*Editorial*

# Introduction to the Special Issue "Emergency Remote Teaching during the COVID-19 Lockdown and Its Implications for Higher Education Institutions: An International Perspective"

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In spring 2020, the proliferation of the COVID-19 virus and the imposition of subsequent lockdowns across the globe demanded that university institutions undertake an emergency transition toward online teaching. To ensure the continuation of university teaching, emergency remote teaching [1,2]—including prompt rethinking and adjustment among university teachers—had to be managed. At least four semesters of online teaching had to be managed and deserted university campuses comprised a normal situation at the time. On the one hand, the abrupt change from in-person to online teaching was associated with the potential of digital, didactical, and pedagogical transformations to adapt to the pandemic-related lockdown. On the other hand, emergency remote teaching (ERT) posed extraordinary organizational, didactical, and pedagogical challenges. Universities and lecturers had to adapt to this challenging new situation via online teaching and learning arrangements, by preparing digital courses and adopting digital tools and programs [1,3]. To maintain contact with students and ensure the maintenance of the teaching mandate, a synchronous or asynchronous teaching format had to be created and the implementation of educational technology had to be intensified, e.g., through the learning management platforms and the use of videos, videoconferencing and other tools (e.g., [4–6]). Even though universities could already reflect on the approximate 20–25 years of development of digital learning media, the sudden extreme requirements and the challenging transition from face-to-face to digital teaching and learning formats found universities mostly unprepared [7]. Lockdowns and online teaching required students to find ways to mitigate the restrictions on their social contact, to reorganize their studies and to work more independently work more independently than they were once accustomed to. The digitalization of teaching and learning represented a complex process with challenges for universities, teachers, and students [8,9]. To understand this complex process from an empirical perspective, it is crucial to ask how university teachers and universities were tackling the coronavirus situation against the backdrop of the goal to maintain high-quality teaching. Furthermore, it is important to understand how students adjusted to the hybrid and distance-learning situations and how they managed their learning and psychological well-being.

This Special Issue provides unique insights into the organizational, pedagogical, and psychological challenges related to the digital transition in higher education institutions in different countries resulting from university lockdowns during the COVID-19 pandemic. It also discusses digital, didactical, and pedagogical potential evolving through the adaptation efforts related to the situation of emergency remote teaching at universities for university teachers and students.

The Special Issue integrates studies from around the world, focusing on university teachers and students in America, Europe, and Asia with a variety of study designs and methods for analyzing the questions. The wide array of studies provides comparative perspectives on the feasibility of ERT and some of the presented studies address comparative perspectives explicitly. The book is divided into three sections; while the first

section presents research on the teaching, learning, and research experience of academic staff during the first COVID-19 lockdown, the second section presents studies on students' perspectives towards remote teaching and digital learning during the first COVID-19 lockdown. In the third section, general considerations concerning digital education after the pandemic are presented.

The first section starts with a study conducted by Kaqinari and colleagues [10], in which they examined the differences in the use of educational technology for online teaching between university lecturers during the advent of ERT in France, Germany, Switzerland, and the United Kingdom. This study revealed that the differences in university teachers' adjustment to ERT across countries were related to institutional as well as personal factors. Moreover, based on a latent class analysis, four different types of lecturers regarding educational technology use were identified and characterized as 'Presenters', 'Strivers', 'Routineers', and 'Evaders'. A qualitative study conducted by Dorfsman and Horenczyk [11] also found differences between Israeli university teachers, concerning their experience and willingness to incorporate new pedagogical practices that allowed an adaptation to the new virtual teaching environments. These differences were expressed particularly in the capacity of perception (insight), the available repertoire of practices, and the teaching gaze. In their comparative study, Göbel and colleagues [4] showed that university teachers perceived the immediate transition from conventional to online teaching was most successful in German and Argentinian universities. Still, Argentinian university teachers reported a slightly more positive perspective and slightly higher self-efficacy beliefs in online teaching compared to their German colleagues. Individual experience and training as well as supportive institutional conditions seemed to be relevant for the development of digital teaching at universities in both countries. A study from Portugal [12] focused on university teachers' perceptions of remote learning during the pandemic, while Silva and colleagues also emphasize the relevance of former experience in online teaching. The results revealed that younger teachers felt more satisfied with remote classes and remote assessments. Overall, university teachers in Portugal considered the advent of emergency remote teaching as a positive period and were moderately satisfied with their teaching and use of digital tools. In their study on Finnish school teachers, Mäkelä and colleagues [13] showed that the most severely constraining factors in terms of well-being and agency were found to be challenges with the workload, time management, and interactions with colleagues. Difficulties with maintaining a work-life balance, a lack of home office facilities, and the adoption of new technological tools were reported as issues, demonstrating the need of teachers to be supported, particularly when extensive changes in teaching arrangements are expected on a rapid schedule. In Bangladesh, only a few universities began the transition to online distance teaching and learning activities as most of the higher education institutions there shut down their operations completely. Shohel and colleagues [14] report the great challenge of most universities to adopt online teaching and learning at the beginning of the pandemic. Many factors, such as preparedness, limited resources, including financial means, low digital literacy levels, poor internet connectivity, and a lack of suitable physical and virtual infrastructure affected this transition. However, the pandemic also seems to have created new opportunities for educators and practitioners to explore different, new digital teaching activities, leading to better preparedness for future approaches to delivering education in emergency situations. Finally, Naidoo and colleagues [15] studied the impact of the advent of ERT on the academic productivity of health sciences faculty members in a graduate school in the United States. The results show that an increased amount of time was dedicated to teaching and that teaching was prioritized over research, which affected female researchers more adversely than it affected their male peers. Hence, the number of journal submissions with survey participants was decreasing during the pandemic, and faculty members felt a loss of their locus of control, a lack of autonomy, and pressure to help students graduate on time and maintain the quality of teaching while dealing with uncertainty in both their professional and personal lives. The pandemic disproportionately impacted women and junior faculty members as connectedness and mentorship declined.

The second section focusing on students' experiences of ERT begins with a study by Mayers and colleagues [16]. They analyzed the essays of Japanese medical science students in the context of the COVID-19 pandemic and detected an increase in motivation to study. Japanese medical students further reported a desire to help others, contribute to the development of medical science, increase knowledge, and disseminate correct information. Despite the increased motivation, the prolonged period of the pandemic and lockdown measures exacerbated demotivation in online learning and negative emotions associated with lockdown, which was particularly the case for female medical students in Japan. Linnes and colleagues [17] investigated the experiences of students learning at a distance in Norway and the USA. The findings indicate disparities in student experiences in terms of course delivery, health, and overall quality of life. Different digital teaching preconditions in universities are considered an issue. Authors argue that higher education should improve their capabilities to keep their students tied to their universities. Research in South Africa [18] showed the differences in the experiences between students of rurally based universities (RBUs) and those of their counterparts who belonged to urban-based universities (UBUs). Pika and Reddy's findings indicate that home conditions, individual characteristics, pre-COVID-19 blended learning experiences, university training and support, teaching, learning, assessment practices, and policies altogether contributed to the exclusion of low-income students from active teaching and learning, equipping middle-class students with better chances of success compared to working-class students, and distressing female students and lecturers more than it distressed their male counterparts. A study from Spain [19] studied the viability of the online teaching of the subject of applied statistics in health sciences in higher education. Gutiérrez and colleagues showed that online teaching was feasible for the subject under study, although face-to-face learning continued to be reverted to a significant degree in favor of the quality of teaching. Most of the students reported not having technological learning difficulties, whether they were related to their connectivity or technological resources, which did not have a significant impact on their teaching perception. Despite the psychological sequelae of COVID-19, this did not affect the students' teaching satisfaction. In a further Spanish study on engineering universities, Garrido-Gutiérrez and colleagues [20] found that students' acceptance of online teaching was highly influenced by their social context, while the role of professors was also relevant but came only second to the former. Thus, it is important for universities to introduce e-learning with a focus on creating a positive social environment around the e-learning platform, for example, by using social networks or relying on testimonies given by professionals who can confirm the interest in such a platform in a future work environment.

In the last section, Kerres and Buchner [21] reflect on the impact of experiences in ERT on the general development of higher education. Regarding the use of digital technology, they assume that two contradictory visions for the role of educational technology in education after the pandemic may be possible: a view that implies fundamentally different perspectives for the future of education and a return "back to normal". The authors argue for a consideration of experiences of ERT for a consequential reformation of education.

In conclusion, this Special Issue offers unique insights into the challenges which occurred during the COVID-19 lockdown and the almost overnight shift from in-person to ERT for universities, teachers, and students globally. Referring to the perspectives of university teachers and students, the studies contribute to a deeper understanding of the processes underlying ERT and form a basis for further studies and educational reforms concerning digital teaching and learning in higher education. It is recommended that further research refines the understanding of differences among university teachers and students in their methods of adaptation to online teaching formats. The presented studies have strengthened and enriched international collaborations, as shown in comparative studies, which might also provide a foundation for future international comparative research on online digital technology in higher education.

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