Universities that were already offering on-line education before the pandemic had a head start and transitioned quite smoothly, those that were mostly focused on in-person activities before COVID-19 forced them otherwise had to deal with pedagogical and technical aspects that they were often not prepared for [Souleles et al. 2020, Bacon & Peacock 2021]. This proved to be quite demanding for the teachers that quickly had to adapt their course content to a different medium and face old challenges made new by the transition (e.g., students' engagement) but also new ones connected to the quality of the internet connection, digital proficiency (theirs but also their students') and often lack or shortage of equipment [Ferri et al. 2020, Henriksen et al. 2020]. Such transition was particularly difficult for STEM disciplines that normally require hands-on experience and practical activities for the professional development of students [e.g., anatomy, Bauler et al. 2022; ecology, Bacon & Peacock 2021].

The purpose of this article is to present the results of an online survey that targeted teachers from different countries and disciplines who experienced the sudden transition forced by the pandemic. In particular, we wanted to identify the challenges created by the emergency transition, which solutions were found, and how the teaching practices have developed during the pandemic.

2. METHODOLOGY OF SURVEY

The questionnaire was compiled in English using Webropol survey and reporting tool. The respondents could answer the open questions either in English or their own language. The survey was opened from 25 May 2021 to 25 October 2021. The link to the questionnaire was sent to academic teachers in the InCompEdu partner universities, that are University of Gdańsk in Poland, University of Rijeka in Croatia, University of Primorska in Slovenia, University of Alba Julia in Romania, University of Roma Tor Vergata in Italy, University of Turku in Finland, and also to teachers in universities and research institutes in the project partners' countries. Several channels were used to distribute the questionnaire, including intranet and general contacts in the websites of the universities, direct e-mails to teachers and the contact persons in faculties, departments and open universities. Social media channels were additionally used to invite responders. Partners sent several reminders to gather the responses. The number of completed questionnaires was 525 (see Table 1). Each partner analysed the results from their own country, summarised the answers to the open-ended questions and translated the replies given in the local language into English.

Country	No	In %
Croatia	102	19%
Finland	75	14%
Italy	57	11%
Poland	144	27%
Romania	67	13%
Slovenia	80	15%

Table 1. Number of replies per country

Source: InCompEdu Deliverable 1. *Report on identified challenges and problems that occurred during the transition to online teaching mode in the COVID-19 pandemic period*,
<https://incompedu.ug.edu.pl/>

The majority of the respondents, 72%, hold an established or permanent position at the university (Table 2), working mostly at the faculty of economics or commerce (21% of the respondents), followed by engineering and humanities (both 14%). Other disciplines represented in the survey responses were: architecture, landscape architecture, geography, mathematics, economics and finance, healthcare sciences, psychology, organizational psychology, national philology and language learning, philology, computer science, logistics, arts, dentistry, chemistry and chemical technology, veterinary, open university and in-service training.

Country	Early career	Intermediate/ temporary position	Established/permanent position
Croatia	28%	20%	52%
Finland	4%	19%	77%
Italy	0%	2%	98%
Poland	14%	12%	74%
Romania	6%	16%	78%
Slovenia	15%	21%	64%
TOTAL	13%	15%	72%

Table 2. Respondents' position at the University

Source: InCompEdu Deliverable 1. *Report on identified challenges and problems that occurred during the transition to online teaching mode in the COVID-19 pandemic period*

3. ONLINE TEACHING BEFORE COVID-19 PANDEMIC

Even in the pre-pandemic period, it was widely recognised that the traditional higher education model needed to change to better adapt to new generations using technology in their daily lives. However, the results of this study conducted in six European countries, show that online teaching was implemented only sporadically before the pandemic. As can be seen in Figure 1, Italy (79%), Slovenia (74%) and Poland (69%) were the countries with the lowest percentage of online teaching before the pandemic. The situation was slightly different in the other countries surveyed, where respondents reported the highest proportion of online teaching - Finland (55%), followed by Romania (41%) and Croatia (37%).

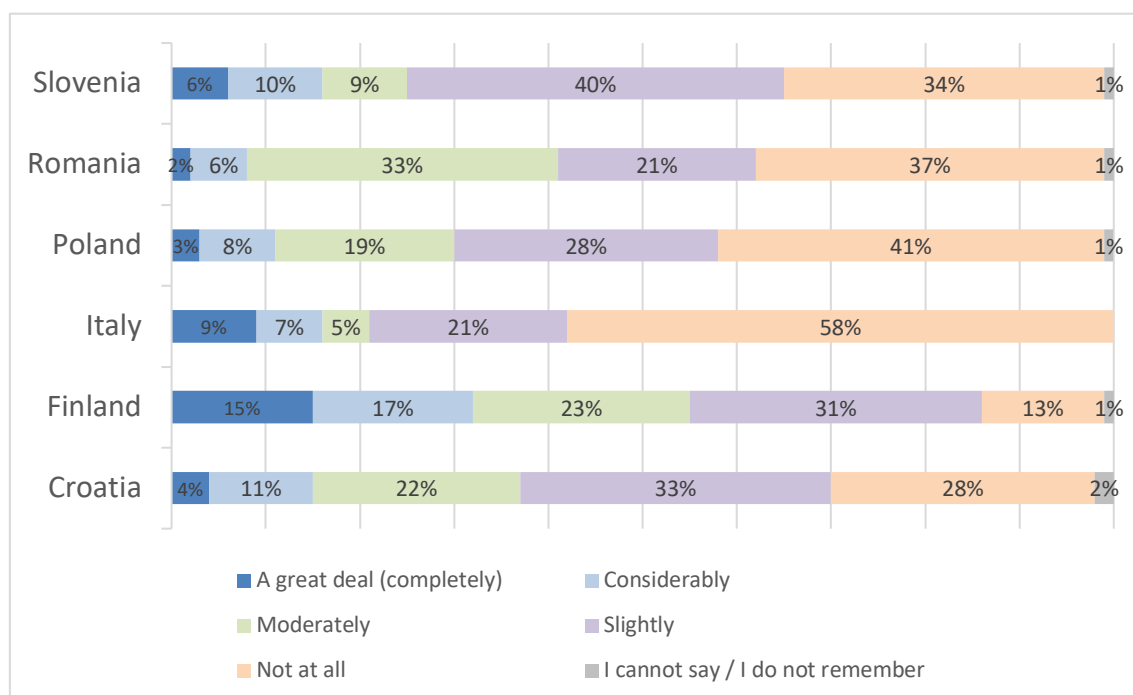


Fig. 1. Online teaching before the COVID-19 pandemic (n=525). Croatia, N=102, Finland, N=75, Italy, N=57, Poland, N=144, Romania, N=67, Slovenia, N=80

Source: InCompEdu Deliverable 1. Report on identified challenges and problems that occurred during the transition to online teaching mode in the COVID-19 pandemic period

More than 60% of respondents had already implemented online teaching before the pandemic. The most common form of online teaching in all countries surveyed was the online provision of teaching materials (87%). Respondents from Finland had the most experience with online teaching, as 58% of them reported that students had the opportunity to take exams online, had access to videos/recordings of lessons (45%) and even participated in single lecture or the entire course online (33%). In other countries, such an approach was not widespread. In Italy, online exams were only allowed after the pandemic outbreak. However, it is interesting to note that 29% of Romanian respondents reported that they had already taken a BSc/MSc by distance learning before the pandemic (29%).

The proportion of online teaching before the pandemic on a daily or weekly basis was highest in Finland (29%), followed by Croatia (23%) and Slovenia (20%). However, more than 50% of all respondents in the countries surveyed have never regularly taught online.

Before the pandemic, presentations were the most common online teaching method used by respondents in all countries, followed by videos or animations. Many respondents indicated that they had used some online teaching methods before the pandemic to motivate and activate students. Some of the methods mentioned by respondents during the survey were flipped classroom, online homework, forum discussions and other online activities (quizzes, games, self-assessment tests), email consultations, etc.

4. CHALLENGES REGARDING ONLINE TEACHING

The first challenge that respondents faced in spring 2020 and 2021 was the transition to online teaching, the so-called "emergency remote teaching". On average, 85% of respondents from all six countries began their teaching from home, only 12% taught on university premises and 3% taught from elsewhere.

The most significant or moderately so reported challenges were: student engagement during class (76%); increased workload due to the organisation of online teaching (72%); fatigue due to prolonged activities in front of the screen (71%), and the ergonomics of working remotely (64%). These aspects were

perceived as the main difficulties in most countries. However, there were exceptions, like Romania, where the biggest challenges were seen in online teaching methods (75%) or communication with students (72%), while in Italy ergonomics and increased workload were among the biggest challenges

In addition to the answers offered, some respondents (50 of them) mentioned other challenges they faced: the workload was increased at the beginning of the online course due to the very short notice; the development of content and delivery had to be changed when the course was already running and planned as a traditional face-to-face course; students needed some time to get used to remote teaching, and students requested individual instructions even when the instructions were clear. Above all, the irregular attendance of students in class caused additional difficulties for the teachers.

During the pandemic, the following aspects related to ICT (Figure 2) were reported as significantly or moderately challenging: internet connectivity (23%), software or applications (22%), digital equipment for teaching (20%), accessibility related to ICT (18%), conducting examinations (37%), verifying the identity of students (30%) and licenses for software and applications (20%).

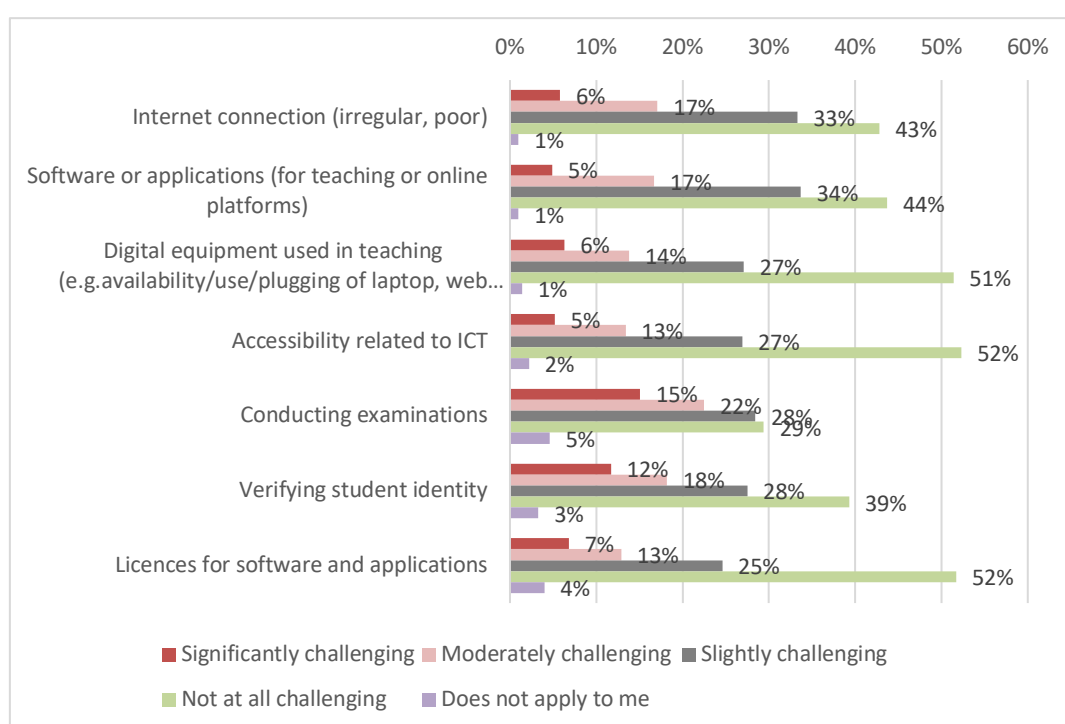


Fig. 2. Challenges related to ICT during pandemic. Total N=517. Croatia, N=102, Finland, N=74, Italy, N=56, Poland, N=141, Romania, N=6, Slovenia, N=78 Source: InCompEdu Deliverable 1. Report on identified challenges and problems that occurred during the transition to online teaching mode in the COVID-19 pandemic period

Other recognized challenges that the use of new technologies poses for teachers and students include securing intellectual property rights to the courses created and made provided to students, and increased workload for both students and teachers (in preparing coursework). Maintaining student attention is also an important issue given the potential distraction of the Internet. There is a need to develop official guidelines for the use of these tools and to purchase commercial digital tools that offer more features than the free versions.

5. CONCLUSIONS

The accelerated development of technology and the increasing digitalization of all areas of life have long been reflected in higher education. The COVID-19 pandemic and the transition to online teaching, which occurred overnight, so to speak, have not only demonstrated the state of the art in this regard, but also the great ability of the HEI system to adapt quickly and overcome challenges.

This survey of teachers' attitudes in six European countries found that the challenges of the rapid transition to online teaching due to the COVID-19 pandemic faced by them and their institutions were generally the same in all countries surveyed: students' engagement during class, increased workload, ergonomics of working remotely being the most frequently stated challenges. These results are consistent with the results of other published studies (Aristovnik et al. 2020, Armstrong-Mensah et al. 2020 and Al-Kumaim et al. 2021). In addition to the proven flexibility of the system, some new problems have emerged that were caused by the pandemic (e.g., the ergonomics of remote work, fatigue from prolonged screen time, and irregular student participation in online courses), but also some old ones that have been exacerbated by new, online teaching methods. According to the results of this study, this primarily refers to student engagement. Building on the findings of a study by Garcia-Martinez et al. (2021), it is to be expected that lower student engagement will translate into poorer overall academic performance.

In addition to pedagogical challenges, the success of teaching has been significantly influenced by technical aspects, e.g., quality of Internet connection, digital proficiency, lack or shortage of equipment, as well as software and applications (see also Ferri et al. 2020, Henriksen et al. 2020).

Summarizing the reflection on the rapid transition to online teaching, we can distinguish two types of effects: (1) those related to the short term, which are (especially in the beginning) insufficient teacher competencies, inadequate and/or insufficient equipment and applications, and teacher and student overload, affecting *the quality of teaching*, and (2) long-term, which will be evident over time and mostly entail *poorer student academic performance*.

There are some limitations in this work. The main limitation is the insufficient dispersion of respondents in terms of field of study (most respondents belong to social sciences (economics), followed by engineering and humanities) and the relatively small number of respondents (525). In future research, it would be useful to determine if there are differences in online learning challenges between faculty from different academic disciplines and how the same challenges identified in this study are evaluated one year after the implementation of online learning.

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