Article

Identifying Key Variables on the Way to Wellbeing in the Transition from Face-to-Face to Online Higher Education due to COVID-19: Evidence from the Q-Sort Technique

Pilar Gómez-Rey [1],* , **Francisco Fernández-Navarro [2]** and **María José Vázquez-De Francisco [3]**

[1] Department of Communication and Education, Universidad Loyola Andalucía, 41704 Seville, Spain
[2] Department of Quantitative Methods, Universidad Loyola Andalucía, 41704 Seville, Spain; fafernandez@uloyola.es
[3] ETEA Foundation—Development Institute, Universidad Loyola Andalucía, 14004 Córdoba, Spain; mjvazquez@uloyola.es
* Correspondence: pgomez@uloyola.es

Abstract: This paper reports perceptions of higher education lecturers who switched from classical face-to-face teaching to online teaching due to the unexpected circumstances caused by the COVID-19 pandemic. Based on a validated theoretical model about the roles of instructors in online settings, the authors document the perceptions of experienced face-to-face lecturers regarding their performance in online roles and the perceived importance of the formal and informal support they received during the process of adapting to a sudden online context. The study was based on the Q-sort methodology. Among other conclusions, our research reveals that the best performance we elicited pertained to the technical role, followed by the managerial role and the support received through informal channels. Worryingly, the worst performance pertained to promoting life skills. This finding is especially alarming considering both the UNESCO humanistic vision of universities as promoters of university community development and wellbeing and SDG 4.7 of Agenda 2030, which states that education should ensure that all learners acquire the knowledge and skills needed to promote sustainable development through education on sustainable development and lifestyles. This article is meant to provide guidelines to traditional universities to help them overcome weaknesses and enhance strengths when switching to online learning.

Keywords: Covid-19 pandemic; educator wellbeing; face-to-face learning; life skills; online learning

1. Introduction

The origin story of the outbreak of COVID-19 is well-known worldwide, but to date, there has been no clear evidence that reveals the reasons for it [1]. Nevertheless, the pandemic has had consequences beyond the spread of the disease itself, as it constitutes an unprecedented challenge with very severe socio-economic consequences [2,3]. Furthermore, the impact of this crisis and a country's ability to cope with it vary significantly depending on the country and its level of development and wellbeing [4,5]. While some countries are better prepared to deal with the pandemic and its impacts, others are still struggling. The world has been hard-hit by COVID-19, and consequently, the side effects of the pandemic have greatly affected society [6,7].

The pandemic has had enormous global effects that have left no individual, institution or economy untouched. This unexpected circumstance has changed our lives in many ways, including the way we work. For instance, the COVID-19 pandemic has given us massive insights on how technology can play a vital role in organizations, our work–life balance and the future of flexible working [8–11]. The literature shows how the workplace has changed during the COVID-19 crisis. However, it is also worth noting that this sudden shift comes with the risk of a new kind of burnout. In this direction, there are already some

studies in the literature that encourage employers to study wellness (mental health) in the workplace during the COVID-19 pandemic [12–14].

In 1976, Dr. Bill Hettler, co-founder of the National Wellness Institute in the US, defined wellness as the pursuit of continued growth and balance in six dimensions. These dimensions encompass one's social/emotional, spiritual, environmental, occupational, intellectual, and physical wellbeing [15]. The concepts of wellness and well-being have been evolving in the last decades. Amartya Sen deepens the concept of well-being and human development in his "human development theory from a capability approach". He considers well-being to be the process of widening capacities, liberties, and opportunities of individuals to live a life that is worth living [16]. In addition, he introduces the concept of functionings as "the various things a person may value doing or being" [17]. In this context, it has to be noted that attention must be given to a variety of dimensions included in the definition of well-being. Some of them, such as education, health, and income, have been widely accepted in the literature even from different perspectives [18–20]. The neglect of any of these dimensions over time will adversely affect others and ultimately harm one's well-being and quality of life. Specifically, this paper describes an example of how to elicit personal perceptions about weaknesses and limitations that could be challenges and obstacles in one's life and consequently hinder one's wellbeing. Ultimately, one needs the ability to put functionings into action to achieve a more tolerable life and well-being [16].

Turning to the issue of health as a basic component of well-being, several researchers have shown that health issues (or poor health) and their impact on various fields of study have been a hot topic during the COVID-19 pandemic [21–23]. For instance, in the field of healthcare services, the literature shows that working in areas with a high incidence of infection was significantly associated with higher stress and psychological disturbances [24–27]. Furthermore, the pandemic has hit the agriculture and food sector with joblessness, which is not only affecting people economically but also causing other social and psychological stress [28–31]. Finally, in the educational sector, instructors from elementary school to higher education levels have had to adapt to the world of distance education, as all learners have faced educational institutions' closures [32–37]. Most instructors and their organizations have embraced this challenge, although in many cases these professionals lack the skills and equipment to provide distance education effectively [38–43], especially in developing countries [44,45].

This proposal aims to shed light on how face-to-face universities have mitigated the impact of the ongoing pandemic on higher education systems. The authors of this study took inspiration from epidemiological studies where researchers graphically represent the propagation analysis of COVID-19 by showing the rate of people infected day by day [46–48]. As an example, Figure 1a, shows the predicted Spanish epidemiological curve of COVID-19, and for that purpose it uses a sigmoidal model (where K, r, and C_0 are parameters of the logistic curve and RMSE indicates the performance of this logistic model) [49]. The data came from the Spanish Ministry of Health. Similarly, this investigation offers a hypothetical educational COVID-19 curve model under the assumption that a sudden change in the teaching scenario (from face-to-face to online) increased the teachers' workload relative to their teaching duties during the COVID-19 lockdowns (Figure 1b). The educational COVID-19 curve has been illustrated in a time series in which the x-axis represents the time period and the y-axis represents the additional workload hours. The main difference in modeling terms between the COVID-19 epidemic curve and the educational COVID curve lies in the logistic growth rate parameter that is associated with the logistic functions of the two phenomena. This parameter is positive in the first scenario, and it is negative in the second scenario.

The main objective of this research is to define the strengths and weaknesses of the function of teaching in higher education and face-to-face contexts. Due to the unexpected circumstances, teaching shifted from face-to-face lectures to online classes. We offer some guidelines for traditional universities so they can overcome future weaknesses and encourage their strengths when teaching in an online context (as this new environment or

blended model has come to stay in a majority of higher education institutions at least in the medium term). Methodologically speaking, this analysis is carried out using a validated research questionnaire that defines the teaching duties of an online instructor in the 21st century [50]. The purpose is to assess the teachers' skills in conventional settings when teaching in scenarios for which they have not been trained (online environments). Additionally, this research work analyzes the type of support (either internal or external to their corresponding universities) these facilitators received during their teacher professional development amid this unpredictable event.
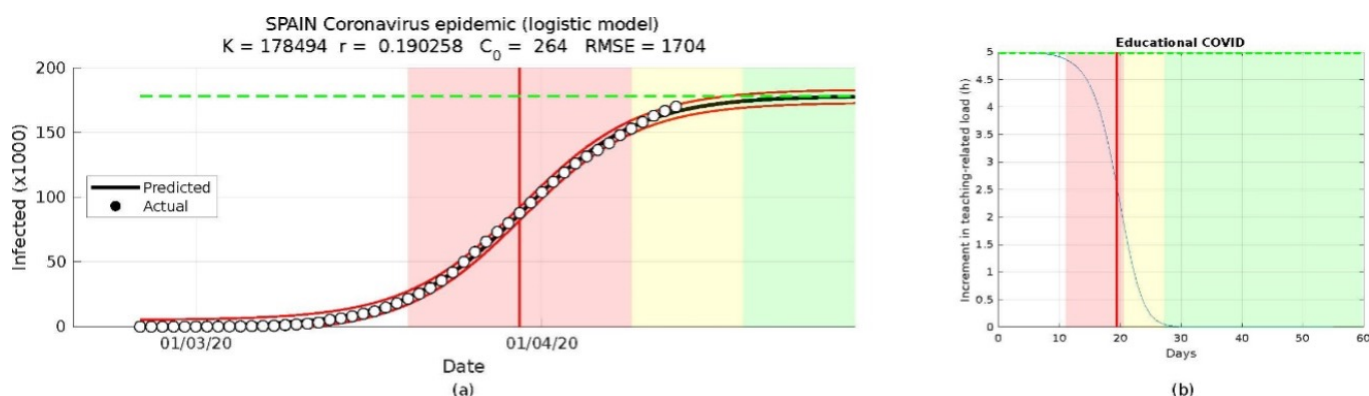
Figure 1. Comparison between the Spanish COVID-19 epidemiology model (**a**) and the educational COVID model (**b**).

The remainder of the paper is organized as follows: Section 2 describes the baseline questionnaire adopted as the theoretical framework of the study (consequently, the research variables analyzed in the study). Section 3 details the methodological approach adopted in the manuscript, including the data acquisition procedure, a description of the participants involved in the study, and the statistical analysis that was performed. The empirical (statistical) results we obtained are reported in Section 4. Furthermore, the discussion section provides a theoretical analysis of the empirical results (with a connection to the existing literature) and a complete description of the implications of the empirical results for the educational community (Section 5). Finally, Section 6 summarizes the main findings of this study.

2. Theoretical Framework

This study borrows, as its theoretical framework, a recently published educational model [50,51] that defines the roles of instructors in higher education online learning environments in the 21st century. The baseline educational model defines those roles using a sequential methodological approach with the following three steps: (i) a systematic literature review in the field, (ii) in-depth interviews with 6 experts on the topic (teaching tasks and roles in online environments), and (iii) a pilot study that analyses students' viewpoints. Additionally, the model was also validated quantitatively through a sample of 925 online students.

The selected educational approach perfectly fits into this research for different reasons [50,52]. First, the present study mainly focuses on the teaching duty of instructors in higher online educational environments. Indeed, the adopted study recognizes that a college instructor has three main professional functions (teaching, management/service and research), and it centers its attention exclusively on the teaching function of the instructors. Second, our target group consists of instructors from in-person learning environments who suddenly switched to virtual instruction. As claimed in [50,51], the functions of teachers in virtual and face-to-face learning environments are different. As a result, the search criteria for selecting a framework that defines the instructors' roles were limited to research works belonging to the field of eLearning environments. Below, a brief description of the components (instructors' roles) in the adopted framework is presented.

- The pedagogical role (PR). First, the authors of the study include the pedagogical attributes of an instructor as an essential part of his or her teaching tasks. They clarified that this main construct includes the following sub-roles: (i) professionals, (ii) content experts, and (iii) resource material creators and study guide producers. That is, instructors should shift their roles from lecturers to facilitators who provide resources, monitor progress and encourage students to develop a problem-solving-oriented mindset. In addition, instructors should be content facilitators with both an excellent mastery of their subject matter and continuous concern to update their knowledge about the subject (lifelong learners). Furthermore, instructors should provide (from the beginning of the semester) adequate, useful and compressible material to enable the students to succeed, as well as the subject's long-term goals.
- The course designer role (CDR): It is commonly known that careful planning before the lessons themselves not only makes teaching easier and more enjoyable but also facilitates student learning. The authors reinforced this belief in their study (i.e., their belief that successful courses require careful planning) and stressed the idea of adding continual revisions to the course structure for flexibility and negotiation if necessary. Additionally, it is important to note that the results we are using opened the debate on why some authors include the designer role as part of the pedagogical one, whereas others divide the tasks that encompass these roles between two different roles. As shown in the original study, there are some online courses that are designed by experts (instructional designers) but taught by different people (instructors); in other online courses, the same person is in charge of both tasks.
- The social role (SR): The authors highlighted the importance of promoting communication in online learning practices, especially as there is no physical classroom to promote relationships between individuals. They also pointed out the importance of the role under the umbrella of the 21st century framework of learning, where communication and teamwork skills are key competencies that need to be developed by students. This role includes live interactions supported by synchronous learning systems (SRSC) as well as interactivity with asynchronous tools (SRAC). The authors specifically underlined the importance of fostering the relationships between students and the instructor (group relationship) and each student and the instructor (individual relationship).
- The life-skills promoter role (LSPR). In line with the UNESCO humanistic vision of learning and the centrality of education as a basic component of human wellbeing [5,19,53], the authors suggested incorporating this new role into the 21st century framework of learning. They emphasized that all educators should focus their attention on helping their students to succeed in life beyond training students with specific knowledge. As mentioned in the original study, integrating these skills into the curriculum is a fundamental principle for reshaping education and helping students to reach their full potential, not only as academic achievers but also as human beings. This idea is in line with Sustainable Development Goal (SDG) 4.7 of Agenda 2030, which was agreed in 2015 by the United Nations (Resolution General Assembly— https://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E; accessed on 19 May 2021). This goal states that by 2030, *all learners should have acquired the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development* (Agenda 2030—SDG4: https://sdgs.un.org/goals/goal4; accessed on 19 May 2021).
- The technical role (TR). As pointed out by the authors, this role has been considered as a key element in the teaching function of online instructors since the very beginning of research on this topic. The authors also claimed that it was very important to have the right support and technical assistance from institutions, as there exists a continuous advancement of technology. Ultimately, the authors suggested paying attention to

this role to prevent student frustration and possible dropping out due to the technical factors that exist in online learning.

- The Managerial role (MR): Finally, the authors underlined the evolving nature of managerial roles in the literature. They mentioned that this role has been extensively studied in the online learning literature by different authors and from different perspectives. Regarding the nature of the role, these authors highlighted that facilitators should use management not to control students, but to help them actively participate in the learning process. In the view of the authors, this role implies ensuring that students have the right rules and information to participate fully in the courses. Thus, this role includes tasks such as setting the minimal ethical norms, procedural rules (deadlines) and decision-making norms. The authors suggested visibly incorporating these classroom management rules to help students organize their time and learning.

As stated in the previous section, the theoretical model presented in this study includes not only the above instructors' roles but also the support that those instructors received during the transition from face-to-face to online learning. Instructional support is conceived in this study as the assistance that faculty members received to help them succeed in their teaching duties during the shifting of the educational model. Specifically, this study incorporates two types of assistance. First, formal support (FS), which refers to the help educators could receive from any official body inside the university to face the challenges of adapting to online teaching. This type of support includes but is not limited to the following individuals: the dean, head of department, ICT staff and center of innovation. Second, informal support (IS), which refers to the guidance facilitators could receive from non-formal entities or people to deal with the learning and development teaching tasks.

3. Methodology

3.1. Participants

The participants were academic staff from the Universidad Loyola Andalucía (Spain), which is a private face-to-face university with campuses in Seville and Córdoba that was established in the 2013/14 academic year; it is also a Catholic university run by the Society of Jesus (S.J., Jesuits). The university offers undergraduate and postgraduate programs (both in Spanish and English) in areas related to economics and business, engineering, robotics, law, education, psychology, criminology, humanities, and international relations. The faculty promotes a teaching style aligned with a learner-centered methodology. Currently, the university has 4862 students in the mentioned programs (2715 undergraduate students, 434 master students, and 71 Ph.D. students). The research was carried out through a purposive sampling, as the participants were deterministically selected according to their expertise in face-to-face and online teaching and the disciplines in which they were teaching. Specifically, the sample of this exploratory study is composed of 18 experienced educators who were teaching in both Social Sciences and Humanities (SSH) and Science, Technology, Engineering, and Mathematics (STEM) subjects during the second semester of 2019/2020.

In this study, 61.11% of the participants were males and 38.89% were females, and all of them were between the ages of 31 to 55. Additionally, there were 8 participating facilitators from areas related to the fields of STEM and 10 from SSH disciplines. The number of students in each core class was between 51 and 100 (64.29%), and in the rest of the cases the class size was less than 50 students. The participants were mainly senior educators (71.43%) with extensive experience in traditional learning contexts. Although only 38.89% of the participants had experienced teaching online, they were all forced to shift from face-to-face lectures to online classes due to the COVID-19 pandemic. More than half of the participants agreed with the statement that they experienced high levels of unexpected bureaucratic burden in the semester (64.29%), and 71.43% of the participants highlighted the challenge of balancing work and family responsibilities.

3.2. Materials and Administration

The Q-methodology (also known as Q-sort) [54] was the research approach we implemented to analyze the different perceptions of the participants with regard to their initial training levels in the different instructors' roles and the level of support provided by the institution and colleagues during the course. Specifically, we applied the Q-sort technique in one-on-one sessions to create a comfortable space for the participants. The sessions were conducted online between October 2020 and December 2020 by the primary researcher and lasted approximately one hour. The study used Qualtrics software to collect the empirical data. The sessions were conducted in Spanish, which was the native language of the participants. For this article, the questionnaire is presented in English, and the translation was carried out by the researchers and a native English speaker.

The session always began with the explanation of the aim of the study to the participants as well as the way to proceed during the session to ensure that they were familiar with the proposed methodology. Then, the principal researcher of the study explained to the participants the definition of the different elements to be sorted during the Q-sort procedure. The instructors' roles considered were (i) the pedagogical role, (ii) the designer role, (iii) the social role, (iv) the life-skills promoter role, (v) the technical role, and (vi) the managerial role. In addition, for each role, two types of instructor supports were considered: (i) formal and (ii) informal support. Hence, the Q-sort method was composed by a total of 21 cards (7 roles—note that the SR is split into SRSC and SRAC—and two types of support per role) to be sorted. This step was intentionally designed to help participants better understand the statements of the study. Figure 2 shows a graphical illustration of the presentation made by the researcher. After the initial explanation of the study and its goal, each participant had to include each of the total 21 cards in one of the 7 boxes considered in the study. Each box corresponds to a level of disagreement or agreement with the card under study, ranging from 1 (totally disagree) to 7 (totally agree). The number of cards that the participant could place in each of the 7 boxes from 1 to 7 in order is 1, 3, 4, 5, 4, 3 and 1. After this task, the participants were allowed to justify the order of their cards. Note that their comments will be used in the discussion section of this study when necessary to justify/clarify the research results. Finally, some questions were asked to extract information about participants' demographics, the circumstances under which they lived during the coronavirus lockdown period and their experience as facilitators in both traditional and virtual contexts. More details about the set of questions can be found in Appendix A.

Figure 2. Graphical illustration of the presentation of the roles of online instructors: pedagogical role, course designer role, social role synchronous communication, social role asynchronous communication, life-skills promoter role, technical role, and managerial role. Description of one of the elements under analysis (Social role synchronous communication).

3.3. Data Analysis

The statistical differences between the scores obtained in the different elements considered as potential key elements in the face-to-face to online transition were assessed using non-parametric statistical tests, as a previous evaluation of the average scores obtained in those variables resulted in rejections of the normality and equality of various hypotheses [55,56]. In addition, the sample size is small ($N = 18$), so a nonparametric analysis is preferred to a parametric one [57].

Non-parametric tests (sometimes called distribution-free tests) do not assume anything about the underlying distribution of the data (for example, that the data come from a normal distribution) [57,58]. In this study, the statistical tests implemented were carried out with the average rankings obtained in each element under study. The Q-sorting data (raw data) were stored into a matrix where the rows represent the participants and the columns the instructors' roles or the type of support received. In this direction, the entry in the *i*-th row and *j*-th column of the matrix refers to the value of the score given by the participant *i* to the element *j*. Once the scores of the Q-procedure were obtained, the outputs of the roles and instructors' support for each participant were ranked according to this value (R = 1 being the best performing role or instructors' support and R = 7 or R = 14 the worst performing one). In the case of a tie response, the ranking values were distributed among the elements that had the same value. The resulting ranking matrix was used in the analysis of non-parametric tests. Specifically, we implemented the Friedman and Nemenyi non-parametric tests. The first test examines if there are statistical differences in the group of results [59], while the second one is used to detect which of all of the comparable pairs have significant differences [52].

4. Results

This section analyzes the pedagogical online training of the instructors under study and the level of formal and informal support received during the pandemic according to their own perceptions. Table 1 shows the mean score and standard deviation ($\overline{X}_{SD}$) along with the mean ranking ($\overline{R}$) for the components analyzed, which were divided into the two areas of interest previously mentioned. The study has been conducted on three levels: (i) an overall analysis including all of the participants, (ii) a study in which the participants have been divided according to their gender, and (iii) a study segregated by type of discipline (STEM and SSH).

As can be seen in Table 1, the best performing role (independently of the gender and discipline) was the technical role (with an average score of 5.5000 and a mean ranking of 2.3929 for the data sample including all of the participants). The second-best performing role for the overall study was the managerial role (with a mean score of 4.5000 and a mean ranking of 3.3929). It is worth mentioning that according to the instructors' perceptions, the two roles that were harder to implement via online lectures were those that incorporate the social part of learning (the social role-synchronous and life skills promoter roles). Regarding the analysis of the support received by instructors, informal technical support was the element with the greatest mean score and ranking. Consistently with the previously-mentioned results, the elements related to the social part of learning are traditionally the ones that receive less support (both formal and informal). Additionally, the instructors tend to report that the informal support they received was more important in overall terms than the formal support (the scores of the elements related to informal support generally had greater values than those associated with formal support).

The significance of the empirical results was assessed using non-parametric statistical tests (using the data included in the overall analysis) since a previous evaluation of the average scores obtained in the instructors' roles and instructors' support resulted in rejections of the normality and equality of various hypotheses. As previously pointed out, we implemented the Friedman and Nemenyi statistical tests. The Friedman test checked if there were significant differences in the groups of results, while the Nemenyi test was used to detect which of all of the comparable pairs have significant differences. The pre-hoc

Friedman test was performed twice with the average ranking obtained in each role and the mean ranking for the instructor's support. The test showed that there were statistical differences between the scores obtained in the different roles and elements of instructors' support at a significance level of 5%, as the confidence intervals are $C_0 = (0; F_{0.05} = 2.22)$ and $C_0 = (0; F_{0.05} = 1.77)$ and the F-distribution statistical values are $F^\star = 2.60 \notin C_0$ and $F^\star = 2.72 \notin C_0$, respectively. Therefore, the null hypothesis is rejected. The null hypothesis stated that all of the roles and elements of instructors' support performed equally in the mean ranking.

Table 1. Statistical results obtained in the study (overall analysis, gender analysis, and type of study analysis): sample size (N), mean and standard deviation ($\overline{X}_{SD}$) and mean ranking ($\overline{R}$) per analysis

|	Analysis of the Perception of the Training Level (Online Learning) of the Instructors									
	Overall N = 18		Gender (Male) N = 11		Gender (Female) N = 7		Discipline (STEM) N = 8		Discipline (SSH) N = 10	
	$\overline{X}_{SD}$	$\overline{R}$	$\overline{X}_{SD}$	$\overline{R}$	$\overline{X}_{SD}$	$\overline{R}$	$\overline{X}_{SD}$	$\overline{R}$	$\overline{X}_{SD}$	$\overline{R}$
PR	4.1429	3.8571	*4.7273*	*3.2273*	4.0000	6.1667	*4.6667*	*3.0833*	3.7500	4.4375
CDR	3.7143	4.2123	3.6363	4.4090	4.0000	3.5000	4.3333	3.5833	3.2500	4.6875
SRSC	3.2143	4.7857	3.0909	4.7727	3.6667	4.8333	2.8333	5.5000	3.5000	4.2500
SRAC	3.6429	4.4286	3.2727	4.9546	*5.0000*	*2.5000*	3.6667	4.5000	3.6250	4.3750
LSPR	3.2857	4.9286	3.4546	4.8181	2.6667	5.3333	3.1667	5.0833	3.3750	4.8125
TR	**5.5000**	**2.3929**	**5.2727**	**2.6364**	**6.3333**	**1.5000**	**5.0000**	**2.4167**	**5.8750**	**2.3750**
MR	*4.5000*	*3.3929*	4.6364	3.1818	4.0000	4.1667	3.8333	3.8333	*5.0000*	*3.0625*
	Analysis of the Support Received by Instructors									
	Overall N = 18		Gender (Male) N = 11		Gender (Female) N = 7		Discipline (STEM) N = 8		Discipline (SSH) N = 10	
	$\overline{X}_{SD}$	$\overline{R}$	$\overline{X}_{SD}$	$\overline{R}$	$\overline{X}_{SD}$	$\overline{R}$	$\overline{X}_{SD}$	$\overline{R}$	$\overline{X}_{SD}$	$\overline{R}$
PRFS	4.0714	7.1786	4.1818	6.8636	3.6667	8.3333	4.1667	6.8333	4.0000	7.4375
PRIS	*4.8571*	*5.2857*	*4.8182*	*5.4090*	5.0000	4.8333	*5.5000*	*3.5000*	4.3750	6.6250
CDRFS	3.2860	9.6786	3.3636	9.5909	3.0000	10.0000	4.1667	6.6667	2.6250	11.9375
CDRIS	4.2857	6.4286	4.0909	7.0000	*5.0000*	*4.3333*	4.5000	5.8333	4.1250	6.8750
SRSCFS	3.7143	8.2857	3.5455	8.9091	4.3333	6.0000	3.3333	9.2500	4.0000	7.5625
SRSCIS	3.9286	7.3571	3.8182	7.8182	4.3333	5.6667	2.8333	10.5833	*4.7500*	*4.9375*
SRACFS	3.7143	8.1786	3.8181	7.9091	3.3333	9.1667	3.5000	8.5833	3.8750	7.8750
SRACIS	3.5714	8.7857	3.4545	9.0455	4.0000	7.8333	3.3333	9.2500	3.7500	8.4375
LSPRFS	2.7143	10.6071	2.9091	10.3182	2.0000	11.6667	2.5000	10.5833	2.8750	10.6250
LSPRIS	3.2857	9.2857	3.2727	9.5455	3.3333	8.3333	2.6667	10.9167	3.7500	8.0625
TRFS	4.5000	5.8571	4.6364	5.4546	4.0000	7.3333	4.6667	5.5000	4.3750	6.125
TRIS	**5.0714**	**4.4643**	**5.0000**	**4.6818**	**5.3333**	**3.6667**	**5.0000**	**5.0833**	**5.1250**	**4.0000**
MRFS	4.0714	7.0000	4.3636	6.0455	3.0000	10.5000	4.3333	6.1667	3.8750	7.6250
MRIS	4.2143	6.6071	4.3636	6.4091	3.6667	7.3333	4.3333	6.2500	4.1250	6.8750

The best result is in boldface, and the next best one is in italics.

Based on the two previous rejection results, the Nemenyi post-hoc test was used to compare all of the roles and elements of instructors' support with each other. The Nemenyi test analyzes the performances of different roles or instructors' support, and it considers a role or element of the instructors' support to be significantly different if its mean rank differs by at least the critical difference (CD). The results of the two Nemenyi tests for $\alpha = 0.05$ can be seen in Figure 3, where the CD is also shown, and the mean ranking of each role or instructor's support is represented on the scale for each plot. Whenever the mean rankings of the two algorithms differ by more than the CD, significant differences can be assessed.

The results of the Nemenyi tests for $\alpha = 0.05$ show that instructors' roles were statistically organized (according to their mean rankings) into two groups: (I) the first group encompasses the TR, MR, PR, CDR, and SRAC roles, and (ii) the second group includes the MR, PR, CDR, SRAC, SRSC, and LSPR roles. Regarding the instructors'

support, the elements were statistically clustered in three clusters: the first cluster contains the TRIS, PRIS, TRFS, CDRIS, MRIS, MRFS, PRFS, SRSCIS, SRACFS, SRSCFS, SRACIS, and LSPRIS roles, the second one contains the PRIS, TRFS, CDRIS, MRIS, MRFS, PRFS, SRSCIS, SRACFS, SRSCFS, SRACIS, LSPRIS, and CDRFS roles and the last one has the TRFS, CDRIS, MRIS, MRFS, PRFS, SRSCIS, SRACFS, SRSCFS, SRACIS, LSPRIS, CDRFS, and LSPRFS roles.

(**a**)   (**b**)
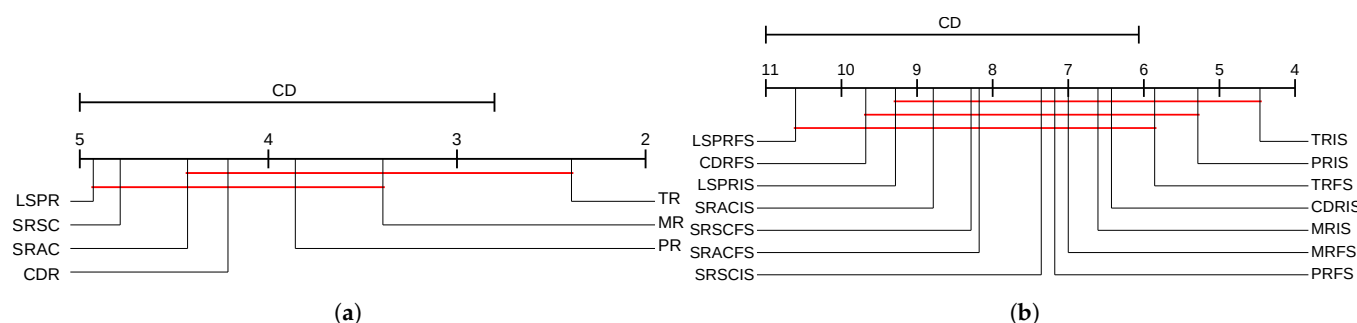
Figure 3. Diagrams for the two Nemenyi tests we implemented. (**a**) Ranking diagram for the mean ranking scores obtained for each role. (**b**) Ranking diagram for the mean ranking scores obtained per instructors' support.

5. Discussion

5.1. Analyzing the Overall Results

As can be seen in Table 1, the variable that yielded the best results in terms of both mean scores and mean rankings in the analysis of the perception of the training level (online learning) of the instructors is associated with the technical aspect of teaching (TR and TRIS). This finding can be justified by some particularities of the university under study. First, the university not only offers undergraduate degrees but also complements its offer with graduate diplomas, master's degrees, and Ph.D. programs. While all of the courses are primarily offered face-to-face, the course requirements in doctoral studies combine taught modules via online learning. This fact is evidenced in the following comments: "*I teach at both the bachelor's and doctorate levels. While bachelor's lessons are face-to-face, some doctoral lessons are online. I believe the experience I had from my graduate students gave me the opportunity to better adapt myself when lockdowns forced the university to be closed*" (Participant G). "*Thanks to my experience with PhD students, I did not have a dramatic adaptation during the emergent transition from face-to-face to online learning. However, I have never taught online in bachelor's [degree classes]. So I needed to make a big effort when adapting my class materials*" (Participant C). Second, the university has had a Teacher Training and Innovation department since 2017 that supports faculty and instructors with professional development and teaching enhancements. An instructor's comment confirmed this evidence by reflecting positive feelings towards the technical support received by this academic office: "*From my point of view, the most valuable help I received while in the lockdown period was the assistance we had from the Teacher Training and Innovation department. They offered a wide range of courses regarding the development of online teaching competencies. Actually, thanks to this situation the department nowadays has expanded the offer of courses in online format rather than face-to-face. But also, there was a person that belongs to this department who kindly offered to help you individually upon petition. She did an extraordinary job!*" (Participant N). This result is aligned with some research works from the literature in which the authors noted that in the 21st century, people are already immersed in the digital native community [50,60,61]. This pattern contrasts with the last decades of the 20th century, when digital technology was a problem in distance education due to the status of some individuals as digital immigrants [62].

In line with the positive results, the pedagogical aspects of teaching (PR) and classroom management strategies and techniques (MR) are in second and third place in terms of both the mean score and the mean ranking. This fact pertains to both the analysis of the perception of the training level (online learning) of the instructors and the analysis of the support received by instructors. Quality is sometimes subjective, as different indi-

viduals and institutions define it according to various factors [51,63]. In this study, when referring to the quality of teaching, the authors refer to the pedagogical qualities of the instructor. However, because measuring the teaching quality is complex, it has received increasing attention in the literature. Many researchers have addressed the numerous paradoxes that the measurement of quality sometimes induces [64–66]. We hypothesize that the positive results of the pedagogical variable can be justified by the fact that the institution under study constantly shows tangible signs that teaching matters. This action can be evidenced below. Students rate the teaching effectiveness of their educators at the end of a semester. These data and the continuous tracking of educators allow the university to offer performance-based non-economic rewards to facilitators who lead best teaching practices and results (Academic event—Faculty and Staff Excellence Award winners 2018/2019: https://www.uloyola.es/servicios/secretaria-general/actos-academicos/acto-solemne-santo-tomas-de-aquino; accessed on 19 May 2021). In other words, the data show a student-oriented higher education institution that follows up quality teaching initiatives and praises its staff outcomes. Still, classroom management strategies and techniques are related to how you manage what happens in the class. This concept has been broadly defined in the literature [67–70]. In this study, when referring to classroom management strategies and techniques, the authors refer to how to handle course management. The aim is to move the instructional processes from physical space into the online world, which means determining how classroom management is maintained, how resources are organized, and how teaching and learning elements are automated to ease the burden on instructors. In line with this point, the university under study has been working on unifying the documentation, avoiding duplicative material, and ensuring clarity. The aim is to facilitate the organizational structure through internal effectiveness and efficiency. This fact is reflected as empirical evidence in the following comment: "*I teach a subject in which there is a subject coordinator, but different teachers are involved in it. A long time ago, our department was invited to created a .pdf handbook that compiles the teaching plan, rules of the subject, evaluation criteria, step-by-step lesson description, and any other information related to the subject to ensure that different teachers of the same subject are applying similar standards. When we moved from face-to-face to online classes, we did not have to make an extra effort to adapt our course materials, as the mentioned document already contained a detailed course description. This document was uploaded to Moodle*" (Participant A).

In the analysis of the perception of the training level (online learning) of the instructors, the variables that yielded the worst results in terms of both mean scores and mean rankings are associated with the promotion of synchronous communication (SRSC) and the development of life skills in the classroom (LSPR). These findings are particularly sensitive as they run counter to the dialogue that has been promoted by different organizations and institutions since the onset of the 21st century. The educational system has witnessed an era of intense transformation. Human beings require a set of skills that enable an individual to cope and succeed in facing real-life challenges, and improve their wellbeing. In an educational context, those skills are dubbed "21st century skills" and are defined as transversal competencies that are required by a person for holistic development so that he or she can contribute to the progress and development of his or her society, nation and world [71,72]. In line with our approach to Sen's theory of well-being and human development [16], these skills are the functionings and capabilities (liberties and opportunities) that a person needs to achieve a better life. A capability "*represents the various combinations of functionings (beings and doings) that the person can achieve. Capability is, thus, a set of vectors of functionings, reflecting the person's freedom to lead one type of life or another… to choose from possible livings*" [53]. The variety of functionings and capabilities and their combinations that help one to live a life that is worth living and the public and the participatory necessity for the construction of a common concept of well-being (depending on the moment and the context) makes Sen defend an incomplete list of functionings and capabilities. Sen considers that communities must agree on which functionings and capabilities are the most valuable, hence, should be fostered and expanded to build "*citizens whose voices count*" [73,74]. In contrast with

Sen, Nussbaum defines a universal list of central capabilities or human needs which ought to be covered for living a better life [20]. From any of these approaches, empowering students with these skills, functionings and capabilities are especially challenging in the distance and online environments where the physical absence of learners in the classroom hinders the promotion of these types of skills [50,52,75]. In any case, the challenge is how to operationalize and put into action all those capabilities, functionings, and skills in an online educational environment [76,77]. Below, there is an example that demonstrates how a participant in the study confirms the tough task of instructors regarding life skills education: "*I see my teaching style as quite close to the life skills education that is required in the 21st century. However, I have to say that since the beginning of my teaching experience I have been aligned to this movement. Life skills is not a new concept for me. I think I have a particular way of teaching because of one of my passions in life [personal information is omitted]. This passion requires me to be dedicated, persistent, and patient. Also, it requires making creativity part of my everyday life. I teach the skills I have acquired through my passion in my classes. I believe that if you come to one of them, you are going to see that they differ too much from the ones of my colleagues. But this is my stamp. [....] One day, our lives were immersed in an awful COVID-19 pandemic. The lockdown forced us to change face-to-face classes to online classes. I was not prepared for that. How could I manage this situation? I believe the skills I acquired thanks to my passion helped me to adapt myself to this unique situation. Nonetheless, I do not think I am capable of transmitting to my students the same [passion] while teaching online*" (Participant K). Some ideas to facilitate life skills enhancement in online and distance environments are presented. The literature shows evidence on the fact that the online learners who developed life skills the most were the so-called "socially interactive students" (those who interacted on social and personal issues), which represents only half of the online learners' population [78]. In this context, different researchers have been proposing several strategies to improve students' engagement which will ultimately create a more favorable environment for promoting life skills in the classroom [79,80]. Thus, Dixson suggested including approaches that improve learners' interactions in the existing active learning educational models (to enhance students' engagement) [79]. More recently, the work of Kahn et al. highlighted the role between reflexivity and student engagement of students in online environments as a crucial factor to social relations while learning [80].

5.2. Analyzing the Results Disaggregated by Gender and Discipline

As can be seen in Table 1, disaggregated by gender, the technical aspects of effective teaching were rated higher by females than males. However, the values obtained are not very different among the two types of participants. Therefore, the results showed that from the instructors' point of view, there was no a digital gender gap in education in terms of technological culture. This result is a positive finding that will undoubtedly help the digital transformation of society by making it a more inclusive society [81–83]. We may consider cultural and contextual differences on this point in future research. Third, disaggregated by disciplines, the classroom management strategies and techniques obtained better values in SSH programs than in STEM programs. This finding can be justified by the inherent training received in both disciplines. In the fields of science and technology, most scholars have no pedagogical education or previous teaching experience. In this direction, some researchers have pointed out that the main challenges in STEM instruction implementation are: (i) the difficulty for disseminating theoretical concepts in the classroom; (ii) the organization of activities oriented to enhance students' engagement, and (iii) the use of effective communication [84,85]. The reason for it is that their careers are more research-oriented, as research is an essential part of making a social impact as an academic. Whereas, in the field of social sciences and humanities there is a tendency towards learning centered on pedagogy and appropriate and effective teaching and learning methodologies.

In addition, diverse findings can be inferred by focusing on the analysis of the support received by instructors. First, in general terms, informal support (IS) achieved better results than formal support (FS). In other words, the participants reported receiving more informal

support than formal support during their transition from face-to-face to online learning. As recent studies have shown, helping non-expert university teachers (i.e., those who have little or no experience with online learning) to navigate in these difficult COVID-19 times has been crucial in traditional environments [86–89]. The finding provides evidence that the pandemic has been a test that demonstrates that cooperation is key to overcoming societal challenges. An example that corroborates the solidarity between individuals is the following: "*I am grateful to my teaching colleagues who have generously offered me their insights and experiences*" (Participant P). Furthermore, several social initiatives have kept education running despite the worldwide lockdown: (i) many publishers either gave access to all or part of their paid digital resources for free, or they extended the resources accessible to their subscribers; (ii) well-known eLearning communities have offered training modules (this is the case for the Universitat Oberta de Catalunya; see the YouTube hangstat #docencianopresencialdeemergencia). Second, the least valued supports were associated with the life-skill promoter role. From instructors' point of view, there was a lack of guidance and counseling either formally or informally on how to adapt teaching to life skills education frameworks. This finding shed light on the need to reinforce training in life skills, functionings and capabilities that reinforce citizenship education and the integral development of the student. The result is in line with the debate that different organizations have opened by suggesting an emphasis on teacher training to prepare students for success in their lives. As recommended, the life skills approach provides people with the capabilities they need to face challenging situations in their work and lives and to live lives that are worth living [16]. These approaches have gained visibility in adult education [72,90–92].

5.3. Limitations

Although this study expands our knowledge of the transition process suffered by a traditional university during the lockdown period of the COVID-19 pandemic, certain limitations must be acknowledged. First, our study used a Spanish university as a case study. However, the pandemic has affected educational systems worldwide, leading to the near-total closures of schools, universities and colleges. Future research works will expand our knowledge of the impact of the coronavirus in different contexts and settings across other countries and socioeconomic environments to overcome this limitation. Second, as this study was designed using a sample obtained from a private university, the results may be specific to this private setting. The inclusion of a wider variety of contexts and an expansion of the sample of the study are being considered for future research. Third, this study was undertaken during a period in which the virus had been observed for the first time. At this point of the pandemic, transitioning from face-to-face educational environments to online contexts was an unexpected novelty. Future research can take advantage of this study and compare the evolution of instructors' adaptation and well-being in the education field and the post-COVID world.

6. Conclusions

This research work is in line with studies from the literature that evaluate education in the era of COVID-19. Specifically, this study sheds light on how face-to-face educators have mitigated the impact of the ongoing pandemic on higher education systems. This paper has evaluated the variables these instructors had to deal with to carry out online teaching during coronavirus lockdowns. To this end, a theoretical framework recently published in the field of eLearning contexts has been adapted ad hoc for this study [50,51]. Specifically, the performance of the instructors in the following roles has been analyzed in this paper: pedagogical roles, course designer roles, social roles, life-skills promoter roles, technical roles and managerial roles. In addition to these roles, this research also takes into account the support that instructors could receive during the transition from face-to-face instruction to online instruction. For the purposes of this research, the concept of support refers to the assistance that faculty members receive to succeed in their teaching duties during

the shifting of the educational model. In particular, this study incorporates two types of assistance: formal support and informal support. While formal support refers to the help educators could receive from any official body inside their university to face the challenges of adapting to online teaching, informal support refers to the guidance facilitators could receive from non-formal entities or people inside and outside of their university to deal with learning and developmental teaching tasks. Methodologically, one-on-one sessions were conducted on a sample of 18 facilitators to analyze the different perceptions of the participants regarding their initial training levels in the different instructors' roles and the level of support provided formally and informally during the lockdown semester. Results from the Q-sort methodology determined that an instructor's adaptability to technology is not a major issue, whereas there is a general need for teacher training on embedding life skills into teaching.

The findings from this study have important implications for traditional higher education institutions. Due to unexpected circumstances, these institutions may be forced to shift from face-to-face to online classes or to apply a blended education model in the near future. The COVID-19 pandemic has been a starting point of a huge debate that has highlighted the possibility of future pandemics and global health emergencies. In addition, online and blended pedagogical models are an opportunity in contexts where the traditional physical presence is difficult to achieve for students in distant territories or in economic trouble. International organizations are warning nations to have the right political and financial investments to advance health security, prevent and mitigate future pandemics, and protect our future and the future of generations to come. For this reason, this study focuses on understanding how face-to-face universities have completed their academic courses despite the pandemic and lockdown. This research showed that numerous studies have emerged in the field of online education since March 2020 regarding the impact of the COVID-19 pandemic on teaching and learning. However, cautious attention should be paid when generalizing the findings from one study to another. It is worth noting that because the nature of both online education and face-to-face contexts is different, each scenario requires specific guidelines and indications for teaching and learning purposes. Therefore, it would not be suitable to replicate online educational practices in this new mode of learning (traditional universities that have been forced to switch to remote learning). The evidence that confirms the particularities of each environment includes the following. A majority of educators from traditional universities do not have specialized training in the area of online or distance education. Thus, the ideal is to avoid situations like those experienced recently in which traditional classroom teaching methods have been integrated into online deliveries. Regarding the instructor profile, it is worth paying attention to the instructors' adaptability not only because of uncertainty about new possible infectious diseases in the future but also for the evolution of instructors' competencies in the era of online teaching and learning. In addition, there is a need to consider whether online programs have also undergone a change with regard to the students' profiles. As demonstrated in the literature, a small percentage of students in online contexts are learners with no family or work commitments, whereas a majority of students need to balance their studies with other responsibilities [50]. However, after the COVID-19 pandemic's staggering impact on global higher education, attention should be paid to the potential of remote modes and digital scenarios, especially among young students. In this vein, rethinking the integration of life skills education from the early stages of higher education should be a necessity to prepare both young and adult students for this rapidly changing world. These are some of the reasons why, in this study, we support the idea of increasing research in the field of traditional education, especially in the era after COVID-19.

Author Contributions: Conceptualization, F.F.-N. and P.G.-R.; methodology, F.F.-N. and P.G.-R.; software, F.F.-N.; validation, F.F.-N.; formal analysis, P.G.-R. and M.J.V.-D.F.; data curation, P.G.-R.; writing—original draft preparation, P.G.-R.; writing—review and editing, P.G.-R., F.F.-N. and M.J.V.-D.F. All authors have read and agreed to the published version of the manuscript.

Conflicts of Interest: The authors declare no conflict of interest.

Abbreviations

The following abbreviations are used in this manuscript:

STEM	Science, Technology, Engineering and Mathematics
SSH	Social Sciences and Humanities
PR	Pedagogical Role
PRFS	Pedagogical Role Formal Support
PRIS	Pedagogical Role Informal Support
CDR	Course Designer Role
CDRFS	Course Designer Role Formal Support
CDRIS	Course Designer Role Informal Support
SRSC	Social Role Synchronous Communication
SRSCFS	Social Role Synchronous Communication Formal Support
SRSCIS	Social Role Synchronous Communication Informal Support
SRAC	Social Role Asynchronous Communication
SRACFS	Social Role Asynchronous Communication Formal Support
SRACIS	Social Role Asynchronous Communication Informal Support
LSPR	Life-skills Promoter Role
LSPRFS	Life-skills Promoter Role Formal Support
LSPRIS	Life-skills Promoter Role Informal Support
TR	Technical Role
TRFS	Technical Role Formal Support
TRIS	Technical Role Informal Support
MR	Managerial Role
MRFS	Managerial Role Formal Support
MRIS	Managerial Role Informal Support

Appendix A. Research Questionnaire Implemented in the Study

1. Gender: What is your gender?

    ☐ Female
    ☐ Male
    ☐ Prefer not to say

2. Age: What is your age?

    ☐ Under 30 years old
    ☐ 31–40 years old
    ☐ 41–50 years old
    ☐ More than 51 years old
    ☐ Prefer not to say

3. How many people did you live with during the period of home confinement in 2019/2020?

    ☐ I was alone

      ☐   Myself and one more person
      ☐   Myself and two more people
      ☐   Myself and three more people
      ☐   Myself and four people or more than four people

4. Were you in the charge of any family member or dependent during the period of home confinement in 2019/2020?

      ☐   Yes
      ☐   No

5. During the period of home confinement in 2019/2020, I:

      ☐   Lived in a home with less than 90 m^2 of floor space
      ☐   Lived in a home with 91–140 m^2 of floor space
      ☐   Lived in a home with more than 141 m^2 of floor space
      ☐   Lived in a home with a private terrace
      ☐   Lived in a home without a private terrace

6. Face-to-Face teaching experience: How long have you been working at face-to-face universities?

      ☐   Less than 1 year
      ☐   Between 1 and 5 years
      ☐   More than 5 years

7. Online teaching experience: How long have you been working at eLearning and/or distance universities?

      ☐   Less than 1 year
      ☐   Between 1 and 5 years
      ☐   More than 5 years

8. Academic discipline: The subject or subjects I taught during the period of home confinement in 2019/2020 belong to the field of:

      ☐   Science, Technology, Engineering and Mathematics
      ☐   Social Sciences and Humanities

9. Students ratio: How many students were enrolled in your subject or subjects during the period of home confinement in 2019/2020?

      ☐   Less than 50 students
      ☐   Between 51 and 100 students
      ☐   More than 100 students

10. The level of bureaucratic burdens for teaching purposes during the lockdown in 2019/2020 was:

      ☐   Low
      ☐   Medium
      ☐   High

11. Cards to be sorted:

Card 1. Pedagogical Role (PR). Before the period of home confinement in 2019/2020, I was a good virtual facilitator.

Card 2. Pedagogical Role Formal Support (PRFS). During the period of home confinement in 2019/2020, I received formal support to be a good virtual facilitator.

> **Card 3. Pedagogical Role Informal Support (PRIS).** During the period of home confinement in 2019/2020, I received informal support to be a good virtual facilitator.

> **Card 4. Course Designer Role (CDR).** Before the period of home confinement in 2019/2020, the instructional materials of my subject or subjects were adapted for a virtual teaching context.

> **Card 5. Course Designer Role Formal Support (CDRFS).** During the period of home confinement in 2019/2020, I received formal support to adapt the instructional materials of my subject or subjects to a virtual teaching context.

> **Card 6. Course Designer Role Informal Support (CDRIS).** During the period of home confinement in 2019/2020, I received informal support to adapt the instructional materials of my subject or subjects to a virtual teaching context.

> **Card 7. Social Role—Synchronous Communication (SRSC).** Before the period of home confinement in 2019/2020, I intentionally created collaborative spaces in my subject or subjects to promote virtual and synchronous communication among peers and with facilitators.

> **Card 8. Social Role—Synchronous Communication Formal Support (SRSCFS).** During the period of home confinement in 2019/2020, I received formal support to create collaborative spaces in my subject or subjects to promote virtual and synchronous communication among my peers and with facilitators.

> **Card 9. Social Role—Synchronous Communication Informal Support (SRSCIS).** During the period of home confinement in 2019/2020, I received informal support to create collaborative spaces in my subject or subjects to promote virtual and synchronous communication among my peers and with facilitators.

> **Card 10. Social Role—Asynchronous Communication (SRAC).** Before the period of home confinement in 2019/2020, I intentionally created collaborative spaces in my subject or subjects to promote virtual and asynchronous communication among my peers and with facilitators.

> **Card 11. Social Role—Asynchronous Communication Formal Support (SRACFS).** During the period of home confinement in 2019/2020, I received informal support to create collaborative spaces in my subject or subjects to promote virtual and asynchronous communication among my peers and with facilitators.

> **Card 12. Social Role—Asynchronous Communication Informal Support (SRACIS).** During the period of home confinement in 2019/2020, I received informal support

to create collaborative spaces in my subject or subjects to promote virtual and asynchronous communication among my peers and with facilitators.

Card 13. Life-skills Promoter Role (LSPR). Before the period of home confinement in 2019/2020, I designed teaching practices to develop life skills for students in virtual learning settings.

Card 14. Life-skills Promoter Role Formal Support (LSPRFS). During the period of home confinement in 2019/2020, I received formal support to design teaching practices to develop life skills for students in virtual learning settings.

Card 15. Life-skills Promoter Role Informal Support (LSPRIS). During the period of home confinement in 2019/2020, I received informal support to design teaching practices to develop life skills for students in virtual learning settings.

Card 16. Technical Role (TR). Before the period of home confinement in 2019/2020, I used technology in my subject or subjects for educational purposes.

Card 17. Technical Role Formal Support (TRFS). During the period of home confinement in 2019/2020, I received formal support to use technology in my subject or subjects for educational purposes.

Card 18. Technical Role Informal Support (TRIS). During the period of home confinement in 2019/2020, I received informal support to use technology in my subject or subjects for educational purposes.

Card 19. Managerial Role (MR). Before the period of home confinement in 2019/2020, the virtual learning environment of my subject or subjects was a well-organized and well-managed information space.

Card 20. Managerial Role Formal Support (MRFS). During the period of home confinement in 2019/2020, I received formal support to organize and efficiently manage the virtual learning environment of my subject or subjects.

Card 21. Managerial Role Informal Support (MRIS). During the period of home confinement in 2019/2020, I received informal support to organize and efficiently manage the virtual learning environment of my subject or subjects.

References

1. Guo, Y.R.; Cao, Q.D.; Hong, Z.S.; Tan, Y.Y.; Chen, S.D.; Jin, H.J.; Tan, K.S.; Wang, D.Y.; Yan, Y. The origin, transmission and clinical therapies on coronavirus disease 2019 (COVID-19) outbreak—An update on the status. *Mil. Med. Res.* **2020**, *7*, 1–10. [CrossRef]
2. Bashir, M.F.; Benjiang, M.; Shahzad, L. A brief review of socio-economic and environmental impact of Covid-19. *Air Qual. Atmos. Health* **2020**, *13*, 1403–1409. [CrossRef] [PubMed]

3. Nicola, M.; Alsafi, Z.; Sohrabi, C.; Kerwan, A.; Al-Jabir, A.; Iosifidis, C.; Agha, M.; Agha, R. The socio-economic implications of the coronavirus and COVID-19 pandemic: A review. *Int. J. Surg.* **2020**, *78*, 185–193. [CrossRef] [PubMed]
4. Sen, A. *The Standard of Living*; Cambridge University Press: Cambridge, UK, 1987.
5. Sen, A. *Choice, Welfare and Measurement*; Harvard University Press: Cambridge, MA, USA, 1997.
6. Elleby, C.; Domínguez, I.P.; Adenauer, M.; Genovese, G. Impacts of the COVID-19 pandemic on the global agricultural markets. *Environ. Resour. Econ.* **2020**, *76*, 1067–1079. [CrossRef] [PubMed]
7. Aristovnik, A.; Keržič, D.; Ravšelj, D.; Tomaževič, N.; Umek, L. Impacts of the COVID-19 pandemic on life of higher education students: A global perspective. *Sustainability* **2020**, *12*, 8438. [CrossRef]
8. Charalampous, M.; Grant, C.A.; Tramontano, C.; Michailidis, E. Systematically reviewing remote e-workers' well-being at work: A multidimensional approach. *Eur. J. Work Organ. Psychol.* **2019**, *28*, 51–73. [CrossRef]
9. Molino, M.; Ingusci, E.; Signore, F.; Manuti, A.; Giancaspro, M.L.; Russo, V.; Zito, M.; Cortese, C.G. Wellbeing costs of technology use during Covid-19 remote working: An investigation using the Italian translation of the technostress creators scale. *Sustainability* **2020**, *12*, 5911. [CrossRef]
10. Waizenegger, L.; McKenna, B.; Cai, W.; Bendz, T. An affordance perspective of team collaboration and enforced working from home during COVID-19. *Eur. J. Inf. Syst.* **2020**, *29*, 429–442. [CrossRef]
11. Garfin, D.R. Technology as a coping tool during the coronavirus disease 2019 (COVID-19) pandemic: Implications and recommendations. *Stress Health* **2020**, *36*, 555–559. [CrossRef]
12. Vindegaard, N.; Benros, M.E. COVID-19 pandemic and mental health consequences: Systematic review of the current evidence. *Brain Behav. Immun.* **2020**, *89*, 531–542. [CrossRef]
13. Vyas, L.; Butakhieo, N. The impact of working from home during COVID-19 on work and life domains: An exploratory study on Hong Kong. *Policy Des. Pract.* **2020**, *4*, 59–76.
14. Ipsen, C.; van Veldhoven, M.; Kirchner, K.; Hansen, J. Six Key Advantages and Disadvantages of Working from Home in Europe during COVID-19. *Int. J. Environ. Res. Public Health* **2021**, *18*, 1826. [CrossRef]
15. Perera, D.M.; Moe, J. The Wellness Treatment Plan. In *The Handbook of Wellness Medicine*; IsHak, W.W., Ed.; Cambridge University Press: Cambridge, UK, 2020; Chapter 5, pp. 45–56.
16. Sen, A. *Development as Freedom*; Anchor Books: New York, NY, USA, 1999.
17. Sen, A. *Inequality Reexamined*; Oxford University Press: New York, NY, USA, 1992.
18. Bhanojirao, V. Human development report 1990: Review and assessment. *World Dev.* **1991**, *19*, 1451–1460. [CrossRef]
19. Anand, S.; Sen, A. Chapter Concepts or Human Development and Poverty: A Multidimensional Perspective. In *Human Development Report 1997*; Oxford University Press: New York, NY, USA, 1997; pp. 15–23.
20. Nussbaum, M.C. *Women and Human Development: The Capabilities Approach*; Cambridge University Press: Cambridge, UK, 2001; Volume 3.
21. Rehman, U.; Shahnawaz, M.G.; Khan, N.H.; Kharshiing, K.D.; Khursheed, M.; Gupta, K.; Kashyap, D.; Uniyal, R. Depression, anxiety and stress among Indians in times of Covid-19 lockdown. *Community Ment. Health J.* **2021**, *57*, 42–48. [CrossRef] [PubMed]
22. Pereira-Sanchez, V.; Adiukwu, F.; El Hayek, S.; Bytyçi, D.G.; Gonzalez-Diaz, J.M.; Kundadak, G.K.; Larnaout, A.; Nofal, M.; Orsolini, L.; Ramalho, R.; et al. COVID-19 effect on mental health: Patients and workforce. *Lancet Psychiatry* **2020**, *7*, e29–e30. [CrossRef]
23. Kumar, A.; Nayar, K.R. COVID 19 and its mental health consequences. *J. Ment. Health* **2020**, *180*, 817–818. [CrossRef]
24. Di Tella, M.; Romeo, A.; Benfante, A.; Castelli, L. Mental health of healthcare workers during the COVID-19 pandemic in Italy. *J. Eval. Clin. Pract.* **2020**, *26*, 1583–1587. [CrossRef] [PubMed]
25. Ruiz-Fernández, M.D.; Ramos-Pichardo, J.D.; Ibáñez-Masero, O.; Cabrera-Troya, J.; Carmona-Rega, M.I.; Ortega-Galán, Á.M. Compassion fatigue, burnout, compassion satisfaction and perceived stress in healthcare professionals during the COVID-19 health crisis in Spain. *J. Clin. Nurs.* **2020**, *29*, 4321–4330. [CrossRef] [PubMed]
26. Barzilay, R.; Moore, T.M.; Greenberg, D.M.; DiDomenico, G.E.; Brown, L.A.; White, L.K.; Gur, R.C.; Gur, R.E. Resilience, COVID-19-related stress, anxiety and depression during the pandemic in a large population enriched for healthcare providers. *Transl. Psychiatry* **2020**, *10*, 291. [CrossRef]
27. Elbay, R.Y.; Kurtulmuş, A.; Arpacıoğlu, S.; Karadere, E. Depression, anxiety, stress levels of physicians and associated factors in Covid-19 pandemics. *Psychiatry Res.* **2020**, *290*, 113130. [CrossRef]
28. Bochtis, D.; Benos, L.; Lampridi, M.; Marinoudi, V.; Pearson, S.; Sørensen, C.G. Agricultural workforce crisis in light of the COVID-19 pandemic. *Sustainability* **2020**, *12*, 8212. [CrossRef]
29. Mishra, A.; Bruno, E.; Zilberman, D. Compound natural and human disasters: Managing drought and COVID-19 to sustain global agriculture and food sectors. *Sci. Total Environ.* **2021**, *754*, 142210. [CrossRef] [PubMed]
30. Richards, T.J.; Rickard, B. COVID-19 impact on fruit and vegetable markets. *Can. J. Agric. Econ. Can. D'agroeconomie* **2020**, *68*, 189–194. [CrossRef]
31. Weersink, A.; von Massow, M.; McDougall, B. Economic thoughts on the potential implications of COVID-19 on the Canadian dairy and poultry sectors. *Can. J. Agric. Econ. Can. D'agroeconomie* **2020**, *68*, 195–200. [CrossRef]
32. Assunção Flores, M.; Gago, M. Teacher education in times of COVID-19 pandemic in Portugal: national, institutional and pedagogical responses. *J. Educ. Teach.* **2020**, *46*, 507–516. [CrossRef]

33. Radwan, A.; Radwan, E. Social and Economic Impact of School Closure during the Outbreak of the COVID-19 Pandemic: A Quick Online Survey in the Gaza Strip. *Pedagog. Res.* **2020**, *5*, 1–5. [CrossRef]
34. d'Orville, H. COVID-19 causes unprecedented educational disruption: Is there a road towards a new normal? *Prospects* **2020**, *49*, 11–15. [CrossRef] [PubMed]
35. Baron, E.J.; Goldstein, E.G.; Wallace, C.T. Suffering in silence: How COVID-19 school closures inhibit the reporting of child maltreatment. *J. Public Econ.* **2020**, *190*, 104258. [CrossRef] [PubMed]
36. Murphy, M.P. COVID-19 and emergency eLearning: Consequences of the securitization of higher education for post-pandemic pedagogy. *Contemp. Secur. Policy* **2020**, *41*, 492–505. [CrossRef]
37. Onyema, E.M.; Eucheria, N.C.; Obafemi, F.A.; Sen, S.; Atonye, F.G.; Sharma, A.; Alsayed, A.O. Impact of Coronavirus pandemic on education. *J. Educ. Pract.* **2020**, *11*, 108–121.
38. Korkmaz, G.; Toraman, Ç. Are we ready for the post-COVID-19 educational practice? An investigation into what educators think as to online learning. *Int. J. Technol. Educ. Sci. IJTES* **2020**, *4*, 293–309. [CrossRef]
39. König, J.; Jäger-Biela, D.J.; Glutsch, N. Adapting to online teaching during COVID-19 school closure: Teacher education and teacher competence effects among early career teachers in Germany. *Eur. J. Teach. Educ.* **2020**, *43*, 608–622. [CrossRef]
40. Bergdahl, N.; Nouri, J. Covid-19 and crisis-prompted distance education in Sweden. *Technol. Knowl. Learn.* **2020**, 1–17. [CrossRef]
41. Primdahl, N.L.; Borsch, A.S.; Verelst, A.; Jervelund, S.S.; Derluyn, I.; Skovdal, M. 'It's difficult to help when I am not sitting next to them': How COVID-19 school closures interrupted teachers' care for newly arrived migrant and refugee learners in Denmark. *Vulnerable Child. Youth Stud.* **2020**, *16*, 75–85. [CrossRef]
42. Huang, R.; Tlili, A.; Chang, T.W.; Zhang, X.; Nascimbeni, F.; Burgos, D. Disrupted classes, undisrupted learning during COVID-19 outbreak in China: Application of open educational practices and resources. *Smart Learn. Environ.* **2020**, *7*, 1–15. [CrossRef]
43. Mohamad Nasri, N.; Husnin, H.; Mahmud, S.N.D.; Halim, L. Mitigating the COVID-19 pandemic: A snapshot from Malaysia into the coping strategies for pre-service teachers' education. *J. Educ. Teach.* **2020**, *46*, 546–553. [CrossRef]
44. Ali, W. Online and remote learning in higher education institutes: A necessity in light of COVID-19 pandemic. *High. Educ. Stud.* **2020**, *10*, 16–25. [CrossRef]
45. Chacín, A.J.P.; González, A.I.; Peñaloza, D.W. Educación superior e investigación en Latinoamérica: Transición al uso de tecnologías digitales por Covid-19. *Rev. Cienc. Soc.* **2020**, *26*, 98–117.
46. Riccardi, A.; Gemignani, J.; Fernández-Navarro, F.; Heffernan, A. Optimisation of Non-Pharmaceutical Measures in COVID-19 Growth via Neural Networks. *IEEE Trans. Emerg. Top. Comput. Intell.* **2021**, *5*, 79–91. [CrossRef]
47. Fanelli, D.; Piazza, F. Analysis and forecast of COVID-19 spreading in China, Italy and France. *Chaos Solitons Fractals* **2020**, *134*, 109761. [CrossRef]
48. Dey, S.K.; Rahman, M.M.; Siddiqi, U.R.; Howlader, A. Analyzing the epidemiological outbreak of COVID-19: A visual exploratory data analysis approach. *J. Med Virol.* **2020**, *92*, 632–638. [CrossRef] [PubMed]
49. Saez, M.; Tobias, A.; Varga, D.; Barceló, M.A. Effectiveness of the measures to flatten the epidemic curve of COVID-19. The case of Spain. *Sci. Total Environ.* **2020**, *727*, 138761. [CrossRef] [PubMed]
50. Gómez-Rey, P.; Barbera, E.; Fernández-Navarro, F. Student voices on the roles of instructors in asynchronous learning environments in the 21st century. *Int. Rev. Res. Open Distrib. Learn.* **2017**, *18*, 234–251. [CrossRef]
51. Gómez-Rey, P.; Fernández-Navarro, F.; Barbera, E.; Carbonero-Ruz, M. Understanding student evaluations of teaching in online learning. *Assess. Eval. High. Educ.* **2018**, *43*, 1272–1285. [CrossRef]
52. Gómez-Rey, P.; Barbera, E.; Fernández-Navarro, F. Students' perceptions about online teaching effectiveness: A bottom-up approach for identifying online instructors' roles. *Australas. J. Educ. Technol.* **2018**, *34*, 116–130. [CrossRef]
53. Alkire, S. *Valuing Freedoms: Sen's Capability Approach and Poverty Reduction*; Oxford University Press: New Delhi, India, 2005.
54. Stephenson, W. Perspectives on Q methodology: I. Statements of problems. *Operant. Subj.* **1984**, *4*, 110–114.
55. Shapiro, S.S.; Wilk, M.B. An analysis of variance test for normality (complete samples). *Biometrika* **1965**, *52*, 591–611. [CrossRef]
56. Shapiro, S.S.; Francia, R. An approximate analysis of variance test for normality. *J. Am. Stat. Assoc.* **1972**, *67*, 215–216. [CrossRef]
57. Pereira, D.G.; Afonso, A.; Medeiros, F.M. Overview of Friedman's test and post-hoc analysis. *Commun. Stat.-Simul. Comput.* **2015**, *44*, 2636–2653. [CrossRef]
58. Simar, L.; Wilson, P.W. Non-parametric tests of returns to scale. *Eur. J. Oper. Res.* **2002**, *139*, 115–132. [CrossRef]
59. Mack, G.A.; Skillings, J.H. A Friedman-type rank test for main effects in a two-factor ANOVA. *J. Am. Stat. Assoc.* **1980**, *75*, 947–951. [CrossRef]
60. Barberà, E.; Gómez-Rey, P.; Fernández-Navarro, F. A cross-national study of teacher's perceptions of online learning success. *Open Learn. J. Open Distance E-Learn.* **2016**, *31*, 25–41. [CrossRef]
61. Gómez-Rey, P.; Barbera, E.; Fernández-Navarro, F. Measuring teachers and learners' perceptions of the quality of their online learning experience. *Distance Educ.* **2016**, *37*, 146–163. [CrossRef]
62. Prenksy, M. Digital natives, digital immigrants. *Horizon* **2001**, *9*, 1–6.
63. Naidu, P.; Derani, N.E.S. A comparative study on quality of education received by students of private universities versus public universities. *Procedia Econ. Financ.* **2016**, *35*, 659–666. [CrossRef]
64. Gidley, J.M.; Hampson, G.P.; Wheeler, L.; Bereded-Samuel, E. From access to success: An integrated approach to quality higher education informed by social inclusion theory and practice. *High. Educ. Policy* **2010**, *23*, 123–147. [CrossRef]
65. Tam, M. Measuring quality and performance in higher education. *Qual. High. Educ.* **2001**, *7*, 47–54. [CrossRef]

66. Noaman, A.Y.; Ragab, A.H.M.; Madbouly, A.I.; Khedra, A.M.; Fayoumi, A.G. Higher education quality assessment model: Towards achieving educational quality standard. *Stud. High. Educ.* **2017**, *42*, 23–46. [CrossRef]

67. Emmer, E.T.; Stough, L.M. Classroom management: A critical part of educational psychology, with implications for teacher education. *Educ. Psychol.* **2001**, *36*, 103–112. [CrossRef]

68. Stoughton, E.H. "How will I get them to behave?": Pre service teachers reflect on classroom management. *Teach. Teach. Educ.* **2007**, *23*, 1024–1037. [CrossRef]

69. Brouwers, A.; Tomic, W. A longitudinal study of teacher burnout and perceived self-efficacy in classroom management. *Teach. Teach. Educ.* **2000**, *16*, 239–253. [CrossRef]

70. Czekanski, K.E.; Wolf, Z.R. Encouraging and Evaluating Class Participation. *J. Univ. Teach. Learn. Pract.* **2013**, *10*, 1–13.

71. Larson, L.C.; Miller, T.N. 21st century skills: Prepare students for the future. *Kappa Delta Pi Rec.* **2011**, *47*, 121–123. [CrossRef]

72. Geisinger, K.F. 21st century skills: What are they and how do we assess them? *Appl. Meas. Educ.* **2016**, *29*, 245–249. [CrossRef]

73. Walker, M. Amartya Sen's capability approach and education. *Educ. Action Res.* **2005**, *13*, 103–110. [CrossRef]

74. Vázquez-De Francisco, M.J.; Torres-Jiménez, M.; Caldentey-Del Pozo, P.; Nekhay, O. Evaluating impacts of University Cooperation for Development from the Voice of the South. *Rev. Econ. Mund.* **2017**, *47*, 95–116.

75. Slocum, S.L.; Dimitrov, D.Y.; Webb, K. The impact of neoliberalism on higher education tourism programs: Meeting the 2030 sustainable development goals with the next generation. *Tour. Manag. Perspect.* **2019**, *30*, 33–42. [CrossRef]

76. Alkire, S. Why the capability approach? *J. Hum. Dev.* **2005**, *6*, 115–135. [CrossRef]

77. Robeyns, I. *Wellbeing, Freedom and Social Justice: The Capability Approach Re-Examined*; Open Book Publishers: Cambridge, UK, 2017.

78. Robinson, C.C.; Hullinger, H. New benchmarks in higher education: Student engagement in online learning. *J. Educ. Bus.* **2008**, *84*, 101–109. [CrossRef]

79. Dixson, M.D. Creating Effective Student Engagement in Online Courses: What Do Students Find Engaging? *J. Scholarsh. Teach. Learn.* **2010**, *10*, 1–13.

80. Kahn, P.; Everington, L.; Kelm, K.; Reid, I.; Watkins, F. Understanding student engagement in online learning environments: The role of reflexivity. *Educ. Technol. Res. Dev.* **2017**, *65*, 203–218. [CrossRef]

81. Jeladze, E.; Pata, K. Smart, digitally enhanced learning ecosystems: Bottlenecks to sustainability in Georgia. *Sustainability* **2018**, *10*, 2672. [CrossRef]

82. Abad-Segura, E.; González-Zamar, M.D.; Infante-Moro, J.C.; Ruipérez García, G. Sustainable management of digital transformation in higher education: Global research trends. *Sustainability* **2020**, *12*, 2107. [CrossRef]

83. García-Peñalvo, F.J. Avoiding the Dark Side of Digital Transformation in Teaching. An Institutional Reference Framework for eLearning in Higher Education. *Sustainability* **2021**, *13*, 2023. [CrossRef]

84. Margot, K.C.; Kettler, T. Teachers' perception of STEM integration and education: A systematic literature review. *Int. J. STEM Educ.* **2019**, *6*, 1–16. [CrossRef]

85. Dong, Y.; Wang, J.; Yang, Y.; Kurup, P.M. Understanding intrinsic challenges to STEM instructional practices for Chinese teachers based on their beliefs and knowledge base. *Int. J. STEM Educ.* **2020**, *7*, 1–12. [CrossRef]

86. Watermeyer, R.; Crick, T.; Knight, C.; Goodall, J. COVID-19 and digital disruption in UK universities: Afflictions and affordances of emergency online migration. *High. Educ.* **2020**, *81*, 1–19. [CrossRef]

87. Rapanta, C.; Botturi, L.; Goodyear, P.; Guàrdia, L.; Koole, M. Online university teaching during and after the Covid-19 crisis: Refocusing teacher presence and learning activity. *Postdigital Sci. Educ.* **2020**, *2*, 923–945. [CrossRef]

88. Bao, W. COVID-19 and online teaching in higher education: A case study of Peking University. *Hum. Behav. Emerg. Technol.* **2020**, *2*, 113–115. [CrossRef]

89. Quezada, R.L.; Talbot, C.; Quezada-Parker, K.B. From Bricks and Mortar to Remote Teaching: A Teacher Education Program's Response to COVID-19. *J. Educ. Teach.* **2020**, *46*, 472–483. [CrossRef]

90. O'Flaherty, J.; Phillips, C. The use of flipped classrooms in higher education: A scoping review. *Internet High. Educ.* **2015**, *25*, 85–95. [CrossRef]

91. Van Laar, E.; Van Deursen, A.J.; Van Dijk, J.A.; De Haan, J. The relation between 21st-century skills and digital skills: A systematic literature review. *Comput. Hum. Behav.* **2017**, *72*, 577–588. [CrossRef]

92. Qian, M.; Clark, K.R. Game-based Learning and 21st century skills: A review of recent research. *Comput. Hum. Behav.* **2016**, *63*, 50–58. [CrossRef]