Emergency Remote Learning During COVID-19: Socio-educational Impacts on Portuguese Students

Luciana Oliveira1, Anabela Mesquita2, Arminda Sequeira1, and Adriana Oliveira1

1 CEOS.PP, ISCAP Polytechnic of Porto, Rua Jaime Lopes Amorim s/n, Matosinhos, Portugal
lgo@eu.ipp.pt
2 Polytechnic of Porto and Algoritmi RC, Rua Jaime Lopes Amorim s/n, Matosinhos, Portugal

Abstract. The pandemic caused by COVID-19 is not just a global crisis, it is ‘the first’ global crisis, and as the mandatory confinement shifted all education to Emergency Remote Instruction/Teaching/Learning, Higher Education Institutions were faced with the heavy task of balancing the immediate massive technological-pedagogical request by teachers and providing students with the socio-educational support that they need. This paper analyses the socio-educational impacts of the current confinement period on student’s lives and how they are responding to implemented ERL solutions, specifically in a stage of abundant pressing changes in which critical challenges are mostly felt. A close-ended questionnaire was built, comprising six dimensions of issues that may impact ERL: educational and organizational issues, technological and working conditions, social issues, family-related issues, psychological issues, and financial issues. Results were collected right after the first month of ERL and reveal that the most severe problems reside on the pedagogical and psychological domains.

Keywords: Emergency Remote Learning · COVID-19 · Socio-educational analysis

1 Introduction

In the current context of global confinement due to the COVID-19 pandemic crisis, higher education institutions have shifted from face-to-face or blended instruction to fully remote instruction, to ensure the bare minimum provision of education to its students, adhering to what has been recently coined as Emergency Remote Teaching (ERT) and Learning (ERL). According to Hodges et al. [1], ERT can be defined as a “temporary shift of instructional delivery to an alternate delivery mode due to crisis circumstances”. This approach “involves the use of fully remote teaching solutions for instruction or education that would, otherwise, be delivered face-to-face” and “return [ing] to that format once the crisis or emergency” is over. As such the aim of ERT consists of providing temporary access to instruction and instructional support, in...
synchronous and asynchronous formats, in reliable ways during a particular moment and is essentially a shift of delivery modes, methods and media which are progressively adjusted to the available settings, resources and limitations of organizations, teachers and students. It is distinct from most elaborated forms of technology-mediated instruction, such as e-learning, b-learning and m-learning, which consist of well-planned online learning experiences supported by robust educational ecosystems. Global awareness of this distinction is critical for organizations, teachers, students, and society so that an assessment of current practices does not collide with the principles of the various long-term established models of technology-mediated education. Having said that, what students are experiencing all over the world, during the Spring of 2020, is not online learning but remote learning, defined as a “quick, ad-hoc, low-fidelity mitigation strategy” [2].

The generalized absence of contingency plans in the transition from the face-to-face instruction to the ERL and ERT has pushed organizations and teachers to focus on easy-to-implement operational strategies that facilitate the transmission of instruction, much in the fashion of guaranteeing the continuity of the provision of a service, but with a considerable, and yet somewhat inevitable, level of unawareness and inattention towards the receiver - the student. Undoubtedly, all educational measures implemented so far are aimed at resuming instruction and supporting students. However, there has not been much space or opportunity to investigate how the current crisis is impacting students lives, particularly in aspects that may pose additional challenges or impediments to ERL. Therefore, this paper aims to analyse the socio-educational impacts of the current confinement period on students lives and how they are responding to implemented ERL solutions, specifically in a stage of abundant pressing changes in which critical challenges are most felt.

2 Background

The confinement period imposed by the pandemic crisis caused by COVID-19 forced HEI to close all in-person activities and to ensure the provision of education through any technological means. The urgent and unplanned transition to fully remote instruction posed real challenges to all actors involved in the process, namely teachers, students, and staff, requiring an immediate and unprecedented digitalization of education. The impacts of the transition to fully remote instruction cannot, however, be evaluated only at the educational level, particularly for students, because it consists of the broader social shift with multilevel repercussions on educational/pedagogical, technological and working conditions, social, family-related, psychological and financial issues.

2.1 Educational/Pedagogical Issues

The pandemic situation had a profound impact on education and pedagogy. The loss of face-to-face contact and direct interactions with both peers and teachers may potentially stunt students’ development as students are being taught topics related to traditional practical-based learning materials or models [3]. That may be the case of Anatomy
learning without cadavers which is generally seen as less favorable [4]. There are applications and simulators that replace these practical classes but there is also a learning curve to use them, besides the costs associated.

Another challenge is related to the interaction. Knowledge is socially created, and this means that it hatches from interactions. In face-to-face instruction, the teacher needs to consider and promote interaction between students, students and the content and students and the teacher. It is the presence of all these types of interaction that increases the learning outcomes. This means that there is a need for careful planning for online learning which should include, not just identifying the content to cover, but also tending to how teachers can support different types of interactions that are important to the learning process. This approach recognizes learning as both a social and a cognitive process, not merely a matter of information transmission [1]. As an attempt to reduce the distance between learners, teachers are using chat rooms or real-time tutorials, but these solutions always have some kind of limitation.

In the transition from face-to-face teaching to online delivery has a serious impact on assessments and evaluation. Although technology has been used earlier to support teaching and learning, the assessment aspect is often under-developed [5]. Applying assessments online on those courses designed for face-to-face learning is a challenging task. In cases where the assessment was done, mostly, with a written examination and oral viva (for instance, disciplines in medicine), the move to online examinations requires the preparedness of teachers and students. If scores are lower, citizens might think that these professionals are not as good as those who graduated in the past. Moreover, students, as well as faculty members, are uncertain about the procedure for administering assignments, projects, and other continuous assessments [6, 7]. Teachers must rethink assessment and develop monitoring and antiplagiarism strategies [8].

Another challenge relies on the readiness of teachers and required technological support. The quick transition to ERL did not allow teachers, students, and schools to prepare in advance nor to immediately provide the required massive technological and pedagogical support. This means that teachers and students were often left alone in solving the problems. As a result, keeping quality is a struggle and not all problems are solved, which has been reported as additional stress for the teachers [1]. Moreover, issues regarding the technological proficiency of teachers [9, 10] and universities not having enough infrastructure or resources to facilitate online teaching with immediate effect [11], have also been raising.

Another aspect resides on lectures consisting of an instructional component of an overall ecosystem designed to support learners with formal, informal, and social resources. Efficient online education requires an investment in an ecosystem of learners’ support, which takes time to identify and build. Of course, it is possible to use a simple online content delivery which can be quick and inexpensive. But it can be confusing and not robust. This means it is important to build a whole ecosystem integrating all sorts of instruction. And for that, planning a design process is the key [1]. Thus, issues of online design must be taken into consideration as well. In a period of crisis and crisis response, there is an increased risk of diminishing the quality of the courses delivered. If there was already a stigma concerning the online instruction, with people thinking it has lower quality, this prejudice may be exacerbated with this quick move online, without the proper preparation of all the key actors involved. Usually, a
full-course development project can take months when done properly. The need to “just get it online” is in direct contradiction to the time and effort normally dedicated to developing quality education.

2.2 Technological and Working Conditions

In the current context, technology is central for teachers and students but it may be less accessible for students, as some of them do not have computers, and others may have to share the one computer they have, as parents and siblings are also working remotely during the crisis. Furthermore, the lack of internet access is exacerbating the digital divide [1].

Pandemic instigates a digital revolution in academia and higher education [12]. Social distancing, months-long quarantine, and economic shutdown will broaden the understanding of the majority of people working in academia and higher education. It will propel the transition to the fully functional and operational online instruction but also the integration and management of online admissions, online examination, assessment and vivas, as well as the understanding that online academic jobs are as effective and as meaningful as those performed “in real life”. Digitalization in higher education allows streaming lectures online or enables professors and students to interact in the virtual environments but not everyone is ready for this and even young people, who usually spend a lot of time in online activities, confess that they would have preferred being lectured in traditional classrooms and universities’ facilities.

On the plus side, due to the crisis, innovations in academia and higher education that would have normally taken several years to introduce due to the contradictory administrative regulations, are now introduced quickly in a matter of days. This is a clear example of the Schumpeterian ‘creative destruction’ in making and will forever change the status quo in academia and higher education.

2.3 Social Issues

The pandemic situation has brought a sudden disruption in the everyday life of schools, colleges, and universities, influencing more than 1.7 billion students worldwide. Closing schools introduced several challenges to students and their families and one of the most important concerns is related to how the government and education system handled the pandemic crisis with the study-from-home approach. Surveys suggest that students experience severe limitations on particular subjects that benefit from physical interaction with the materials, and tend to lose the “pacing mechanism” of scheduled lectures, thus having a higher chance of dropping out than those in traditional settings [13, 14].

Another concern is related to the impact of the pandemic situation on this year’s university graduates [10]. These future graduates are experiencing major interruptions in teaching and assessment in the final part of their studies. This can imply, for some of them, to graduate later than they expected and also entering the job market later. These young graduates will have to face the severe challenges of the global recession caused by the COVID-19 crisis, including career challenges and not so well-paid jobs, besides unemployment.
2.4 Family-Related Issues

Issues concerning the family pertain to two different scopes: on one side, it relates to structure and stability of family income and, on the other hand, it relates with the conditions of the physical space that the family has to share, which may be too small once, predictably, all members may be in confinement and having to share a space that may prove to be too small, which raises questions of privacy but also questions of equipment (desktops, laptops or iPads) and internet access sharing. If the family is experiencing income shrinking, the continuation of studies may be threatened. The stability of family income was also a significant factor in students’ experiencing anxiety during the COVID-19 crisis, which could be explained by increased psychological and economic pressure [15]. Moreover, issues of privacy and poor physical overall conditions may have an impact on the ability to attend online classes and develop remote activities.

2.5 Psychological Issues

One of the most evident psychological problems concerns anxiety [10, 16], followed by fear, worry, depression and traumatic stress, the last two more visible among people working in the healthcare system [10]. These psychological issues have their origin in the feeling of uncertainty about what is going to happen, namely, on the studies [17], future employment [18], and psychological health of students [19, 20].

This anxiety and stress may have been caused by the gradually increasing distance between people resulting from the quarantine and affects all students and in particular, those staying far from home as they are not only worried about their health, safety, and education but they also have concerns for the wellbeing of their families. Moreover, it is known that anxiety disorders are more likely to occur and worsen in the absence of interpersonal communication [21, 22], which is the case. The significant shortage of masks and disinfectants, the overwhelming and sensational news headlines, and erroneous news reports also contributed to this effect [23].

Studies also show that the anxiety regarding the epidemic was associated with the place of residence of the students, source of parental income, whether living with parents and whether a relative or an acquaintance was infected with COVID-19 [16]. Living with parents is a favourable factor against feeling anxious. Moreover, social support not only reduces the psychological pressure during the epidemics but also changes the attitude regarding social support and help-seeking methods. This result suggests that effective and robust social support is necessary during public health emergencies [24].

In some countries, for some individuals, the psychological impact of the pandemic situation was suggested to have been greater than the physical health danger posed by the diseases themselves [25] affecting the mental health of college students.

2.6 Financial Issues

In the context of an epidemic crisis coupled with an economic crisis, students will experience more difficulties, even if classes take place at distance as they will need to
invest in good quality equipment and internet access. Moreover, families are not prepared to perceive distance education as having the same quality as face-to-face instruction and so they will not be prepared to pay the same amount of money for the tuition fees. In fact, a reduction or refund of the tuitions has already been discussed on the media. According to The Guardian, the UK National Union of Students (NUS) believes that students should get a year’s refund of tuition due to Covid-19 crisis, which is something that HEI, in general, are not willing to do [26]. In Portugal, some HEI are providing extended deadlines for the quarterly payments. An NUS study also states that 85% of working students will need additional financial support because they have lost their jobs as a result of the pandemic and subsequent lockdown [26].

In addition, the economic crisis and the sanitary measures to combat the epidemic will produce a significant personal income shrinkage [27]. This might result on an increase of the number of working students, as it is often college students who report the highest levels of financial strain, defined by their perceptions of economic stress or lack of financial support from their families, that feel most compelled to work during their undergraduate studies [28, 29]. On the other hand, as distance education does not require the student to move to the city/region where the university is located, this means that those who previously could not afford or did not want to relocate can now apply for admission in a university in another region [27]. Finally, it is known that students’ financial situation has a high impact on a student’s dropout decision [30].

3 Methodology

The adopted methodology consists of an exploratory survey-based research. Exploratory research is characterized by employing a single data collection method to obtain an initial view of the issues being analysed. Provided the scarceness of literature and systematization on the socio-educational impacts of the current confinement period on student’s lives and on how they are responding to implemented ERL solutions, the authors propose an evaluation instrument, close-ended questionnaire, comprised of 67 items organized in six dimensions of issues that may impact ERL, as follows: (A) Educational and organizational issues – 33 items, (B) Technological and working conditions – 5 items, (C) Social issues – 11 items, (D) Family-related issues – 4 items, (E) Psychological issues – 6 items, (F) Financial issues – 8 items. Each item on the questionnaire was presented in a labelled 4-point Likert scale. Items on the scale were anchored at 1 = never, 2 = rarely, 3 = frequently, and 4 = always. Higher scores represent the higher frequency of the item.

According to the literature review, these are the current critical dimensions affected by the confinement period in students’ lives and that there is a high degree of correlation and interchanges among these. The research strategy is, therefore, based on tackling a multidimensional analysis of the students contexts, by focusing on a broader picture, rather than on an isolated specific dimension. At this stage of research, a multidimensional analysis is considered more beneficial, even in detriment of some depth, which may be later explored, as very little is known about how students are coping.
The survey was disseminated among students enrolled in HEI in Northern Portugal, through social media channels, namely in institutional public pages and open groups. Survey data were downloaded and transferred into IBM SPSS Statistics 26.0 statistical analysis software package for analysis.

4 Results

Overall, 197 questionnaires were excluded because they were not fully answered. At the end, 360 valid answers were obtained. The scores of the counter items were reversed prior to conducting the analysis.

4.1 Demographics and Transition to ERL

The great majority of the participants are female (74.72%), aged 18 to 22 years (83.06%), living in districts located in Northern Portugal. Non-working students make up 78.33% of the sample, though the percentage of working students (20%) is relevant. Regarding financial aid, 36% of the students are currently benefiting from a scholarship and approximately 76% of these believe they will still need it in the future. The percentage of students not receiving financial aid is substantial (60%), however, 25% of these believe they will need it in the future. Around half of the respondents (≈ 42%) has changed residence during the confinement period, which indicates that a significant amount of students who were displaced have returned to their family (or other) homes, having abandoned student lodging.

A portion of 78% of the students indicates having unlimited access to the Internet connection, while the remaining 20% have conditioned access or (1%) none at all. However, approximately 95% (n = 341) of the students indicate that they are currently involved in some form of online learning during the confinement period, which can be read as a rapid large scale response from schools to ERL. Among these students, (n = 341) only about 8% state having had contact with any form on online learning before the current context ERL imposed by COVID-19. Also, worth to notice that, more specifically, a priori, 19% of the students attending online learning have connection restrictions, which may add to the functional difficulties that may build on top of any other learning or personal challenges. Finally, the most used devices are laptops (95%) and smartphones (93%), followed by tablets (31%) and desktops (20%).

On average, the respondents for the subsample of students attending online learning (n = 341), were enrolled in 7 regular courses in the second semester of the school year 2019–2020, with most answers varying between 5.53 and 8.47 (σ = 1.47). Regarding the courses in which students had no access to ERL, these vary between 0 (Min) and 12 (Max), with a low average of 1.70 and with most responses comprised between 0 and ≈ 2 (σ = 1.95). This means that students were provided with access to ERL in about 76% of their courses within the first month of the confinement imposed the COVID-19 pandemic.

Regarding the delivery methods for ERL, students were provided with simplified descriptions of the modes synchronous (“Courses based essentially in videoconference classes”), asynchronous (“Courses based essentially in autonomous readings, watching
videos, doing exercises and other autonomous prescribed work”) and mixed (“A combination of the two above situations”). Results show that, on average, the synchronous mode is the most frequent ($\bar{x} \approx 3$), followed by mixed ($\bar{x} \approx 3$), and asynchronous ($\bar{x} \approx 2$). For most students, the majority of courses delivered in synchronous mode vary between 2 and 5, the courses delivered in mixed mode vary between 1 and 4 and, despite the average value, the courses delivered in asynchronous mode vary between 1 and 5, moving this mode up to second favourite ($Mo = 2$).

Finally, the most used systems in ERL are, in decreasing order, Colibri Zoom, Moodle and Microsoft Teams. The other systems referred by students are, Skype (2.93%), BlackBoard (1.17%), Google Hangouts (1.17%), Cisco Webex (0.59%) and Email (0.29%).

4.2 ERL Impacts on Students’ Lives

Cronbach’s alpha, a measure of intercorrelation among measurement items used as an indicator of internal consistency was calculated for the non-demographic Likert-scale questions. The items worded negatively were reverse coded and results show Cronbach’s $\alpha = 0.89$, indicating acceptably high internal consistency ($\geq 0.70$ is considered the minimum acceptable for use in research [31]). For all items, the maximum value is 4 (“Always”).

Educational Context. The first 12 items of the survey (A1-A10) focus on assessing information and work proposed by teachers and on the teacher-student relationship. On average, students report that teachers have developed strategies that permitted to (A1) resume the work that was held in the classroom ($\bar{x} = 3.28$), with no reports of this not being possible at all ($Min = 2$), that (A10) teachers are using adequate software and resources for ERL ($\bar{x} = 3.11$), and that teachers have frequently provided (A2) clear information on how ERL is implemented ($\bar{x} = 2.34$), and that they (A7) are available to answer inquiries ($\bar{x} = 3.44$), though rarely (A12) the diversity of course materials ($\bar{x} = 2.36$) and the (A11) amount of materials has changed ($\bar{x} = 3.15$). With less consensus, but on average, students also believe that (A3) the classwork proposed by teachers is adequate ($\bar{x} = 2.79$) and that teachers have the necessary competencies to manage ERT ($\bar{x} = 2.91$).

Concerning the teacher-student relationship, students report that teachers have, on average, frequently (A6) created alternative mechanisms to keep in touch with students (such as chat rooms on social media) ($\bar{x} = 2.86$), that (A5) this contact is aligned with their needs ($\bar{x} = 2.80$). The most critical aspects in these subcategories, concerning the teacher-student relationship, rely on how frequently (A9) they feel close to their teachers ($\bar{x} = 2.70$ and $\sigma = 0.78$), though no one answered “never”, and (A8) students feel that teachers worry about their well-being ($\bar{x} = 3.13$ and $\sigma = 0.73$).

Regarding assessment, on average, students indicate that frequently (A13) they have participated in some form of online assessment ($\bar{x} = 2.93$) and that (A14) the assessment tools are adequate ($\bar{x} = 2.66$). The great majority indicate that (A15) they were not taken the possibility to pursue continuous assessment ($\bar{x} = 1.48$) and they (A16) did not request their assessment mode to be changed ($\bar{x} = 1.32$). The critical aspect regarding
assessment relies on the fact that, frequently, teachers (A17) altered the assessment components in such a way that it is not most beneficial to students ($x = 2.48$).

Regarding the institutional support, students believe that the HEI has frequently (A20) provided clear information on the implementation of ERL ($x = 2.95$) and that the (A21) HIE is compromised with their academic success ($x = 2.91$), which lead them to (A21) increase the usage of institutional digital channels, such as their school email inbox ($x = 3.04$).

Among the remaining items, as the most positive, students report that, frequently, on average, (A19) it is easy to work with their classmates ($x = 2.60$), (A27) the online classes are interactive allowing to actively participate ($x = 2.96$), and they have (A28) all the competencies necessary for participating in ERL ($x = 3.27$). Most of the students are rarely (A29) preoccupied with their privacy in online learning ($x = 2.08$).

The most critical aspects regarding the educational dimension rely on students feeling that ERL is (A25) more exhausting than traditional classes ($x = 2.79$), that they (A24) do not learn as much as they did in traditional classes ($x = 2.21$), and that (A26) the workload is heavier ($x = 2.08$). As a consequence, students feel (A23) less motivated for ERL ($x = 2.42$), less (A30) optimistic regarding their academic success ($x = 2.35$), and (A33) less likely to be interested in enrolling in any form of online learning in the future ($x = 2.23$). Despite these, students have frequently been (A31) trying to maintain their work/study routine ($x = 2.29$) and believe that (A32) the bare minimum quality of their education is preserved ($x = 2.74$).

**Working Conditions.** Most of the students report (B34) having all the necessary equipment ($x = 3.63$) and (B37) a proper workspace for participating in online classes ($x = 3.19$). Also, they rarely (B35) need to share their equipment with others ($x = 1.60$) and, although as not unanimously, they (B36) do not need to share their workspace ($x = 2.04$) nor (B38) are disturbed by other people living in the house ($x = 2.18$).

**Psychological and Physical Wellbeing.** This is the dimension in which the overall evaluation is significantly lower and troubling. Most students report (C44) increased sleeping disorders ($x = 2.87$, with $Mo = 4$), (C40) lower motivation ($x = 3.13$), (A41) increased anxiety ($x = 3.05$), (C39) increased exhaustion ($x = 3.04$), (C43) feeling more nervous ($x = 2.95$), and (C42) feeling sadder than usual ($x = 2.84$). Adding to this, most students have not had (C46) more time for hobbies ($x = 2.66$; $\sigma = 0.87$) though some have been practicing exercise ($x = 2.69$). Students have not been receiving any kind of psychological support from their schools, such as support emails or online psychology appointments ($x = 1.42$). On a positive note, students do not feel that (C49) when their schools closed they lost access to a safe space ($x = 2.11$) and (C48) thinking about returning to regular classes rarely makes them anxious ($x = 2.13$).

**Social Interactions.** It is almost unanimous that students always (D50) miss their school friends/colleagues ($x = 3.45$; $Mo = 4.00$) Most of them frequently (D52) contact with friends/colleagues ($x = 3.33$), as some believe that (D51) their well-being depends on it ($x = 2.81$). Students feel that the suspension of traditional classes has rarely (D52) caused them any relationship difficulties with their school friends/colleagues ($x = 1.98$).
Family Context. For most students, their (E54) family context is frequently beneficial for their participation in ERL ($\bar{x} = 3.02$ and $\text{A59 with } \bar{x} = 1.38$). Answers indicate that (E55) their families respect their personal space and work/study hours ($\bar{x} = 3.40$; $Mo = 4$), they (E56) feel valued in their family circle ($\bar{x} = 3.29$), and they feel that they (E58) can talk about their problems and concerns ($\bar{x} = 3.06$). The COVID-19 pandemic has rarely (E57) required students to become informal caregivers of family members ($\bar{x} = 1.70$; $Mo = 1$).

Financial Situation. On average, students (F60) feel frequently worried about their financial situation ($\bar{x} = 2.81$; $Mo = 3$). On a positive note, students (F61) did not have to buy equipment/devices specifically for ERL ($\bar{x} = 1.28$) and there are not such impediments to ERL ($\bar{x} = 1.24$). Even though students indicate that during the confinement period they were able to (F64) save money in transportation ($\bar{x} = 3.70$), they were rarely able to save money in (F65) food ($\bar{x} = 2.73$) and (F63) school supplies ($\bar{x} = 2.04$) and were never able to save money in (F66) rent ($\bar{x} = 1.42$).

5 Conclusion

Taking into consideration the unforeseen and deeply impactful character of the situation caused by the COVID-19 pandemic, results show an overall better scenario than expected, as there are dimensions in which the negative impacts are fewer (not so notable). In the social dimension, despite missing face-to-face interaction, interactions appear to keep flowing at distance, which is a characteristic of Gen Y and Z. The family context also appears to be beneficial to student’s wellbeing and their ERL activities, as most students have the necessary conditions for ERL. Moreover, the financial situation does not seem problematic, although, after returning home students kept paying for accommodation near schools. In the educational context, there are two main aspects. The provided structures, resources, and tools for ERL appear sufficient. The administrative side of ERL seems to be working well, with clear indications, instructions, and guidelines, provided by teachers and schools.

The negative impacts are mostly felt at two levels: the management of the classwork and the social-educational interactions (educational), and the psychological wellbeing. Although provided with all the necessary educational resources students lack the social interaction with teachers and colleagues and refer to low personal involvement from teachers. Also, ERL is notably more exhausting and not as fulfilling, as students report on a much heavier workload and on perceiving that they learn less. Consequently, students feel less optimistic regarding their academic success and less interested in pursuing online learning in the future, despite recognizing that the bare minimum quality of education is preserved. The most problematic dimension is the psychological one. A significant number of students revealed sleeping disorders, lower motivation, increased anxiety, incremented nervousness, sadness and, maybe due to the workload, no time for hobbies. Students state that schools have not granted access to any kind of psychological support or online appointments.
These results characterize the main difficulties of the first month of transition to ERL and, considering the main risks identified, are relevant for HEI and educators in designing organizational support and pedagogical interactions.

Acknowledgments. This work is financed by Portuguese national funds through FCT - Fundação para a Ciência e Tecnologia, under the project UIDB/05422/2020.

References

1. Hodges, C., et al.: The difference between emergency remote teaching and online learning. EDUCAUSE Review (2020). https://er.educause.edu/articles/2020/3/the-difference-between-emergency-remote-teaching-and-online-learning
2. Craig, R.: What Students Are Doing Is Remote Learning, Not Online Learning. There’s a Difference. - EdSurge News. 2020 2020-04-02. https://www.edsurge.com/news/2020-04-02-what-students-are-doing-is-remote-learning-not-online-learning-there-s-a-difference
3. Franchi, T., The Impact of the Covid-19 Pandemic on Current Anatomy Education and Future Careers: A Student’s Perspective. Anatomical Sciences Education, 2020.
4. McLachlan, J.C., et al.: Teaching anatomy without cadavers. Med. Educ. 38(4), 418–424 (2004)
5. Timmis, S., et al.: Rethinking assessment in a digital age: opportunities, challenges and risks. Br. Educ. Res. J. 42(3), 454–476 (2016)
6. Kearns, L.R.: Student assessment in online learning: challenges and effective practices. J. Online Learn. Teach. 8(3), 198 (2012)
7. Raaheim, A., et al.: Digital assessment–how does it challenge local practices and national law? a Norwegian case study. Eur. J. High. Educ. 9(2), 219–231 (2019)
8. Watson, G.R., Sottile, J.: Cheating in the digital age: Do students cheat more in online courses? (2010)
9. Lee, K.: Coronavirus: universities are shifting classes online – but it's not as easy as it sounds (2020) https://theconversation.com/coronavirus-universities-are-shifting-classes-online-but-its-not-as-easy-as-it-sounds-133030
10. Sahu, P., Closure of Universities Due to Coronavirus Disease 2019 (COVID-19): Impact on Education and Mental Health of Students and Academic Staff. 2020, Cureus.
11. Dill, E., et al., As Coronavirus Spreads, the Decision to Move Classes Online Is the First Step. What Comes Next? 2020.
12. Strielkowski, W.: COVID-19 pandemic and the digital revolution in academia and higher education (2020)
13. Fedynich, L.V., Teaching beyond the classroom walls: The pros and cons of cyber learning. Journal of Instructional Pedagogies, 2013. 13.
14. Morrison, G.R., et al.: Designing effective instruction. John Wiley & Sons (2019)
15. Woodgate, R.L., et al.: The experience of the self in Canadian youth living with anxiety: a qualitative study. PLoS ONE 15(1), e0228193–e0228193 (2020)
16. Cao, W., et al.: The psychological impact of the COVID-19 epidemic on college students in China. Psychiatry Res. 287, 112934 (2020)
17. Cornine, A.: Reducing Nursing Student Anxiety in the Clinical Setting: An Integrative Review. Nursing education perspectives (2020)
18. Wang, C., et al.: A novel coronavirus outbreak of global health concern. Lancet 395(10223), 470–473 (2020)
19. Al-Rabiaah, A., et al.: Middle East Respiratory Syndrome-Corona Virus (MERS-CoV) associated stress among medical students at a university teaching hospital in Saudi Arabia. J. Infect. Public Health 13(5), 687–691 (2020)

20. Kafka, A.: Shock, Fear, and Fatalism: As Coronavirus Prompts Colleges to Close, Students Grapple With Uncertainty. 2020 2020–03–12. https://www.chronicle.com/article/Shock-FearFatalism-As/248240/

21. Kmietowicz, Z.: Rules on isolation rooms for suspected covid-19 cases in GP surgeries to be relaxed. British Medical Journal Publishing Group (2020)

22. Xiao, C.: A novel approach of consultation on 2019 novel coronavirus (COVID-19)-related psychological and mental problems: structured letter therapy. Psychiatry Invest. 17(2), 175 (2020)

23. Ayittey, F.K., et al.: Economic impacts of Wuhan 2019-nCoV on China and the world. J. Med. Virol. 92, 473–475 (2020)

24. Yin-xia, B., et al.: correlation between psychological changes of the community crowd and the social support in grave public health event. Nei Moivgol Med. J., 4 (2005)

25. McBride, O., et al., Monitoring the psychological impact of the COVID-19 pandemic in the general population: an overview of the context, design and conduct of the COVID-19 Psychological Research Consortium (C19PRC) Study (2020)

26. Weale, S., Students 'should get a year's refund due to Covid-19 crisis' (2020)

27. Sinelnikov-Murylev, S.G.: Prospects for the higher education system's development in the pandemic. monitoring of Russia's economic outlook. Moscow. IEP 2020(6), 15–19 (2020)

28. Adams, D.R., Meyers, S.A., Beidas, R.S.: The relationship between financial strain, perceived stress, psychological symptoms, and academic and social integration in undergraduate students. J. Am. Coll. Health 64(5), 362–370 (2016)

29. Peltz, J.S., et al.: The role of financial strain in college students’ work hours, sleep, and mental health. J. Am. College Health 2020, 1–8 (2020)

30. Gupta, S.K., et al.: Lean Six Sigma for reducing student dropouts in higher education – an exploratory study. Total Qual. Manage. Bus. Excellence 31(1–2), 178–193 (2020)

31. Cronbach, L.J.: Coefficient alpha and the internal structure of tests. Psychometrika 16(3), 297–334 (1951)