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Contactless Higher Education: A SWOT Analysis of Emergency Remote Teaching and Learning during COVID-19

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ABSTRACT

The COVID-19 pandemic forced many higher education institutions to suddenly pause in-person teaching and learning in favor of Emergency Remote Teaching and Learning (ERTL). Strict social distancing measures required institutions to offer courses, programs, and services without any direct contact between students, faculty, and staff; higher education created a *contactless* teaching and learning environment. This exploratory study analyses various applications of ERTL through a systematic literature review using the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) guidelines. The results from the review of the literature are presented through a Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis for students, faculty, and the institutions.

Keywords: Contactless, higher education, SWOT analysis, emergency remote teaching and learning

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Introduction

The immediate impact of the COVID-19 pandemic on higher education was drastic, but the question remains whether the many changes will persist into the future. In particular, will the sudden shift in 2020 to Emergency Remote Teaching and Learning (ERTL) transform higher education? Clearly, COVID-19 has already become one of the greatest disruptions to the higher education landscape and can be considered as an educational *punctuated equilibrium* event. The global health crisis has affected almost all facets of teaching and learning, and the crisis has in effect lead to the “the biggest distance-learning experiment in history” (Kamenetz, 2020). The abrupt impact, as well as the potential future impact, on higher learning warrant careful study of the benefits and drawbacks of ERTL.

The phrase Emergency Remote Teaching and Learning is used in the literature to describe a rapid and unplanned need to shift what would normally be face-to-face teaching to online teaching. This “emergency” online teaching is distinct from online teaching, which has an established pedagogy with characteristics of being planned, deliberate in course design and, in essence, always designed to be delivered online (Bozkurt & Sharma, 2020). ERTL thus describes the sudden move and quick adaptation of content *planned* for face-to-face delivery to a remote online delivery due to an “event” such as a natural disaster or during a global pandemic. Once the “event” is over, it is expected that teaching activities will revert back to the intended face-to-face mode. This “quick adaptation” is seen across all facets of teaching, from course design through assessment (Shisley, 2020). The COVID-19 global pandemic thus caused swift and necessary action to be taken by management and teaching staff at higher education institutions in order to facilitate the delivery of remote teaching to students who could no longer be in the classroom, rather than representing a planned, deliberate switch to long-term online teaching (Vlachopoulos, 2020).

Due to the speed of change, ERTL has revealed a need for teaching staff to proactively engage in self-learning to get a grasp on the fundamentals of how to best teach online (Langford & Damsa, 2020; Hodges, Moore, Lockee, Trust & Bond, 2020). This is important since teaching staff report that they are not feeling confident in implementing remote teaching due to the lack of opportunities to access professional development and dedicated time to build confidence in the use of digital learning tools (Mohammed, Khidhir, Nazeer & Vijayan, 2020; Flores & Gago, 2020). However, the move to ERTL may also have created a “culture-change moment” (Watermayer et al., 2020) as unprepared academics struggled to work out how to quickly, efficiently, and fluently use educational technology, such as Learning Management Systems, online resources, and digital tools to teach, assess, and engage students in an unfamiliar environment, with, often, initial minimal support.

The abruptness of the move to Emergency Remote Teaching and Learning has not only affected universities and educators, but also impacted students across the globe. It has been reported that “more than 1.5 billion students” had been prevented from attending physical education environments as a direct result of the pandemic (Bae & Chang, 2020; Strauss, 2020). In fact, all the services traditionally offered by higher education institutions have been affected, leading to a new off-campus experience that can be contrasted with the traditional on-campus experience. Again, what began as a required temporary shift towards online education is now poised to have a lasting impact on the future of higher education. The immediate necessity for *contactless* environments and a new off-campus experience, with potential strengths and weaknesses, may now provide both opportunities and threats to faculty, students, and entire institutions of higher learning.

In order to explore the strengths, weaknesses, as well as potential opportunities and threats, this study conducted a thorough review of the literature addressing issues related to the application of Emergency Remote Teaching and Learning. The systematic literature review, using the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) guidelines, initially identified 520 articles, from which a total of 22 articles were retained after quality assessment. The review revealed important themes that are presented through a Strength, Weaknesses, Opportunities, and Threats (SWOT) analysis for students, faculty, and the institutions.

Methods and Materials

Research Question

The study explores the general impact that the switch to Emergency Remote Teaching and Learning (ERTL) during the COVID-19 pandemic had on the experience of students, faculty, and higher education institutions. In particular, what strengths, weaknesses, opportunities, and threats do Emergency Remote Teaching and Learning (ERTL) and an off-campus experience have compared to an on-campus experience?

Procedures

Data collected from the literature were compared by adopting a thematic analysis approach. Once themes were generated, they were collectively brought together and analyzed using a Strength, Weakness, Opportunity, Threat (SWOT) framework. Disagreements between the reviewers were resolved through discussion.

Search Strategy

A systematic literature review was undertaken to address the above research question, using a Preferred Reporting Items for Systematic Reviews (PRISMA) approach (Figure 1), as advocated by Moher et al. (2009). PRISMA provides a standard methodology that uses a comprehensive 27-item guideline checklist. Articles in English published between December 2019 and September 2020 were searched in the following electronic databases: ERIC, Education Research Abstracts Online (ERA), JSTOR, MERLOT, Scopus and Google Scholar. Various combinations of the following keywords were used (boolean operators “AND” and “OR” were also used to separate the keywords): “university off-campus experience COVID 19,” “Emergency Remote Teaching,” “global crisis emergency remote teaching,” “teaching during pandemics,” “Emergency Remote Teaching COVID 19 campus experience,” “off-campus experience COVID,” “Distance Education COVID 19.”

Selection of Studies

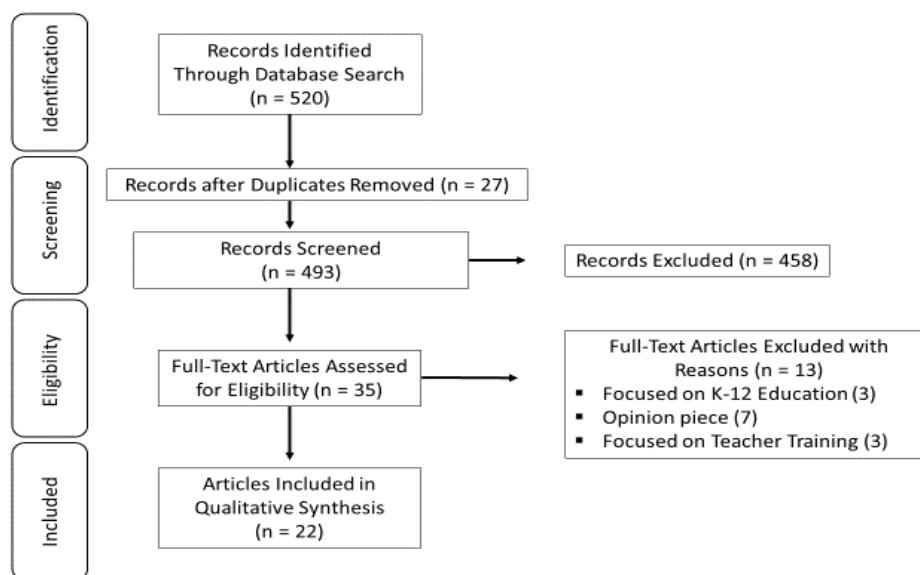
All studies (randomized and non-randomized) describing both ERTL and any off-campus experience in Higher Education (at undergraduate and postgraduate levels) during COVID-19 were included regardless of methodology, context, or discipline (including reviews). The articles were initially screened by title, then by abstract, and finally by text. Duplicates were removed using EndNote. Articles were excluded for the following six reasons: full-text unavailability, text published before the set review dates, non-peer-revised Op-Eds, text in languages other than English, text not specifically on emergency remote teaching and learning or off-campus experience during COVID-19, and context being in primary or secondary education.

Data Extraction and Quality Assessment

Data extraction was conducted by the first author and then checked by two additional co-authors. Information was extracted using a form containing the following items: author, study design, inclusion/exclusion criteria, aim, and time-period in which the study was conducted (December 2019-September 2020), setting of the study/region, assessment instruments, outcomes, and conclusions. All final quality assessments were done in duplicate and independently. Disagreements were resolved through discussion and consultation with all authors. The Mixed Methods Appraisal Tool (MMAT) was used to assess the eligibility of studies for inclusion in the review (Hong et al., 2018). The MMAT is designed for systematic reviews that include qualitative, quantitative, and mixed-methods studies. Each included study was rated in the appropriate category of criteria as either “Yes,” “No” or “Cannot tell,” as shown in Appendix 1.

After database screening and removal of duplicates, 493 articles were found which were considered relevant. Of these, a total of 458 studies were excluded following an assessment based on the eligibility criteria. Of the 458 eliminated studies, 123 articles were excluded because the title, keywords, or abstract did not contain the themes relevant to this study. Another 100 were excluded due to no full text being available. An additional 116 articles were excluded as they did not have Emergency Remote Teaching and Learning or off-campus experience as an independent variable. Finally, 35 articles were excluded if texts were published before the review dates, 15 were excluded because they were Op-Eds, 5 were duplicates of included studies, and 3 were in a language other than English. The remaining 35 articles were then assessed for eligibility and 6 additional articles were excluded for the following reasons: three that focused on K-12 education, seven were descriptive opinion (academic) pieces in Higher Education with no clear outcome or application of ERTL and three focused on teacher training, but not specifically for emergency remote teaching.

Figure 1. PRISMA four-phase flow diagram



In the end, a total of 22 articles formed the dataset that was used to explore the research question of what strengths, weaknesses, opportunities, and threats do Emergency Remote Teaching and Learning and an off-campus experience have compared to an on-campus experience?

Ethical Considerations

As the authors of this article did a systematic qualitative review of the literature, Human Research Ethics committee approval / Institutional Review Board approval were not sought. The authors acknowledge however their own assumptions and biases. To minimize search bias for instance, the authors only included published research that had undergone a peer-review process. The reader should bear in mind however that the scope of this exploratory study was limited in terms of time, size and context.

Findings

Before conducting the SWOT analysis on the information contained in the 22 included studies, the study used open coding in a grounded theory method in order to categorize the information into meaningful words or short phrases. The results from the open coding are provided in Table 1.

The emerging themes from the data included: flexibility, student performance, varied impact on different types of students, accessibility, complexity, levels of preparedness, emotional impact/mental health, assessment, innovation, workload, and professional development.

Table 1. Results from an open coding, emerging themes

Citation	Date	Title of article	Setting	Source	Themes
Hodges, C., Moore, S., Locke, B., Trust, T., & Bond, A. (2020).	2020	The difference between emergency remote teaching and online learning	United States	<i>Educause Review</i>	<ul style="list-style-type: none"> ▪ Flexibility ▪ Stigma associated with online learning and teaching ▪ Impact on learning due to speed of change ▪ UDL principles ▪ Different levels of investment ▪ Different levels of infrastructure ▪ Effective online education ▪ Emergency remote learning and teaching
Bozkurt, A., & Sharma, R. C. (2020).	2020	Emergency remote teaching in a time of global crisis due to Corona Virus pandemic	Turkey	<i>Asian Journal of Distance Education</i>	<ul style="list-style-type: none"> ▪ Interruption of education ▪ Education institutions were unprepared and vulnerable ▪ Complexity ▪ Pedagogy of care ▪ Concern for equity groups ▪ Emergency remote learning and teaching
Alvarez, A. J. (2020).	2020	The phenomenon of learning at a distance through emergency remote teaching amidst the pandemic crisis.	Philippines	<i>Asian Journal of Distance Education</i>	<ul style="list-style-type: none"> ▪ Impact of ERLT on the student experience ▪ Different levels of infrastructure and access to technology ▪ Pedagogy of care ▪ Emotional support
Whittle, C., Tiwari, S., Yan, S., & Williams, J. (2020).	2020	Emergency remote teaching environment: A conceptual framework for responsive online teaching in crises.	United States	<i>Information and Learning Sciences</i>	<ul style="list-style-type: none"> ▪ Focus on method rather than leaning goal ▪ Online learning facilitated increased learner agency ▪ Emergency remote learning and teaching environments ▪ Assessment and evaluation
Mohammed, A. O., Khidhir, B. A., Nazeer, A., & Vijayan, V. J. (2020).	2020	Emergency remote teaching during coronavirus pandemic: the current trend and future directive at	Oman	<i>Innovative Infrastructure Solutions</i>	<ul style="list-style-type: none"> ▪ Reliable, fast response to crisis ▪ Unequal access to digital technology and internet ▪ Opportunity for staff upskilling

		Middle East College Oman.			
Soria, K. M., Horgos, B., Chirikov, I., & Jones-White, D. (2020).	2020	First-generation students' experiences during the COVID-19 pandemic.	United States	<i>University of Minnesota Digital Conservancy</i>	<ul style="list-style-type: none"> ▪ Negative impacts of COVID ▪ Financial hardship impacts on students ▪ Unequal access to digital technology ▪ Impacts on mental health of students ▪ Housing insecurity
Gallagher, H. L., Doherty, A. Z., & Obonyo, M. (2020).	2020	International student experiences in Queensland during COVID-19.	Australia	<i>International Social Work</i>	<ul style="list-style-type: none"> ▪ Crisis intervention approach ▪ Impact on international students ▪ Pedagogy of care
Regehr, C., & Goel, V. (2020).	2020	Managing COVID-19 in a large urban research-intensive university.	Canada	<i>Journal of Loss and Trauma</i>	<ul style="list-style-type: none"> ▪ Disruption to learning and teaching ▪ Sharing of resources ▪ Increased collegiality amongst teaching staff ▪ New opportunities for student employment ▪ Safety of students ▪ Academic uncertainty and continuity
Raaper, R., & Brown, C. (2020).	2020	The Covid-19 pandemic and the dissolution of the university campus: Implications for student support practice.	United Kingdom	<i>Journal of Professional Capital and Community</i>	<ul style="list-style-type: none"> ▪ Network capital ▪ Unequal access to digital technology ▪ Changing nature of student support services ▪ International students ▪ Students' routine
Vielma, K., & Brey, E. M. (2020).	2020	Using evaluative data to assess virtual learning experiences for students during COVID-19.	United States	<i>Biomedical Engineering Education</i>	<ul style="list-style-type: none"> ▪ Experience of non-typical students ▪ Flexibility in online course design and delivery ▪ Changes to assessment ▪ Modes of delivery ▪ Pedagogy of care
George, M. L. (2020).	2020	Effective teaching and examination strategies for undergraduate learning during COVID-19 school restrictions.	Trinidad and Tobago	<i>Journal of Educational Technology Systems</i>	<ul style="list-style-type: none"> ▪ Adaption to online teaching ▪ Modes of delivery ▪ Student performance ▪ Online course evaluations
Crawford, J., Butler-Henderson, K., Rudolph, J., Malkawi, B., Glowatz, M., Burton, R., ... & Lam, S. (2020).	2020	COVID-19: 20 countries' higher education intra-period digital pedagogy responses.	20 countries	<i>Journal of Applied Learning & Teaching</i>	<ul style="list-style-type: none"> ▪ Rapid transition to online teaching ▪ Equity ▪ Preparedness of universities to handle change

						<ul style="list-style-type: none"> Logistic challenges for international students
Johnson, N., Veletsianos, G., & Seaman, J. (2020).	2020	US faculty and administrators' experiences and approaches in the early weeks of the COVID-19 pandemic.	United States	<i>Online Learning</i>	<ul style="list-style-type: none"> Impact of disruption on staff Preparedness of universities to handle change Rapid transition to online teaching Rapid upskilling of staff to online teaching Adaption to online teaching 	
Cheng, S. Y., Wang, C. J., Shen, A. C. T., & Chang, S. C. (2020).	2020	How to safely reopen colleges and universities during COVID-19: Experiences from Taiwan.	Taiwan	<i>Annals of Internal Medicine.</i>	<ul style="list-style-type: none"> Strategies for safe opening of campus Policy lessons from COVID-19 	
Aucejo, E. M., French, J., Araya, M. P. U., & Zafar, B. (2020).	2020	The impact of COVID-19 on student experiences and expectations: Evidence from a survey.	United States	<i>Journal of Public Economics</i>	<ul style="list-style-type: none"> Negative side effects of COVID-19 on student experience Impact on students Disruption Student response to online learning 	
Marsicano, C., Felten, K., Toledo, L., & Buitendorp, M. (2020).	2020	Tracking campus responses to the COVID-19 pandemic.	United States	<i>APSA Preprints.</i>	<ul style="list-style-type: none"> Academic responses to COVID-19 Online instruction 	
Sokhulu, L. H. (2020).	2020	Students' experiences of using digital technologies to address their personal research needs during the COVID-19 lockdown.	South Africa	<i>African Identities</i>	<ul style="list-style-type: none"> Adaptation to online research/study Digital literacies Supporting the professional identity in online learning and teaching Student socialization 	
Assunção Flores, M., & Gago, M. (2020).	2020	Teacher education in times of COVID-19 pandemic in Portugal: National, institutional and pedagogical responses.	Portugal	<i>Journal of Education for Teaching</i>	<ul style="list-style-type: none"> Rapid transition to online teaching Emergency Remote Learning and Teaching Innovation in teaching Opportunities for mentoring 	
Wotto, M. (2020).	2020	The future high education distance learning in Canada, the United States, and France: Insights from before COVID-19 secondary data analysis.	Canada, United States, France	<i>Journal of Educational Technology Systems</i>	<ul style="list-style-type: none"> Quality of online teaching Rapid transition to online learning Digital learning MOOCs 	

Donitsa-Schmidt, S., & Ramot, R. (2020).	2020	Opportunities and challenges: Teacher education in Israel in the Covid-19 pandemic.	Israel	<i>Journal of Education for Teaching</i>	<ul style="list-style-type: none"> ▪ Rapid transition to online learning ▪ Uncertainty ▪ Upskilling teaching staff ▪ Pedagogy guidelines for online teaching ▪ Peer learning
Huang, R., Tlili, A., Chang, T. W., Zhang, X., Nascimbeni, F., & Burgos, D. (2020).	2020	Disrupted classes, undisrupted learning during COVID-19 outbreak in China: Application of open educational practices and resources.	China	<i>Smart Learning Environments</i>	<ul style="list-style-type: none"> ▪ Open educational resources ▪ Rapid transition to online learning ▪ Upskilling teaching staff ▪ Guidelines for students
Pather, N., Blyth, P., Chapman, J. A., Dayal, M. R., Flack, N. A., Fogg, Q. A., ... & Morley, J. W. (2020).	2020	Forced disruption of anatomy education in Australia and New Zealand: An acute response to the Covid-19 pandemic.	Australia, New Zealand	<i>Anatomical sciences education</i>	<ul style="list-style-type: none"> ▪ Rapid transition to online learning ▪ Changing role of teaching staff ▪ Increased workload ▪ Equity and access ▪ Curriculum and assessment design ▪ Pedagogy of care

Discussion

The sudden adoption of Emergency Remote Teaching and Learning posed a number of challenges to three key higher education stakeholders: students, faculty, and the institution as a whole. Although the impact on the various stakeholders were often similar, each group was affected by the switch to ERTL slightly differently. However, the results from the SWOT analysis (Table 2), based on the 22 included studies, suggest that there are opportunities to learn from the rapid transition to online teaching and learning that the COVID-19 pandemic required. As mentioned earlier, the global health crisis provided an unprecedented “distance-learning experiment” (Kamenetz, 2020) and it is important to not waste this learning opportunity. The need for a sustainable process which enables flexibility in design, use, support, and access is integral in order to continually promote opportunities and counteract prominent and persisting threats and weaknesses. These issues are discussed in the SWOT analysis section.

Table 2. SWOT Matrix

STRENGTHS	
Students	<ol style="list-style-type: none"> 1. Flexibility 2. Student performance (Many students adapt properly to this online context)
Faculty	<ol style="list-style-type: none"> 1. Transition to ERTL has been frantic, but effective 2. Increased sharing of experience and collegiality 3. Development of several low technology solutions to support online instruction
Institution	<ol style="list-style-type: none"> 1. Online instruction (Firm decisions of universities to develop online courses). 2. MOOCs (Many universities implemented MOOCs to adapt to the new context) 3. Guidelines for students (Universities developed and implemented guidelines to help students adapt to this online context)

WEAKNESSES

Students	<ol style="list-style-type: none"> 1. Technical issues encountered almost on a daily basis 2. Technology was largely inaccessible 3. A lack of interaction may have affected student motivation and retention 4. First-generation students' lack of adequate study spaces free from distractions and lack of technology to attend virtual classes at scheduled times 5. Financial and emotional distress 6. Lack of emotional support
Faculty	<ol style="list-style-type: none"> 1. Unfamiliarity with the technological tools and online pedagogy 2. Unfamiliarity with Emergency Remote Teaching and Learning 3. Challenges to adapt labs and hands-on learning activities to online environments 4. Online course evaluations (Difficult to implement online course evaluations)
Institution	<ol style="list-style-type: none"> 1. Unpreparedness 2. Emergency Remote Teaching Environments (Some universities face logistic challenges when implementing ERTL) 3. International students (Lack of efficient measures to help international students) 4. Logistic challenges for international students 5. Assessment and evaluation (Difficult to implement new evaluation systems for programs)

OPPORTUNITIES

Students	<ol style="list-style-type: none"> 1. Flexibility for those with work/family responsibilities 2. Access to lecture-captured platforms 3. Opportunities for mentoring 4. Use of new teaching methods 5. Students' routine (Students can implement new schedules and timings)
Faculty	<ol style="list-style-type: none"> 1. Changing role of teaching staff 2. Capacity building and upskilling of teaching staff 3. Opportunities for mentoring and peer learning 4. Pedagogy of care 5. Increased opportunities for networking 6. More inclusive learning environments
Institution	<ol style="list-style-type: none"> 1. Opportunity for innovation, the development of "best practice" in online pedagogy, opportunity to grow their institutional online teaching capabilities 2. Effective online education 3. Opportunities to share resources with other institutions 4. Opportunities to better support faculty members

THREATS

Students	<ol style="list-style-type: none"> 1. Isolation from spiritual, social and practical supports 2. Emotional support 3. Higher rates of mental health disorders/increased rates of anxiety 4. Financial hardship 5. Housing insecurity
Faculty	<ol style="list-style-type: none"> 1. Increased workload
Institution	<ol style="list-style-type: none"> 1. Infrastructure and investment disparities 2. Student safety (Difficulties to implement internal process for protecting students' safety) 3. Academic uncertainty and continuity

SWOT Analysis

Students: Strengths and Weaknesses

Students identified the flexibility of remote teaching and learning as a major strength (Hodges et al., 2020; Vielma & Brey, 2020; Crawford et al., 2020). Online teaching enabled students to engage with

lectures and course materials asynchronously, without the need to commute, which had the benefits of increased flexibility to fit study around other commitments such as part-time work and caring responsibilities (Mohammed et al., 2020; Vielma & Brey, 2020). Additionally, as teaching staff worked rapidly to place learning online, students also reported benefits of being able to view resources multiple times, at their own pace, such as re-watching a lecture or concepts video (Hodges et al., 2020; Crawford et al., 2020; Vielma & Brey, 2020) which helped students retain information. For doctoral students, a strength of online learning was an increased feeling of convenience of working from home and not needing to travel to campus and the ability to connect with supervisors via video and increased socialization via the use of digital tools (Sokhulu, 2020).

The most prominent and unanimous weaknesses were related to technology inaccessibility (Gallagher et al., 2020), technical issues encountered almost on a daily basis to attend online classes synchronously and the lack of direct interaction with peers and teachers which may have affected motivation levels and retention. The lack of quiet spaces to study at home during confinement was also highlighted by Soria et al. (2020). Finally, with universities and shops shutdowns, many international students were in financial distress, left without any income, often generated by part-time jobs on campus or in the community.

Faculty: Strengths and Weaknesses

Teaching staff felt that the transition to ERTL was done hastily; effectively, but in a rather frantic manner. Adaptation to an online environment was challenging for many, as switching all courses, teaching material, and programs online in a matter of days was daunting. The golden opportunity to upskill in the principles of Universal Design for Learning (UDL), which is common to online learning, and alternative ways of assessing in an online environment was welcomed by academic staff, as it helped enhanced experience for all learners (Hodges et al., 2020).

For teaching staff, the *contactless* teaching experience brought about weaknesses related to increased workload, unfamiliarity with technology, loss of academic networks and direct interaction with students, and a steep learning curve of how to best engage students in their learning to avoid the “cameras off” phenomena (Assunção Flores & Gago, 2020). Experiential learning, labs, experiments and other forms of hands-on learning were seen as difficult to replicate online (Johnson, Veletsianos & Seaman, 2020; Aucejo et al., 2020; Assunção Flores & Gago, 2020; Donitsa-Schmidt & Ramot, 2020; Pather et al., 2020; Vielma & Brey, 2020). Further reflective work would need to be done to ensure that this form of teaching and learning can be transitioned to an online environment more successfully.

University: Strengths and Weaknesses

On a positive note, the rapid switch to ERTL has provided universities with an unprecedented incentive to upskill staff and to launch well-thought, professionally-designed online courses and potentially Massive Open Online Courses (MOOCs). It also seems to have reignited keen interest in the learning and teaching literature. One of the key weaknesses across the reviewed literature was the initial unpreparedness of the universities to deal with the magnitude of the COVID-19 pandemic. Weaknesses identified in the literature would need to be addressed by universities if a long-term *contactless* model of learning and teaching is adopted. The largest area to address is the disparity in resources in order to ensure that students are neither struggling, feeling isolated, nor disadvantaged by a lack of access to technology, laptops and wireless internet access (Hodges et al., 2020; Crawford et al., 2020; Assunção Flores & Gago 2020; Pather et al., 2020) as all services that range from enrollment to mental health consultations are provided online. To combat these weaknesses and for the *contactless* university to succeed, equity issues must be seriously taken into consideration and addressed (Bozkurt & Sharma, 2020; Vielma & Brey, 2020; Crawford et al., 2020). It would be wise for universities to invest in an online learning infrastructure and develop ways to check-in with students to avoid frustration and

demotivation, particularly first-generation students (Soria et al., 2020; Vielma & Brey, 2020), international students, or those from disadvantaged and/or minority groups, the groups most vulnerable to falling behind. Soria et al. (2020) indicated for instance that the “lack of adequate study spaces and lack of technology” were key hurdles for first-generation students, preventing them from adapting to and completing their online courses.

Students: Opportunities and Threats

ERTL has been an opportunity for many non-traditional students, particularly those with work and family responsibilities, as it allowed them to spend more quality time with their family and decide and devise their own study schedules. Threats that may impede the move towards a *contactless* university include: the stigma that an online education is of lower quality when compared to face-to-face (Hodges et al., 2020), students being less likely to choose online when there is a face-to-face learning option (Aucejo et al., 2020) and that it takes a lot of time and financial resources to build a sustainable, online teaching model. A “good practice” model for online teaching and learning would also lessen the confusion and anxiety felt by students (Regher & Goel, 2020; Johnson et al., 2020; Aucejo et al., 2020; Donitsa-Schmidt & Ramot, 2020). It will also be important to reduce the threat to issues of academic integrity and online exams by implementing processes that build trust (Plather et al., 2020) and confidence among students and academic staff.

Another major threat, as reported by Aucejo et al. (2020) is that “lower-income students” were “55% more likely than their higher-income peers to have delayed graduation due to COVID-19,” which will have a significant (economic) impact on their future lifetime earnings and their ability to enter the workforce or repay their debt. Finally, according to Gallagher et al. (2020) a significant number of “students felt isolated from spiritual, social and practical supports” as churches, mosques and other places of worship were closed due to strict confinement measures, thus increasing their levels of solitude, stress, anxiety and frustration.

Faculty: Opportunities and Threats

The strengths identified in online learning, as experienced during COVID-19, provide opportunities for upskilling and practicing a new way of learning and teaching. A major theme from the literature was the emergence of a “pedagogy of care” (Bozkurt & Sharma, 2020; Alvarez, 2020; Gallagher et al., 2020; Vielma & Brey, 2020; Johnson et al., 2020; Pather et al., 2020). An increased awareness of students’ individual needs has the opportunity to produce a more inclusive learning environment. The increased use and familiarity with online communication tools such as Zoom, Teams, and Skype has the opportunity to facilitate increased professional networking and collaboration (Regher & Goel 2020; Crawford et al., 2020; Donitsa-Schmidt & Ramot, 2020).

Another opportunity lays in the idea that teaching resources could be shared between universities as a “resource commons,” allowing teaching staff to focus on teaching rather than the time-consuming task of creating new resources (Huang et al., 2020). As comfort with using online tools increases, there are opportunities for students and teachers to learn and upskill from each other (Mohammed et al., 2020) and for teaching staff to build their professional skillset (Sokhulu, 2020, Huang et al. 2020). Teaching staff would need to be supported in understanding how to effectively use online teaching technology and in developing resources so that they do not feel the threat of an increased workload, spending all their time developing resources rather than teaching (Assunção Flores & Gago, 2020) and engaging students.

University: Opportunities and Threats

There are opportunities for the university to offer financial support to students through employing students as assistants to assist staff with online learning (Regher & Goel, 2020), this also has the benefit of bridging the resource gap and provides students with valuable work experiences (Regher & Goel

2020; Soria et al., 2020). In contrast, the focus on quickly implementing ERTL may have distracted institutions from providing additional pastoral care to students, particularly to those most isolated or vulnerable.

The overall experience of Emergency Remote Teaching and Learning during the COVID-19 pandemic has produced an opportunity for innovation (Assunção Flores & Gago, 2020; Huang et al., 2020; Pather et al., 2020), the development of “best practice” in online pedagogy (Crawford et al., 2020; Huang et al., 2020), and for universities to grow their online teaching capabilities (Crawford et al., 2020; Johnson et al., 2020). Crawford et al. (2020) noted, however, that “not all universities” had the appropriate “resources or academic capabilities or capacity to transition to online delivery” (p.11). Moreover, one of the missing links was, according to Soria et al. (2020), the scarcity of off-campus mental health help during crises’ times. They advocated active work “to eliminate some of the barriers to students’ ability to seek mental health resources” during lockdowns.

Conclusion and Future Directions

This article explored the application of Emergency Remote Teaching and Learning and *contactless* experiences during COVID-19. The findings of this study indicate a number of important and transformational implications for future practice. They suggest several courses of action. First, in order to address the emergent theme of *dread of deskilling* and *de-professionalization* among academic staff, indicated in the findings of a survey of faculty teaching online in the United Kingdom, the United States and the EU during the COVID-19 (Watermeyer et al., 2020), and move beyond what Ubell (2020) described as a “first-aid approach” (para.15), we propose to (a) develop targeted systematic interventions aimed at developing academic staff digital competencies and encouraging upskilling (Santandreu Calonge & Shah, 2016; Santandreu Calonge, Shah, Riggs & Connor, 2019; Huang et al., 2020) in, for instance, learning design for online environments. In addition, (b) design well-thought, comprehensive continuing professional development programs on ERTL for academic and professional staff, whose aim will be to foster adaptability to uncertainty, develop digital empathy and restraint (Selwyn, 2020), explore new pedagogical approaches that include culturally-responsive teaching practices, and improve resiliency, as well as learning-agility. Gregory et al. (2020) argued that “teachers of the future” ought to be “adequately prepared to teach in on-line and blended contexts,” crucial skills which were “not addressed in many initial teacher education programs” (para.11), as recently shown in an Economist Intelligence Unit report on future-ready teaching (early-career and student teachers), only 38% felt their training has equipped them to use digital technology (Green, 2020, p.5).

Second, the adoption of a more people-centric institutional change approach and a reconsideration of university systems, preparedness plans and continuity planning procedures (often planned for face-to-face interactions) should be considered in a fully *contactless* environment, advocating what Alexander (2020) described as a “future-oriented mindset... the practice and imagination that strategic foresight provides, along with a willingness to thoughtfully experiment, in order to shoot the rapids that loom before us” (p.4).

Third, the creation of a sustainable robust (online) system-resilient educational ecosystem, as well as a learning and teaching risk management architecture and stronger support and pastoral care structures for local and international students, as well as faculty is also advocated. As argued by Devinney and Dowling (2020), the crisis might offer an impetus for change, the pandemic could well be a once-a-generation opportunity for “visionaries and risk-takers” to implement “real, meaningful change” (para.2).

Finally, inequitable access to education is not a new phenomenon, but in the wake of the COVID-19 experience inequalities in access to education have unfortunately resurfaced, been strengthened and amplified, as highlighted by the reviewed literature. When reflecting on remote learning policies, it has been reported that on a global scale, “3 out of 4 students who cannot be reached... come from rural areas

and/or belong to the poorest households” (UNICEF, 2020). Groups of higher education bodies in the UK (such as JISC) have for instance indicated that “digital poverty” was a major issue, that tens of thousands of university students “were ignored” by the government, which could result in a “lost generation”. These hurdles and increased “distancing” will inevitably “lead to inferior educational outcomes or disengagement” (Shah & Santandreu Calonge, 2019, p.2). Due to such circumstances, flexibility in the design, development, strategies, and policies towards Emergency Remote Teaching and Learning are essential to allow greater levels of inclusion and access for *all* students, but especially those deemed vulnerable. As a means to alleviate such inequalities, the future of education development should “not rely on any single remote learning channel” (UNICEF, 2020). Rather, the direction of processes in ERTL should be expansive and flexible enough to address diversities surrounding the circumstances of students and thus their needs towards accessible remote *contactless* education.

Limitations

A significant limitation to this study was the scarce number of published articles on this very topic due to ERTL during COVID-19 being, still, an emergent issue. This led to additional limitations such as: lack of access to institutional SWOT analyses for comparison purposes, the practical time constraints of the literature review period (December 2019-September 2020), as the authors wanted to assess the initial response from tertiary institutions.

Disclosure Statement

No potential conflict of interest was reported by the authors.

Author contributions

All authors contributed to the study conception, design and writing. All authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

References

- Alexander, B. (2020). *Academia Next: The Futures of Higher Education*. Johns Hopkins University Press.
- Alvarez, A. J. (2020). The phenomenon of learning at a distance through emergency remote teaching amidst the pandemic crisis. *Asian Journal of Distance Education*, 15(1), 127-143. Retrieved from <http://asianjde.org/ojs/index.php/AsianJDE/article/view/453>
- Assunção Flores, M., & Gago, M. (2020). Teacher education in times of COVID-19 pandemic in Portugal: national, institutional and pedagogical responses. *Journal of Education for Teaching*, 1-10. <https://doi.org/10.1080/02607476.2020.1799709>
- Aucejo, E. M., French, J., Araya, M. P. U., & Zafar, B. (2020). The impact of COVID-19 on student experiences and expectations: Evidence from a survey. *Journal of Public Economics*, 104271. <https://doi.org/10.1016/j.jpubeco.2020.104271>
- Bae, S. Y., & Chang, P.-J. (2020). The effect of coronavirus disease-19 (COVID-19) risk perception on behavioural intention towards ‘untact’ tourism in South Korea during the first wave of the pandemic (March 2020). *Current Issues in Tourism*. Taylor & Francis. <https://doi.org/https://doi.org/10.1080/13683500.2020.1798895>
- Bozkurt, A., & Sharma, R. C. (2020). Emergency remote teaching in a time of global crisis due to CoronaVirus pandemic. *Asian Journal of Distance Education*, 15(1), i-vi. <https://doi.org/10.5281/zenodo.3778083>
- Cheng, S. Y., Wang, C. J., Shen, A. C. T., & Chang, S. C. (2020). How to safely reopen colleges and universities during COVID-19: experiences from Taiwan. *Annals of Internal Medicine*. <https://doi.org/10.7326/M20-2927>



- Crawford, J., Butler-Henderson, K., Rudolph, J., Malkawi, B., Glowatz, M., Burton, R., ... & Lam, S. (2020). COVID-19: 20 countries' higher education intra-period digital pedagogy responses. *Journal of Applied Learning & Teaching*, 3(1), 1-20. <https://doi.org/10.37074/jalt.2020.3.1.7>
- Devinney, T; & Dowling, G. (2020, May 14). Is this the crisis higher education needs to have? *Times Higher Education*. <https://www.timeshighereducation.com/features/crisis-higher-education-needs-have>
- Donitsa-Schmidt, S., & Ramot, R. (2020). Opportunities and challenges: teacher education in Israel in the Covid-19 pandemic. *Journal of Education for Teaching*, 1-10. <https://doi.org/10.1080/02607476.2020.1799708>
- Flores, M.A; & Gago, M. (2020). Teacher education in times of COVID-19 pandemic in Portugal: national, institutional and pedagogical responses. *Journal of Education for Teaching*. <https://doi.org/10.1080/02607476.2020.1799709>
- Gallagher, H. L., Doherty, A. Z., & Obonyo, M. (2020). International student experiences in Queensland during COVID-19. *International Social Work*, 0020872820949621. <https://doi.org/10.1177/0020872820949621>
- George, M. L. (2020). Effective Teaching and Examination Strategies for Undergraduate Learning During COVID-19 School Restrictions. *Journal of Educational Technology Systems*, 49(1), 23-48. <https://doi.org/10.1177/0047239520934017>
- Green, A. (2020). *Staff of 2030: Future-ready teaching*. Economist Intelligence Unit. https://eiperspectives.economist.com/sites/default/files/eiu_microsoft_staff_of_2030_future-ready_teaching.pdf
- Gregory, S; Cornish, T; Bartlett-Taylor, T; Charteris, J; Whannell, R; & Anderson, J. (2020, May 13). With COVID-19 affecting school student attendance, on-line practicum placements are an alternative for teacher education students. *Campus Morning Herald*. <https://campusmorningmail.com.au/news/teacher-education-when-there-no-students-in-class/>? Accessed 6 August 2020.
- Hodges, C., Moore, S., Lockee, B., Trust, T., & Bond, A. (2020). The difference between emergency remote teaching and online learning. *Educause Review*, 27. Retrieved from <https://medicine.hofstra.edu/pdf/faculty/facdev/facdev-article.pdf>
- Hong, Q. N., Fàbregues, S., Bartlett, G., Boardman, F., Cargo, M., Dagenais, P., ... & Rousseau, M. C. (2018). The Mixed Methods Appraisal Tool (MMAT) version 2018 for information professionals and researchers. *Education for Information*, 34(4), 285-291. <https://doi.org/10.3233/EFI-180221>
- Huang, R., Tlili, A., Chang, T. W., Zhang, X., Nascimbeni, F., & Burgos, D. (2020). Disrupted classes, undisrupted learning during COVID-19 outbreak in China: application of open educational practices and resources. *Smart Learning Environments*, 7(1), 1-15. <https://doi.org/10.1186/s40561-020-00125-8>
- Johnson, N., Veletsianos, G., & Seaman, J. (2020). U.S. faculty and administrators' experiences and approaches in the early weeks of the COVID-19 pandemic. *Online Learning*, 24(2), 6-21. <https://doi.org/10.24059/olj.v24i2.2285>
- Kamenetz, A. (2020, March 26). The Biggest Distance-Learning Experiment In History: Week One. *NPR*. <https://www.npr.org/2020/03/26/821921575/the-biggest-distance-learning-experiment-in-history-week-one>
- Langford, M., & Damsa, C. (2020, April 17). Online Teaching in the time of Covid 19 – Academic Teachers Experiences in Norway. *Centre for Experiential Legal Learning (CELL)*. <https://www.jus.uio.no/cell/digitaldugnad/report-university-teachers-16-april-2020.pdf>
- Marsicano, C., Felten, K., Toledo, L., & Buitendorp, M. (2020). Tracking Campus Responses to the COVID-19 Pandemic. *APSA Preprints*. <https://doi.org/10.33774/apsa-2020-3wvrl>



- Moher, D., Liberati, A., Tetzlaff, J., Altman, D. G., & Prisma Group. (2009). Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *PLoS med*, 6(7), e1000097. <https://doi.org/10.1371/journal.pmed.1000097>
- Mohammed, A. O., Khidhir, B. A., Nazeer, A., & Vijayan, V. J. (2020). Emergency remote teaching during Coronavirus pandemic: the current trend and future directive at Middle East College Oman. *Innovative Infrastructure Solutions*, 5(3), 1-11. <https://doi.org/10.1007/s41062-020-00326-7>
- Pather, N., Blyth, P., Chapman, J. A., Dayal, M. R., Flack, N. A., Fogg, Q. A., ... & Morley, J. W. (2020). Forced Disruption of Anatomy Education in Australia and New Zealand: An Acute Response to the Covid-19 Pandemic. *Anatomical sciences education*, 13(3), 284-300. <https://doi.org/10.1002/ase.1968>
- Raaper, R., & Brown, C. (2020). The Covid-19 pandemic and the dissolution of the university campus: Implications for student support practice. *Journal of Professional Capital and Community*. <https://doi.org/10.1108/JPC-06-2020-0032>
- Regehr, C., & Goel, V. (2020). Managing COVID-19 in a Large Urban Research-Intensive University. *Journal of Loss and Trauma*, 1-17. <https://doi.org/10.1080/15325024.2020.1771846>
- Santandreu Calonge, D., & Shah, M.A. (2016). MOOCs, graduate skills gaps, and employability: A qualitative systematic review of the literature. *International Review of Research in Open and Distributed Learning: IRRODL*, 17(5), 67-90.
- Santandreu Calonge, D., Shah, M.A., Riggs, K., & Connor, M. (2019). MOOCs and upskilling in Australia: A qualitative literature study. *Cogent Education*, 6(1), 1687392.
- Selwyn, N. (2020, April 30). Online learning: Rethinking teachers' 'digital competence' in light of COVID-19. *Monash Lens*. Monash University. <https://lens.monash.edu/2020/04/30/1380217/online-learning-rethinking-teachers-digital-competence-in-light-of-covid-19>
- Shah, M. A., & Santandreu Calonge, D. (2019). Frugal MOOCs: an adaptable contextualized approach to MOOC designs for refugees. *International Review of Research in Open and Distributed Learning*, 20(5), 1-19. <https://doi.org/10.19173/irrodl.v20i4.3350>
- Shisley, S. (2020, May 20). Emergency Remote Learning Compared to Online Learning. *Learning Solutions Mag*. <https://learningsolutionsmag.com/articles/emergency-remote-learning-compared-to-online-learning>
- Sokhulu, L. H. (2020). Students' experiences of using digital technologies to address their personal research needs during the COVID-19 lockdown. *African Identities*, 1-17. <https://doi.org/10.1080/14725843.2020.1801384>
- Soria, K. M., Horgos, B., Chirikov, I., & Jones-White, D. (2020). First-Generation Students' Experiences During the COVID-19 Pandemic. Student Experience in the Research University (SERU) Consortium. *University of Minnesota Digital Conservancy*. <http://hdl.handle.net/11299/214934>
- Strauss, V. (2020, March 27). 1.5 billion children around globe affected by school closure. What countries are doing to keep kids learning during pandemic. *The Washington Post*. Retrieved from <https://www.washingtonpost.com/education/2020/03/26/nearly-14-billion-children-around-globe-are-out-school-heres-what-countries-are-doing-keep-kids-learning-during-pandemic/>
- Ubell, R. (2020, May 13). How Online Learning Kept Higher Ed Open During the Coronavirus Crisis. *IEEE Spectrum*. <https://spectrum.ieee.org/tech-talk/at-work/education/how-online-learning-kept-higher-ed-open-during-the-coronavirus-crisis>
- UNICEF. (2020). Education and COVID-19. Retrieved February 15, 2021, from <https://data.unicef.org/topic/education/covid-19/>
- Vielma, K., & Brey, E. M. (2020). Using Evaluative Data to Assess Virtual Learning Experiences for Students During COVID-19. *Biomedical Engineering Education*, 1-6. <https://doi.org/10.1007/s43683-020-00027-8>



Vlachopoulos, D. (2020). COVID-19: Threat or Opportunity for Online Education? *Higher Learning Research Communications*, 10 (1), 16-19.

Watermayer, R; Crick, T; Knight, C; & Goodall, J. (2020). Forced shift to online teaching in coronavirus pandemic unleashes educators' deepest job fears. *Nature Index*. <https://www.natureindex.com/news-blog/forced-shift-to-online-teaching-in-coronavirus-pandemic-unleashes-educators-deepest-job-fears->

Whittle, C., Tiwari, S., Yan, S., & Williams, J. (2020). Emergency remote teaching environment: A conceptual framework for responsive online teaching in crises. *Information and Learning Sciences*. <https://doi.org/10.1108/ILS-04-2020-0099>

Wotto, M. (2020). The Future High Education Distance Learning in Canada, the United States, and France: Insights From Before COVID-19 Secondary Data Analysis. *Journal of Educational Technology Systems*, 49(2), 262-281. <https://doi.org/10.1177/0047239520940624>

Appendix 1. Quality evaluation of included studies using the mixed methods appraisal tool (Hong et al. 2018 version)

	Qualitative Studies					Randomized Controlled Trials					Non-Randomized Trials					Quantitative Descriptive Studies					Mixed Methods				
	1	1	1	1	1	2	2	2	2	2	3	3	3	3	3	4	4	4	4	4	5	5	5	5	5
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Hodges, C., Moore, S., Lockee, B., Trust, T., & Bond, A. (2020).																Y	Y	Y	Y	Y					
Bozkurt, A., & Sharma, R. C. (2020).																Y	Y	Y	Y	Y					
Alvarez, A. J. (2020).	Y	Y	Y	Y	Y						N	Y	C	C	Y										
Whittle, C., Tiwari, S., Yan, S., & Williams, J. (2020).	Y	Y	Y	Y	Y						N	Y	Y	C	Y										
Mohammed, A. O., Khidhir, B. A., Nazeer, A., & Vijayan, V. J. (2020).	Y	Y	Y	Y	Y											Y	Y	Y	Y	C					
Soria, K. M., Horgos, B., Chirikov, I., & Jones-White, D. (2020).	Y	Y	Y	Y	Y																Y	Y	Y	Y	Y
Gallagher, H. L., Doherty, A. Z., & Obonyo, M. (2020).	Y	N	C	N	N																				
Regehr, C., & Goel, V. (2020).	Y	Y	Y	Y	C																				
Raaper, R., & Brown, C. (2020).	Y	C	C	Y	C																				
Vielma, K., & Brey, E. M. (2020).	Y	Y	Y	Y	Y											Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
George, M. L. (2020).	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y											Y	Y	Y	Y	Y
Crawford, J., Butler-Henderson, K., Rudolph, J., Malkawi, B., Glowatz, M., Burton, R., ... & Lam, S. (2020).	Y	Y	Y	Y	Y											Y	Y	Y	Y	Y					
Johnson, N., Veletsianos, G., & Seaman, J. (2020).	Y	Y	Y	Y	Y											Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Cheng, S. Y., Wang, C. J., Shen,	Y	C	C	Y	C																				



A. C. T., & Chang, S. C. (2020).									
Aucejo, E. M., French, J., Araya, M. P. U., & Zafar, B. (2020).	Y	Y	Y	Y	Y	Y	Y	Y	Y
Marsicano, C., Felten, K., Toledo, L., & Buitendorp, M. (2020).	Y	Y	Y	Y	Y	Y	Y	Y	Y
Sokhulu, L. H. (2020).	Y	Y	Y	Y	Y				
Assunção Flores, M., & Gago, M. (2020).	Y	Y	Y	Y	Y				
Wotto, M. (2020).	Y	Y	Y	Y	Y				
Donitsa-Schmidt, S., & Ramot, R. (2020).	Y	C	C	Y	C				
Huang, R., Tlili, A., Chang, T. W., Zhang, X., Nascimbeni, F., & Burgos, D. (2020).	Y	Y	Y	Y	Y				
Pather, N., Blyth, P., Chapman, J. A., Dayal, M. R., Flack, N. A., Fogg, Q. A., ... & Morley, J. W. (2020).	Y	Y	Y	Y	Y				

Y = yes; N = no; C = cannot tell

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