

Article

Online Learning and Experiences in Higher Education during COVID-19: A Systematic Review

Liliana Pedraja-Rejas ^{1,*}, Emilio Rodríguez-Ponce ², Camila Muñoz-Fritis ¹ and David Laroze ² 

¹ Departamento de Ingeniería Industrial y de Sistemas, Universidad de Tarapacá, Casilla 7D, Arica 1020000, Chile; camila.munoz.fritis@gmail.com

² Instituto de Alta Investigación, Universidad de Tarapacá, Casilla 7D, Arica 1020000, Chile; erodriguez@uta.cl (E.R.-P.); dlarozen@uta.cl (D.L.)

* Correspondence: lpedraja@academicos.uta.cl

Abstract: This paper aims to learn about Chilean teachers and students' experiences and positions to understand how they coped with online learning during the COVID-19 pandemic. The article focuses on student engagement, virtual professional practices, and the difficulties teachers perceive. A review of articles published in Web of Science, Scopus, and SciELO is carried out to meet the objective. The results show different levels of behavioral, cognitive, and affective engagement of students. Different complications were also identified in the realization of professional practices in virtual modality. The profound impacts that this area had on teacher training were mainly highlighted. Finally, university professors raised difficulties in five aspects: acceptance and use, domestic, technological, organizational, and with students. These findings provide several recommendations for the post-COVID-19 era, which can serve as a guide for policymakers, university managers, and academics.

Keywords: COVID-19; online education; online learning; higher education; universities; Chile



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1. Introduction

The World Health Organization declared COVID-19 a pandemic on 11 March 2020 [1] due to its high level of contagiousness and mortality. Consequently, this had significant repercussions for the education sector since the global systems had to be restructured due to the suspension of on-site classes in schools and universities as a measure imposed by governments to curb the spread of the disease [2].

Immediately after the declaration made by the World Health Organization, Chile began the process of defining guidelines for remote learning, which meant that all educational establishments in the country had to quickly adapt to the emergency circumstances to implement online learning as a new teaching modality during the first quarter of 2020 [2,3].

For Chilean universities, this was a challenging task for several reasons. First, it is known that online education brings challenges in the technological (e.g., connectivity and availability of equipment), social (e.g., sustainable communication), pedagogical (e.g., lack of interaction and skills) [4], and ethical (e.g., cheating in evaluations and plagiarism) spheres [5]. Second, the vast majority of these institutions had no prior experience with virtual delivery [2], and third, the short-term implementation requirement meant that there was not enough time to carefully reflect and design the transition [4].

More generically, the crisis that ensued pushed universities and other types of HEIs to improve their information, communication, and technology (ICT) digital infrastructures, in addition to the need to make academics digitally literate in a relatively short period of time [6]. Within this crisis scenario, the need for digital literacy became evident for both teachers, as knowledge transmitters, and students, as knowledge receivers. Digital literacy encompasses an interrelated set of skills, competencies, knowledge, and practical and intellectual abilities to perform in the digital era, including the correct use of information and communication technologies (ICT)—and hence, the importance of integrating them

into curricula—the efficient management of information, and the collaborative performance of tasks [7–9].

Cultural and technical factors also affected the transition to the new modality. Despite the country's high consumption of technology, for example, it was known that it mainly served for personal entertainment rather than for educational purposes [3]. Furthermore, Internet access was uneven across the country [3], with technological skill gaps among teachers [10]. These factors provided the perfect scenario for COVID-19 to shake up the entire Chilean educational system, given that it pushed teachers with little or no preparation to teach and learn in a completely virtual environment.

Consequently, it seems plausible to identify what happened and how learning was addressed in this time of crisis. Additionally, Chile is an interesting case to analyze because although the country has made great efforts in educational policies around ICT, it has not been able to adequately resolve the tensions arising from “a technocratic logic in which digital technologies are adopted as a technical solution to implement the educational agenda, and a sociocultural logic that requires recognizing the transformative power of digital technologies in society and revising the prevailing educational model” [11] (pp. 105–106). Considering this, along with the fact that the country has seen an upward trend in university enrollments in the last decade [12], it is crucial to question how to guarantee quality education that responds to the new requirements and profiles of students, who know that they are more connected and closer to different technologies. E-learning becomes relevant in this scenario as a good alternative because it allows adapting the material to the needs of students and, consequently, maximizing their learning outcomes [13].

2. Background

2.1. Active Learning

The importance of promoting global citizenship [14], education for sustainable development [15], and improved levels of access [16], as well as educational quality and excellence in higher education [17], has been strongly emphasized since the promulgation of the Sustainable Development Goals in 2015.

Higher education professors now have the continuous challenge of finding new methods to involve students in learning [18], so they work under an active logic. The “new pedagogy” is based on the premise that learning strategies play an essential role in the acquisition of knowledge and, thus, approaching this as a constructive rather than a receptive process could contribute to achieving meaningful learning [19], which is an indicator of high-quality education [20].

The potential of active methodologies to improve critical thinking [21], cognitive learning, and develop skills such as leadership, problem-solving, and autonomy in students has been discussed in the literature [22]. Additionally, these are highlighted by exploring their attitudes and values, involving them in activities, and encouraging them to think about why and how they are doing things [23].

COVID-19 made the role of universities more visible [24] and opened a window of opportunity in digital transformation processes and adopting new pedagogies [17]. The incorporation of active learning tools will be imperative in the years to come because of their potential to generate constant engagement that benefits students and helps them develop their critical thinking [22], which has been identified as a predictor of skill in academic performance [25].

2.2. Online Learning

Effective online learning encompasses teaching and learning through the web and emphasizes digital communication and collaboration and using digital resources and technological applications for the learning process [26,27]. Learning can occur synchronously (simultaneous), asynchronously (non-simultaneous, characterized by access to information at any time and place), or by mixing both modalities [28]. Overall, online or distance edu-

cation comprises online learning and involves “delivery mechanisms, instructor workload or support for administrative processes” [4] (p. 2).

Emerging as a response to the problems of time and space commonly associated with the traditional form of education, online learning has been recognized as an alternative to improve access to training, quality of learning, and cost-effectiveness in the sector [29]. Furthermore, it has also been suggested that it might help stimulate higher-order thinking levels in students, for example, as asynchronous networks allow students more time to think critically and reflectively, stimulating analysis, synthesis, judgment, and application [30].

While virtuality provides flexibility to the teaching–learning process [3], it also implies a change in the role and methodologies of teachers, changing them from being the primary source of information to becoming guides for students, enabling them to assume a leading role in constructing their knowledge based on the use of different media [31]. According to Pandit and Agrawal [26], the role of academics should encompass four main areas to facilitate online learning, which they identified as: pedagogical practices (facilitation of the learning process), social balance (creation of a space conducive to learning in this modality), managerial efficiency (establishment of clear objectives, rules, pace, and decisions), and technical knowledge.

Meanwhile, students have been identified as the critical actors in the online learning model, as they drive attention, participation, and intention to learn within the new framework [26]. Although they are recognized for having a high level of exposure to technologies and digital media [9], the concern lies in guaranteeing their commitment—effort invested in learning activities [27]—and achieving their satisfaction with the process, considered as a crucial determinant for success in online education [2].

On this matter, it has been postulated that to improve students’ experiences, it is necessary to: (1) have the necessary logistical and technological component to facilitate participation, (2) correctly adapt the content to the new modality without losing knowledge or sacrificing interaction between peers and professors, and (3) deliver formative feedback throughout the learning process [32]. In other words, to achieve the desired learning outcomes and meet the needs and expectations of students, educational institutions and academics themselves must pay special attention to the design and implementation of content, participant interactions and reflections, course activities and assessments, as well as consider the learning environments (digital, physical, social, and cultural) where educational processes take place [33].

2.3. Student Engagement

Fredricks et al. [34] argue that student engagement is a multidimensional construct that significantly links behavioral, cognitive, and affective components. The authors state that behavioral engagement is based on the idea of participation (e.g., in academic and extracurricular activities), cognitive engagement involves the willingness to strive to understand complex ideas and master difficult skills, while emotional engagement encompasses students’ positive and negative reactions to teachers, peers, and others. Thus, it can be said that student engagement is driven by motivation and fostered by various contextual factors [35].

The rapid growth of technological tools and online teaching–learning environments has highlighted the need for students in this modality to remain engaged with the content, the teacher, and their peers, because regardless of the space where their learning takes place, it is still an interactive event, whose success is based on the instructor’s ability to create a sense of presence and engage students, as well as support them to take greater responsibility for their own learning [36].

3. Purpose and Research Questions

Through a systematic literature review, this article aims to study the experiences and positions of essential Chilean actors (teachers and students) to understand how they

have coped with online learning during the COVID-19 pandemic. The following research questions have been established for this analysis:

RQ1. What was the engagement of Chilean university students in online learning during the pandemic?

RQ2. How did Chilean students perceive their virtual practicum?

RQ3. What were the biggest challenges faced by Chilean university teachers in virtual education during the pandemic?

The experiences and opinions shared by the key actors help to identify several lessons learned during the emergency. The recommendations provided for the post-COVID-19 era can serve as a guide for politicians, university managers, and academics, who must be the driving force behind the use of ICT in education, promoting the digital literacy of all individuals.

4. Methodology

This study systematically reviewed the literature to obtain information related to the defined research questions. By summarizing, analyzing, and synthesizing a body of work, this approach provides a better understanding of the field of study, identifies the basis of that knowledge, allows the development and evaluation of theories, and identifies gaps and priorities for future research [37–39].

4.1. Sample Selection

The PRISMA approach was used to carry out the sample selection. This approach consists of guidelines that aim to provide transparency to the review process and help improve the reports to be more complete and accurate [38]. Table 1 details the inclusion and exclusion criteria used in the search.

Table 1. Inclusion and exclusion criteria.

Inclusion Criteria	Exclusion Criteria
Article	Other types of documents
Published between 2020 and 14 June 2023 (date of data extraction)	Published before 2020
Higher education institutions	Other institutions (e.g., preschool, primary school, secondary school)
Empirical research (primary/participatory research)	Not empirical research (e.g., theoretical and literature review)
Contextualized only in Chile	Contextualized in other countries
Focused on students and/or teachers	Focused on other members of the academic community
Online learning	Other topics

The Web of Science (WoS), Scopus, and SciELO databases were used to identify articles. It is noteworthy that WoS and Scopus are considered the leading bibliographic databases as they are two of the most complete, multidisciplinary, and widely used data sources in the world [40], while SciELO was included because it is a database that indexes a large number of Latin American journals [27].

The search descriptors were the following: (COVID OR pandemic) AND (virtual classes OR virtual classroom OR online learning OR distance learning OR e-learning OR remote learning OR remote learning OR remote teaching OR online education OR virtual education OR remote education OR remote education) AND (Chile OR Chilean). The process identified 153 articles, of which 124 corresponded to WoS, 13 to Scopus, and 16 to SciELO. Then, 14 duplicates were eliminated, leaving 139 papers.

Screening consisted of two sequential steps: first, the titles of the articles were reviewed, and second, the abstracts of the articles were read, and 54 papers were sent to the final

stage, which consisted of reading the full texts to evaluate their eligibility. Thus, a sample of 28 articles was obtained. Figure 1 shows the stages that were carried out to select the sample.

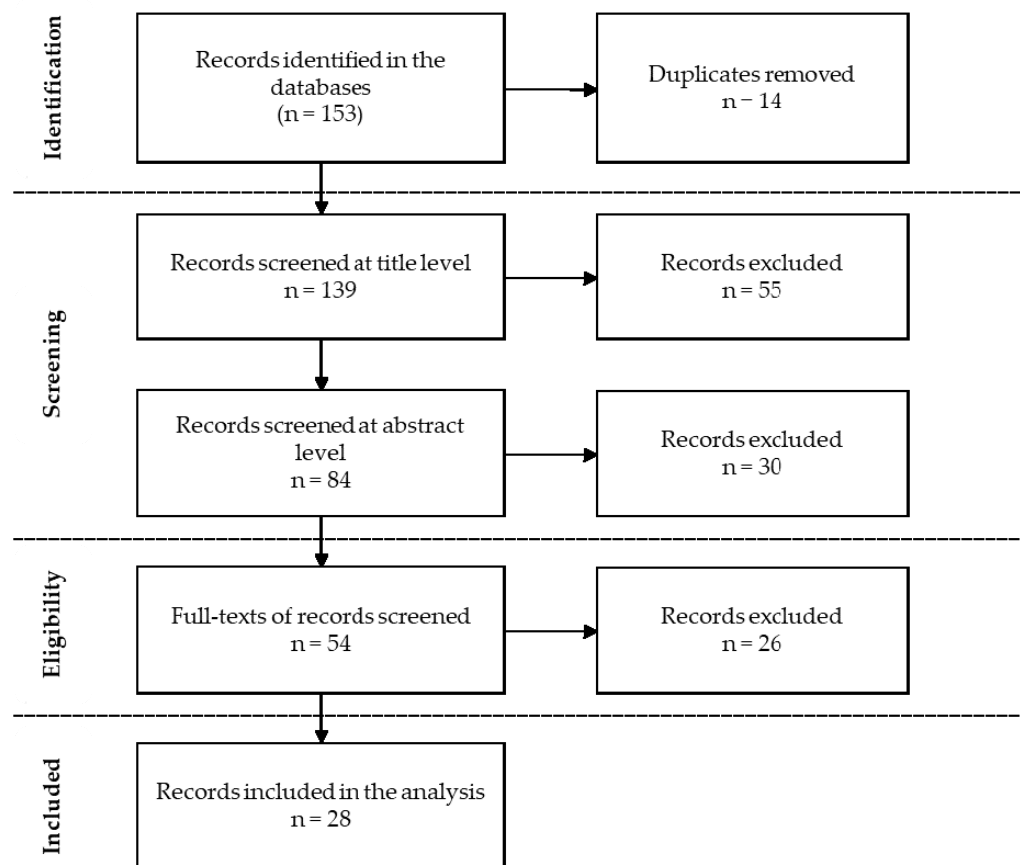


Figure 1. PRISMA flow diagram.

Table 2 presents the general characteristics of the selected articles. Most of the papers were published in 2022, were written in Spanish, had university students as the main actors, and were contextualized in the field of education (pedagogies). Furthermore, quantitative research methods were the most used, with the survey being the primary data collection tool (in 19 papers).

The papers were published in 22 different journals and, except for one article, all were open access. Finally, more than 86% of the papers were collaborative (two or more authors). Most were written by authors affiliated with a Chilean university.

4.2. Data Analysis

A thematic analysis was conducted on the selected studies. The concepts, categories, and themes emerged through inductive (from the data analysis itself) and deductive (from the existing theoretical structure) approaches [41]. The process involved a reading and rereading of the sample works. The creation of the categories was carried out by the researchers together to increase the understanding of the papers and to collect key information. In case of differences of opinion, these were discussed until agreement was reached. Microsoft Excel (Microsoft Corporation, Redmond, WA, USA) was used to organize the results.

Seventeen articles from the sample that addressed student engagement in online learning were evaluated to answer the first research question. Coding categories were made according to the three dimensions of student engagement: behavioral (participation, interaction, collaboration, achievement, and skill development), cognitive (motivation, effort,

self-efficacy, self-regulated learning, and reflection), and affective (attitude, satisfaction, and well-being) [27].

Table 2. General characteristics of the selected articles.

Categories	Total Articles	%
Year		
2020	1	3.57
2021	10	35.71
2022	13	46.43
2023	4	14.29
Journal		
International Journal of Morphology	3	10.71
Retos-Nuevas Tendencias en Educación Física Deporte y Recreación	3	10.71
Páginas de Educación	2	7.14
Perspectiva Educacional	2	7.14
Others	18	64.29
Language		
Spanish	16	57.14
English	12	42.86
Type of authorship of the articles		
Domestic collaboration	21	75.00
International collaboration	6	21.43
Single-authored article	1	3.57
Participants		
Students	19	67.86
Teachers	6	21.43
Both	3	10.71
Method		
Quantitative	15	53.57
Qualitative	9	32.14
Mixed method	4	14.29
Discipline		
Education	8	28.57
Different disciplines	7	25.00
Health Sciences	6	21.43
Engineering and Science	5	17.86
Business and Accounting	1	3.57
Not specified	1	3.57

The search, meanwhile, revealed five articles that addressed practicum as a central theme. Practicum refers to the mandatory activity in the curriculum that seeks to have students apply their theoretical knowledge in a real work environment and acquire practical experience. In order not to harm the students' professional training, these activities were developed in a virtual modality during the COVID-19 pandemic. In this paper, the data from the sample items were organized according to the participants in the study and the difficulties and feelings they experienced during the process.

Finally, the third research question was answered by eight papers. The difficulties perceived by academics were presented according to the categories: acceptance and use (experience, knowledge, attitudes, and behaviors towards the online modality and the use of ICT), domestic (spaces, activities, and time to exercise their work from home), technological (connectivity, use of platforms, and equipment), organizational (relationship with their university and faculty), and with students (interaction, participation, and communication).

5. Results

Based on the results obtained in the systematic review, the results are presented following the foci of the three research questions.

5.1. Student Engagement

Table 3 details the participants and findings according to the 3 dimensions of student engagement of the 17 papers analyzed.

Table 3. Description of the 17 studies on student engagement.

Author(s)	Sample	Behavioral Engagement	Cognitive Engagement	Affective Engagement
Aravena Reyes and Baeza [42]	58 first-year students from different disciplines	Adjustment to online education was slower than expected. Low participation in virtual classes due to embarrassment. Connection problems.	Advantages in the availability of information (recorded classes and support material).	They valued having more time to study or be with family and peer support. Many felt stressed, anxious, or frustrated.
Armijos et al. [31]	625 undergraduate students from different disciplines	60.6% had problems with Internet connection to access classes. Teacher–student communication was effective.	96% had no problems using technological tools. 40.2% stated that they had learned a lot in the online classes.	81% felt anxious or stressed, 64.3% felt tired, and 46.6% felt annoyed or frustrated.
Badilla-Quintana and Sandoval-Henríquez [43]	140 students of pedagogy programs	Simulations in a virtual world have a positive effect on pedagogical performance.	Higher reflection from students, especially at the senior level.	Not reported.
Flores Ferro et al. [44]	542 physical education students	They positively valued online resources and communication tools.	Low levels of motivation in online classes in both theoretical and practical subjects.	Students in lower grades had higher levels of satisfaction with virtual classes. A relationship was found between satisfaction levels and connectivity.
Gallardo Ramos and Lazcano Rojas [3]	52 students in 2020 and 17 students in 2021 from Bachelor of Science programs	Frequent attendance to virtual classes. The highest level of participation was at the teacher’s suggestion. Satisfactory levels of communication with teachers.	41% dedicated 4 to 5 h per week to reinforce what they had seen in class. More than 50% of second-year courses students considered that a greater effort is required in virtual classes.	In general, there was satisfaction with the online class process.
Gormaz-Lobos et al. [45]	117 engineering students	51.3% were proactive in carrying out tasks. Over 71% reported difficulties in interacting with the teacher and classmates.	52.1% expressed low motivation to learn online. 45.3% considered that they had a good mastery of strategies and resources for autonomous learning. 42.4% said they had good levels of responsibility for their learning process.	49.6% valued the time flexibility offered by online learning.

Table 3. Cont.

Author(s)	Sample	Behavioral Engagement	Cognitive Engagement	Affective Engagement
Laurens-Arredondo [46]	96 industrial engineering students	The percentage of students who achieved the expected objectives increased. Students were engaged in learning.	Motivation to actively participate in classes.	The use of augmented reality technologies was positively valued.
Lobos et al. [47]	8265 students in various disciplines	Difficulties in relating with their peers.	High self-efficacy perception for online learning and online teaching.	They felt that virtual resources and activities would help them in their learning.
Lobos et al. [48]	2841 students from various majors	Problems in establishing relationships with classmates.	Good levels of self-efficacy for online learning.	Although they had good perceptions of online learning, they did not prefer it to face-to-face learning.
Montero et al. [2]	648 business and accounting students	Unsatisfactory relationships with peers.	Not reported.	Satisfaction with the quality and level of learning achieved in virtual classes.
Pérez-Villalobos et al. [49]	1006 health undergraduate program students	90.4% of students completed course assignments on time.	46.8% considered the courses conducted at distant classes motivating. 44.8% were learning to apply what they learned in the courses autonomously. 50.7% believed that the activities were beneficial to achieve the expected learning.	51.4% considered that the virtual platforms allowed the course activities to be carried out satisfactorily. 86.6% had a cordial relationship with their professors.
Prieto et al. [1]	15 students (trainees and graduates) in dentistry	Difficulty in achieving fluent verbal communication with the teacher and peers. Used social networks to contact close friends.	Higher workload, they needed more study time. They resorted to the recorded classes to take notes.	They valued spending more time with their families, but most felt stressed and anxious.
Rodríguez-Luengo et al. [50]	115 dental students	Student participation increased.	The tools offered favored student autonomy. Demotivation when the image or audio was deficient.	They valued flexibility but felt that the greater the virtuality, the lower the quality of learning.
Romero Alonso et al. [51]	323 first-year undergraduate students from different disciplines	17% reported having problems with connection, 21% with access to a PC, and 15% with time for virtual learning.	Although students generally had a high self-concept regarding ICT skills, 52% stated they had trouble adapting to the remote format.	Students presented a favorable attitude toward the use of ICT.

Table 3. Cont.

Author(s)	Sample	Behavioral Engagement	Cognitive Engagement	Affective Engagement
Sánchez-Ramírez et al. [52]	339 health undergraduate program students	Not reported.	Students in online classes were clearer about the content (71.9%) and how deeply they should study it (50.8%). Likewise, they could plan their study time better than those in face-to-face classes.	Not reported.
Vidal et al. [53]	125 health undergraduate program students	Not reported.	83% had no difficulties in using digital resources.	A high degree of satisfaction with using these resources (94%).
Zamarreño and Loyola [54]	74 engineering and geology undergraduate students	Over 79% of students improved their academic performance by using virtual learning objects.	Over 70% considered the ease with which they could obtain information advantageously. Independent work improved.	The technological tool alone does not completely satisfy the needs. Teacher feedback and coaching are required.

Behavioral engagement: The studies analyzed detected difficulties on the part of students in relating (interacting and communicating) with their classmates [1,45,47,48]. Regarding the relationship with teachers, some studies detected good communication [3,31,44], while others highlighted problems in interacting [45] and achieving fluent verbal communication with them [1].

Though virtuality was regarded as an acceptable alternative to increase student participation [50], some issues were detected with the students' interventions in the classes themselves, as some acknowledged feeling embarrassed [42], while others waited for the teacher's indications before intervening in the discussions [3].

The adaptation to online education was deemed to be slower than expected by some students [42]. Nevertheless, some advantages were recognized concerning pedagogical aspects. For instance, some were more proactive in performing tasks [45], completed the tasks assigned in the courses on time [49], were engaged in learning, and achieved the expected objectives [46]. Additionally, an improvement in academic performance [54] and pedagogical performance was detected in the case of trainee teachers [43].

Regarding technological issues, it is noteworthy that some students reported having problems with the Internet connection, which hindered the learning process [31,42,51]. This situation highlights how the economic resources available are a central aspect that affects student performance.

Cognitive engagement: The students showed different levels of motivation in the reviewed studies, as some considered the use of technological tools motivating [49] and wanted to actively participate in classes [46], while others showed low motivation for online learning [44,45], especially when the image or audio was deficient [50].

Several studies found that the tools offered facilitated students' access to information [42,54], which favored their independent work [45,49,50,54]. Additionally, immersive technologies favor pedagogical reflection [43].

Overall, students had no difficulties using technological tools [31,51,53], expressing high self-efficacy for online learning [47,48]. Nevertheless, they indicated that this modality required additional effort [1,3].

Affective engagement: In the analyzed works, students valued virtual resources and activities because such resources and activities would help them in their learning [47].

Additionally, they showed a favorable attitude toward online classes [44] and the use of technologies [51]. Satisfaction levels with remote classes [2,3,47], virtual platforms [49], and the use of digital resources [53] and technological tools [46] were generally reported to be good.

Although students valued the flexibility [45,50] and the time that the virtual modality offered them to study and spend with their family and friends, many reported feeling tired, stressed, anxious, or frustrated [1,31,42]. Furthermore, some of them felt that the higher the virtuality, the lower the quality (e.g., attention, concentration, and visual memory) and experience of learning (e.g., social aspects) [47,50]. Thus, it is suggested that to guarantee a successful learning process, technological tools should always go hand-in-hand with continuous feedback and support from teachers [54].

5.2. Practicum in Virtual Modality

Table 4 presents the studies analyzed to answer the research question on the virtual practicum modality, listing the participants, the difficulties, and the feelings they experienced during the process.

Table 4. Description of the five studies on virtual practicum.

Author(s)	Sample	How Was the Process Handled?	Difficulties	Feelings
Almonacid-Fierro et al. [55]	34 students of physical education pedagogy	Different techniques: Sending work guides, using videoconferencing platforms, and using social networks to send video capsules.	Difficulty in communicating with students and teachers in the schools. Problems in didactic and evaluation processes. Difficulties adjusting to the context.	Overall, negative perception of the process. They did not feel supported by their guiding teachers and tutors.
Almonacid-Fierro, Vargas et al. [56]	34 students of physical education pedagogy	They delivered video capsules and applied online surveys to know the perception of their students. They used social networks to deliver information.	There was no direct interaction with school students. It was unknown how the material they delivered was worked on by the children and their families. It was not possible to address the contents of the curriculum as a whole.	Demotivation due to the scarce support received from the mentor professors.
Castillo-Retamal et al. [57]	47 graduates of physical education pedagogy in 2020	Mainly, they sent work capsules and worksheets.	51% stated that they had major difficulties in carrying out their practice in a virtual manner. 53.2% mentioned that they did not have any interaction with the students. 38.3% believed that the amount of intercommunication between teachers and students was not sufficient for the acquisition of learning.	Only 31.9% presented acceptable levels of satisfaction with their professional practicum in the virtual modality.

Table 4. Cont.

Author(s)	Sample	How Was the Process Handled?	Difficulties	Feelings
Herrera et al. [58]	42 nutrition and dietetics students	The university incorporated a telemedicine activity.	Connectivity problems made it difficult to maintain fluid communication with patients and teachers. Difficulty in using the platform. Impossibility of practicing anthropometry (measurements).	83.3% felt satisfied with the realization of the activity. 89.7% considered their performance level to be high.
Sepulveda-Escobar and Morrison [59]	27 students of English pedagogy	Different techniques: use of videoconferencing platforms, development of capsules and worksheets.	Lack of direct interaction with school students. Difficulties in preparing and adapting teaching materials since they did not know their students well. Difficulties with internet connectivity and with having an adequate technological environment and equipment to carry out the teaching work.	55% valued the experience. They considered it a good learning opportunity. Despite this, the lack of direct connection with their students caused anxiety and demotivation in some.

There were four studies contextualized in education and one in health. Depending on the discipline, the contexts were different, with students of pedagogy obliged to undertake their practicum in virtual modality due to the closure of schools. In contrast, nutrition students did so through the telemedicine system, which was born as a university response to the emergency context in which they lived.

In the case of pedagogy students, one of the main reported struggles was the limited interaction and communication with the students in the schools [55–57,59], which led to problems in the preparation and adaptation of didactic materials, in the evaluation processes [55,59], and in the fulfillment of curricular objectives [56]. Regarding their relationship with teachers, these were more diverse, as some recognized problems with them in interaction and communication [55,56], while others valued the support received from them [57,59].

In the case of nutrition students, their main difficulties were related to technology, as they acknowledged having problems with Internet connectivity and using platforms [58]. Regarding the professional practicum, they stated that the impossibility of practicing anthropometry (taking measurements such as height and weight, among others) was one of the major drawbacks of the activity [58].

When evaluating the students' emotions with the realization of their internships in virtual modality, there is consensus that it was particularly difficult for teacher trainees, as they detected negative feelings such as demotivation, anxiety, and dissatisfaction with the process [55–57,59]. On the contrary, nutrition student trainees presented positive emotions, feeling especially satisfied with the activity and valuing their performance [58].

5.3. Difficulties of Online Education According to Teachers

Different difficulties encountered by teachers during emergency remote education due to COVID-19 were identified from the analysis of the selected articles (see Table 5).

First, most stated that they did not feel prepared for online teaching [60,61] since they acknowledged not having previous experience [28] in creating and adapting didactic material, and effectively and efficiently managing the necessary platforms and technologies [62]. Undoubtedly, teachers did not have an easy time and required time to adapt to the new scenario [1,10,63].

A second challenge detected is directly related to the transportation of their workplace to their homes due to the confinement and social distancing policies that prevailed at that time. Several teachers stated that they did not have a suitable space to carry out their teaching work [1,61] nor the necessary facilities to do so, which caused physical and mental health problems in some of them, affecting their quality of life [28,62]. They also reported difficulties in the family environment because they did not know how to reconcile it with their work [28,60,62]. The virtual modality meant a heavier workload for them [1,28,60], as it required more time to restructure their classes and organize activities [28,62].

The technological environment was not exempt from any inconveniences either, with claims of problems with the use of the platforms [10,28,62], with the audio and image quality of the virtual classes [50], and with Internet connectivity [28]. Additionally, some teachers reported not having all the necessary software to teach their classes [61], and others reported feeling overwhelmed at first with the virtual environments [63].

Two studies also addressed the difficulties encountered with their organizations. In the study by Cea-Leiva et al. [62], the teachers were more critical because they stated that there were no clear guidelines from the university, which caused them uncertainty, anxiety, and increased difficulty in adapting to the new scenario. They also stated not feeling contained by their institution, as it seemed they were not concerned about them on a personal level, and on the contrary, they seemed to be constantly “watched” by a series of impositions. The study by Rivera Olguin et al. [10] criticized university actions that prioritized the administrative over the formative part, which in their opinion represented “weak effective organizational self-regulation in the face of emerging problems, and slow down the processes of improvement in the quality of training processes” (p. 90). Nonetheless, the initiatives of the faculties and undergraduate programs to confront the remote teaching scenario were valued.

There were difficulties in interacting and communicating with the students and getting them to actively participate in their classes [10,28,50,60–62]. The switched-off cameras and muted microphones often made the teachers feel as if they were talking to themselves [28,60,62], and the impossibility of seeing the students’ facial expressions did not allow them to identify whether or not they were comprehending the content [28]. They also recognized that it was more demanding to maintain students’ attention [1], and the little interaction led them to adapt and make their teaching methods more flexible [60]. Finally, several teachers expressed their concern regarding the students’ situations, where the lack of resources (e.g., access to technological equipment for class entry, good Internet connectivity, and availability of space at home for proper academic performance) and the realities they were experiencing (e.g., illness of the students themselves or of a family member and economic crises due to the pandemic) made the process even more problematic [60,62].

The analysis performed in this review made it possible to detect different difficulties related to virtual classes and practices. Understanding the experiences and positions of academics and students can allow the design of educational strategies—both transformative and sustainable—aimed at the effective integration of technologies in the learning processes and the improvement of university curricula so that they are in line with the demands of the interconnected, digital, and dynamic society in which we live.

Table 5. Description of the eight studies that address the perceptions of university professors.

Author(s)	Sample	Acceptance and Use Difficulties	Domestic Difficulties	Technological Difficulties	Organizational Difficulties	Difficulties with Students
Cea-Leiva et al. [62]	5 professors	Acknowledged needing expertise in distance teaching and learning methodologies.	Difficulties in conciliating work, family, and domestic life. Work–family separation became complex. Difficulties in organizing activities and managing time. No exclusive space or comfort to work.	Institutional platforms “crashed” frequently.	The university failed to provide clear guidelines at the beginning. It also showed no concern for them on a personal level.	Insufficient student participation in classes.
Dai et al. [63]	18 professors from different disciplines	Little confidence in the use of technology. Time was required to adapt.	Not reported.	The virtual immersion was overwhelming at first. It took some effort to become familiar with these environments.	Not reported.	It improved student interaction and learning.
Gajardo-Asbún et al. [60]	6 professors of pedagogy	Most acknowledged not having been prepared to work in virtual mode. It was difficult to adapt to the new scenario.	Long and exhausting workdays. The family environment was affected.	Not reported.	Not reported.	Lack of interaction with students. Concern about the absence of the students’ resources.
Gormaz-Lobos et al. [61]	126 faculty of engineering professors	65.9% of the teachers stated that they had a medium–low level of preparation for online teaching.	47.6% reported difficulties in having a place at home to work.	69.8% stated that they had no difficulties with the use of the platform and the software. 66.7% stated that they knew how to use ICT. 50.8% did not have all the necessary software for remote education.	Not reported.	88.9% expressed difficulties in interacting with students.
Prieto et al. [1]	15 faculty members of the School of Dentistry	Time was needed to adapt to the new teaching format.	The academic workload was much heavier. Some reported not having a specific place to work at home.	Not reported.	Not reported.	It was not easy to keep the students’ attention, although they acknowledged having had a higher participation of the students.

Table 5. Cont.

Author(s)	Sample	Acceptance and Use Difficulties	Domestic Difficulties	Technological Difficulties	Organizational Difficulties	Difficulties with Students
Rivera Olguin et al. [10]	6 professors from different disciplines who are also teaching directors	Gaps in the technological capabilities of the academic staff. The adaptation process was complex and took time. There was resistance.	Not reported.	Technical complexities of the platform used. Difficulties for greater and better use of the platform.	There was an institutionalized posture toward administrative tasks rather than a formative strategy. Nevertheless, academic management initiatives were developed to face the scenario.	The communication process and interaction with students were affected.
Rodríguez-Luengo et al. [50]	7 faculty members of the School of Dentistry	There were no problems implementing the new format because the teachers were familiar with the technology.	Not reported.	There were technical difficulties (image and audio quality).	Not reported.	Little interaction and communication among the students in the online modality. Students were more apprehensive about making mistakes.
Scarlota and Knipp [28]	17 English language professors	Little or no previous experience or training in online instruction.	Increased workload. Blurring of boundaries between personal and work time.	It took time to master the platforms. They presented some technical and connectivity problems that delayed the classes.	Not reported.	Difficulties for students to participate, comment, and interact in class. They did not know if they were understanding or not.

6. Lessons Learned and Recommendations for the Post-COVID-19 Era

The following are strategies that could be used to face the sector's present and future.

6.1. Student Engagement

The interaction and communication between students and their teachers and classmates must be improved to guarantee the behavioral commitment of students to the online modality. Creating communities should be imperative because the socioemotional ties between all members should be worked on in order to foster connection, dialogue, communication, affective commitment, knowledge exchange, and work efficiency, and create spaces that allow students to clarify doubts, enrich their learning, and achieve containment under challenging situations [48,50,64]. Furthermore, the online modality requires that students have a properly functioning technological device and good internet connectivity, enabling an uninterrupted flow of information [26] and not disrupting the quality of the process [50].

Compared to the article by Salas-Pilco et al. [27], it was found that motivation, self-regulation, and self-efficacy around using technologies have a strong relevance for an effective learning process. Teachers must find ways to improve students' motivation levels in online education as this can help achieve high levels of cognitive engagement [65], exert significant influence on the learning strategies students follow [66], and ultimately contribute to improving their learning performance [67]. While varied instructional strategies to support online learners are proposed in the literature, Chen and Jang [68] argue that first, teachers should create an open and interactive atmosphere that allows students to express their feelings, thoughts, and concerns about this modality freely, as they will be able to understand their students' needs better and adopt appropriate strategies to satisfactorily support them.

Eventually, when evaluating the affective commitment of the students, it was detected that there were good levels of acceptance and satisfaction with the online classes and the use of new technologies during the pandemic. However, some negative emotions were recognized, which has been a global trend since it has been found that the sudden implementation of virtuality increased mental health disorders, affecting the subjective well-being of students [69]. Facing this reality, it has been proposed that the satisfaction of basic psychological needs (competence, autonomy, and relationships) can reduce stress and promote adaptive coping of students in this modality [70]. Additionally, it is recognized that, in emergencies, where health, work, and other areas are compromised, teachers must reach a level of empathy with students so that they are close and serve as emotional support. Psychological interventions could also be implemented at an institutional level, providing support services and training, among other actions [69].

6.2. Practicum in Virtual Modality

The pandemic also affected how students experienced their professional practicum, requiring restructuring in response to the context. Most of the papers emphasized, in particular, the profound impact it had on teacher training, which due to the closure of educational institutions, was forced to move from a classroom and field practice to a rather virtual practice.

Several lessons can be obtained from the experiences recounted in the reviewed papers. First, relationships between schools and universities should be strengthened to provide students with more flexible teaching experiences so that in emergency contexts, they can be effectively involved in the decision-making process, thus allowing them to decrease the levels of anxiety and uncertainty they may experience [71].

Second, internship supervisors should be actively involved with students so that they not only monitor the experiences and provide them with pedagogical guidance but also provide them with emotional support and professional socialization and help them develop resilience to face the difficulties that may arise, empowering them in their teacher training and development [59].

Third, undergraduate programs should generate instances throughout the training process for students to construct—and reconstruct, if necessary—their professional identities so that they can walk their paths based on their experiences, beliefs, and practices [71].

Although the COVID-19 pandemic is now under control and universities—and educational institutions in general—have resumed operations normally, digital literacy should be remembered as a key, cross-cutting aspect that should continue to be promoted. Universities need to reassess their programs and adapt their methodologies to promote the skills, abilities, and competencies necessary to succeed in the digital era [9]; thus, if they are again faced with a difficulty of such magnitude as the COVID-19 pandemic, students will feel prepared, making the transition easier.

6.3. Difficulties of Online Education According to Teachers

During COVID-19, university teachers became key actors, as their performance became fundamental to ensure the most effortless possible transition to the virtual world. Nevertheless, they also stated that it was a challenging process, as they had to reflect on their role and restructure their professional identity, teaching agency, and in general, all their pedagogical practices. The experiences reported and the opinions shared by Chilean university professors allowed for devising some strategies universities could follow.

As a first step, the feeling of being underprepared for online education should be reduced, which is why it is suggested that institutions identify the teachers' profiles to provide them with personalized support that will allow them to effectively implement this modality [72]. Among the strategies that can be followed is to conduct pedagogical training and workshops for teachers on the use of ICT, create video capsules that instruct them on how to use institutional platforms and software for their online courses, and finally, organize opportunities for teachers with different technological profiles to cooperate, guide, and support each other [4,72,73].

Nonetheless, the achievement of adequate digital literacy among teachers should not only focus on the use of software and hardware but also involve assessment, feedback, and planning strategies that enable compliance with the curriculum, the strengthening of student empowerment, participation, and communication, and the development of digital competencies [9]. One of the hardships frequently mentioned was the increased workload, as they spent many more hours preparing for their classes. This situation may imply that teachers require training in the technical aspect of ICT incorporation and the didactic, methodological, and pedagogical areas for their correct implementation.

The preceding also reveals a problem of how initial teacher training is being conceived in Chile. Earlier research has found that pedagogy students in the country still need to acquire the digital competencies necessary to effectively use technologies in their future teaching performance [74]. In this context, the importance of implementing policies at the national level that regulate the certification requirements for training centers concerning graduating teachers is recognized [75]. Furthermore, university leaders and the academic body must carefully and collaboratively plan the curriculum to have a shared vision of incorporating technologies throughout the training process, not just as a module or introductory course [76].

Another problem teachers stated is the need for more interaction with students in online classes. The following are proposed considering that achieving higher interactivity can generally improve the success rate of students in this modality [77]: sharing case studies and asking students questions to improve their participation and concentration; organizing small group activities for students to share with their peers; improving the quality of videos; making lectures shorter, focused, and interactive; preparing discussions, practical assignments, and materials that encourage creativity and critical thinking; sending the material in advance so that students know what they will see in class and can arrive more prepared; finally, exploring students' perceptions of the lessons—through surveys or direct questions—to improve the dynamics and make them more attractive to the students [1,77,78].

Lastly, universities should take a more active role and prepare plans and strategies to respond to emergencies. Universities should facilitate the development of institutional capacities to support online learning [72], investing, if necessary, in their servers, in the formation of a competent technical support team, in the acquisition of technological equipment, and in the creation of strategic alliances that can ensure their teachers and students the necessary resources to perform effectively [77]. Likewise, in emergency contexts, they should maintain sight of the human side of the trainers, as in situations of high stress and uncertainty, emotional support and containment should be provided. Initiatives could include the creation of instances for developing resilience and self-care and organizing peer support groups [79].

7. Conclusions

Our review identified the main characteristics of the tripartite dimensions of engagement of Chilean university students, finding that although attitudes toward online learning were generally positive, there is still a way to go to ensure complete satisfaction with this modality. The same occurred with practicum, which was especially difficult for teacher candidates who perceived the discipline as an essentially practical area in which contact with students is fundamental. Finally, the teachers also recognized a series of obstacles that need to be addressed if virtuality is to be adopted as a permanent teaching method.

Higher education systems around the world should learn lessons from the COVID-19 pandemic. It is not possible to make the mistake of continuing along the same path as before because the emergency is now under control, and educational institutions have returned to traditional face-to-face teaching and are not benefiting from the practical knowledge acquired.

Considering the above, it is suggested that higher education institutions should:

1. Integrate digital technologies and take advantage of the opportunities they offer to improve the system by increasing the flexibility of the teaching process,
2. Formulate strategies and action plans for emergencies that will ensure survival over time and effective fulfillment of academic tasks,
3. Design, plan, and develop online education to maximize its strengths and benefits, as this is viewed as an attractive alternative to appeal to new generations of students who are more “technologized” and who seek to learn in a more personalized, dynamic, and flexible way.

Although the last years were not easy for Chilean universities, the high level of resilience and commitment displayed was evident, thus allowing them to overcome the difficult times and continue with the training processes. These experiences should be the basis for improving practices, which is why this paper proposed several recommendations to strengthen online teaching and, in general, to incorporate new technologies in education.

However, this work is not free of limitations, considering that only articles from three databases were included and that it only focused on one country in Latin America. Hopefully, it will encourage the academic and scientific community to do more research on the impacts of COVID-19 at all levels (not only in higher education) to identify the consequences and lessons learned for education systems at the national, regional, and global levels. Additionally, future empirical research can focus on how to guarantee the commitment of teachers in virtual teaching environments, how to foster critical thinking in students through the use of new technologies, and on diagnosing educational institutions to check whether or not they are prepared (in terms of infrastructure, technological support, technical knowledge, etc.) to offer programs, courses, and diplomas in e-learning or b-learning (blended learning) on a permanent basis.

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References

- Prieto, D.; Tricio, J.; Cáceres, F.; Param, F.; Meléndez, C.; Vásquez, P.; Prada, P. Academics' and students' experiences in a Chilean dental school during the COVID-19 pandemic: A qualitative study. *Eur. J. Dent. Educ.* **2021**, *25*, 689–697. [CrossRef] [PubMed]
- Montero, R.; Gemp, R.; Vargas, M. Chilean university students' satisfaction with online learning during COVID-19 pandemic: Demonstrating the two-layer methodology. *Front. Psychol.* **2022**, *13*, 887891. [CrossRef] [PubMed]
- Gallardo Ramos, V.; Lazcano Rojas, C. La percepción estudiantil del bachillerato en ciencias frente a clases virtuales en pandemia: Una mirada al proceso de enseñanza virtual en Chile. *Hum. Rev.* **2022**, *11*, 1–12. [CrossRef]
- Bruggeman, B.; Garone, A.; Struyven, K.; Pynoo, B.; Tondeur, J. Exploring university teachers' online education during COVID-19: Tensions between enthusiasm and stress. *Comput. Educ. Open* **2022**, *3*, 100095. [CrossRef]
- Noorbehbahani, F.; Mohammadi, A.; Aminazadeh, M. A systematic review of research on cheating in online exams from 2010 to 2021. *Educ. Inf. Technol.* **2022**, *27*, 8413–8460. [CrossRef]
- Pillay, P.; Balbachevsky, E.; Pinheiro, R.; Yonezawa, A. COVID-19 and the institutional fabric of higher education. In *The Impact of COVID-19 on the Institutional Fabric of Higher Education*; Pinheiro, R., Balbachevsky, E., Pillay, P., Yonezawa, A., Eds.; Palgrave Macmillan: Cham, Switzerland, 2023; pp. 413–422.
- Aydin, M. Does the digital divide matter? Factors and conditions that promote ICT literacy. *Telemat. Inform.* **2021**, *58*, 101536. [CrossRef]
- Li, M.; Yu, Z. Teachers' satisfaction, role, and digital literacy during the COVID-19 pandemic. *Sustainability* **2022**, *14*, 1121. [CrossRef]
- Tejedor, S.; Cervi, L.; Pérez-Escoda, A.; Jumbo, F.T. Digital literacy and higher education during COVID-19 lockdown: Spain, Italy, and Ecuador. *Publications* **2020**, *8*, 48. [CrossRef]
- Rivera Olguin, P.; Sánchez Espinoza, E.; Cortés Díaz, B. La disrupción de lo presencial a lo virtual. Percepciones de los directores de docencia sobre el uso de plataformas digitales en contexto de pandemia en una universidad del norte de Chile. *Pág. Educ.* **2021**, *14*, 77–95. [CrossRef]
- Claro, M.; Jara, I. The end of Enlaces: 25 years of an ICT education policy in Chile. *Digit. Educ. Rev.* **2020**, 96–108. [CrossRef]
- SIES. Informe 2023. *Matrícula en Educación Superior. Junio 2023*. Available online: https://www.mifuturo.cl/wp-content/uploads/2023/07/Matricula_en_Educacion_Superior_2023_SIES.pdf (accessed on 2 August 2023).
- Perna, L.W.; Ruby, A.; Boruch, R.F.; Wang, N.; Scull, J.; Ahmad, S.; Evans, C. Moving through MOOCs: Understanding the progression of users in massive open online courses. *Educ. Res.* **2014**, *43*, 421–432. [CrossRef]
- Pedraja-Rejas, L.; Rodríguez-Ponce, E.; Laroze, D.; Muñoz-Fritis, C. Mapping global citizenship: A Bibliometric analysis of the field of education for sustainable development. *Front. Educ.* **2023**, *8*, 1139198. [CrossRef]
- Pedraja-Rejas, L.; Rodríguez-Ponce, E.; Muñoz-Fritis, C.; Laroze, D. Sustainable Development Goals and Education: A Bibliometric Review—The Case of Latin America. *Sustainability* **2023**, *15*, 9833. [CrossRef]
- McCowan, T. *Higher Education for and Beyond the Sustainable Development Goals*; Palgrave Macmillan: Cham, Switzerland, 2019; pp. 149–173.
- UNESCO; CEPAL; UNICEF. La Encrucijada de la Educación en América Latina y el Caribe. In *Informe Regional de Monitoreo ODS4-Educación 2030*; UNESCO: Paris, France, 2022; Available online: <https://unesdoc.unesco.org/ark:/48223/pf0000382636> (accessed on 2 August 2023).
- Buil-Fabregá, M.; Martínez Casanovas, M.; Ruiz-Munzón, N.; Filho, W.L. Flipped classroom as an active learning methodology in sustainable development curricula. *Sustainability* **2019**, *11*, 4577. [CrossRef]
- Flores, V. Aprendizaje significativo con estrategia de enseñanza activa para un curso de proyecto software. Una experiencia en el norte de Chile. *Ingeniare* **2021**, *29*, 120–128. [CrossRef]

20. Mystakidis, S. Deep meaningful learning. *Encyclopedia* **2021**, *1*, 988–997. [\[CrossRef\]](#)
21. Guzmán-Valenzuela, C.; Chiappa, R.; Rojas-Murphy Tagle, A.; Ismail, N.; Pedraja-Rejas, L. Investigating critical thinking in higher education in Latin America: Acknowledging an epistemic disjuncture. *Crit. Stud. Teach. Learn.* **2023**, *11*, 71–99. [\[CrossRef\]](#)
22. Rossi, I.V.; de Lima, J.D.; Sabatke, B.; Nunes, M.A.F.; Ramirez, G.E.; Ramirez, M.I. Active learning tools improve the learning outcomes, scientific attitude, and critical thinking in higher education: Experiences in an online course during the COVID-19 pandemic. *Biochem. Mol. Biol. Educ.* **2021**, *49*, 888–903. [\[CrossRef\]](#)
23. Sivan, A.; Leung, R.W.; Woon, C.C.; Kember, D. An implementation of active learning and its effect on the quality of student learning. *Innov. Educ. Train. Int.* **2000**, *37*, 381–389. [\[CrossRef\]](#)
24. Chankseliani, M.; McCowan, T. Higher education and the Sustainable Development Goals. *High. Educ.* **2021**, *81*, 1–8. [\[CrossRef\]](#)
25. Ghanizadeh, A. The interplay between reflective thinking, critical thinking, self-monitoring, and academic achievement in higher education. *High. Educ.* **2017**, *74*, 101–114. [\[CrossRef\]](#)
26. Pandit, D.; Agrawal, S. Exploring challenges of online education in COVID times. *FIIB Bus. Rev.* **2022**, *11*, 263–270. [\[CrossRef\]](#)
27. Salas-Pilco, S.Z.; Yang, Y.; Zhang, Z. Student engagement in online learning in Latin American higher education during the COVID-19 pandemic: A systematic review. *Br. J. Educ. Technol.* **2022**, *53*, 593–619. [\[CrossRef\]](#) [\[PubMed\]](#)
28. Scarlota, N.; Knipp, R. Experiencing emergency remote teaching as an EFL educator in Chile at the onset of the COVID-19 pandemic. *Issues Educ. Res.* **2022**, *32*, 1605–1622.
29. Panigrahi, R.; Srivastava, P.R.; Sharma, D. Online learning: Adoption, continuance, and learning outcome—A review of literature. *Int. J. Inf. Manag.* **2018**, *43*, 1–14. [\[CrossRef\]](#)
30. Robinson, C.C.; Hullinger, H. New benchmarks in higher education: Student engagement in online learning. *J. Educ. Bus.* **2008**, *84*, 101–109. [\[CrossRef\]](#)
31. Armijos, J.C.; Egaña, S.; Ziller, K.; Armijos, J.P. Impacto de las clases virtuales en estudiantes universitarios durante el COVID-19. *Rev. Andin. Educ.* **2023**, *6*, 000618. [\[CrossRef\]](#)
32. Dumford, A.D.; Miller, A.L. Online learning in higher education: Exploring advantages and disadvantages for engagement. *J. Comput. High. Educ.* **2018**, *30*, 452–465. [\[CrossRef\]](#)
33. Morfaki, C.; Skotis, A. Academic online learning experience during COVID-19—a systematic literature review based on personality traits. *High. Educ. Ski. Work.-Based Learn.* **2023**, *13*, 697–719. [\[CrossRef\]](#)
34. Fredricks, J.A.; Blumenfeld, P.C.; Paris, A.H. School engagement: Potential of the concept, state of the evidence. *Rev. Educ. Res.* **2004**, *74*, 59–109. [\[CrossRef\]](#)
35. Chiu, T.K. Digital support for student engagement in blended learning based on self-determination theory. *Comput. Hum. Behav.* **2021**, *124*, 106909. [\[CrossRef\]](#)
36. Groccia, J.E. What is student engagement? *New Dir. Teach. Learn.* **2018**, *2018*, 11–20. [\[CrossRef\]](#)
37. Ferrari, R. Writing narrative style literature reviews. *Med. Writ.* **2015**, *24*, 230–235. [\[CrossRef\]](#)
38. Page, M.J.; McKenzie, J.E.; Bossuyt, P.M.; Boutron, I.; Hoffmann, T.C.; Mulrow, C.D.; Shamseer, L.; Tetzlaff, J.M.; Akl, E.A.; Brennan, S.E.; et al. The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *BMJ* **2021**, *372*, 71. [\[CrossRef\]](#)
39. Xiao, Y.; Watson, M. Guidance on conducting a systematic literature review. *J. Plan. Educ. Res.* **2019**, *39*, 93–112. [\[CrossRef\]](#)
40. Prancutè, R. Web of Science (WoS) and Scopus: The titans of bibliographic information in today's academic world. *Publications* **2021**, *9*, 12. [\[CrossRef\]](#)
41. Kyngäs, H.; Mikkonen, K.; Kääriäinen, M. *The Application of Content Analysis in Nursing Science Research*; Springer: Cham, Switzerland, 2020; ISBN 978-3-030-30199-6.
42. Aravena Reyes, A.; Baeza, M.A. Nuevas subjetividades e imaginarios sociales en estudiantes de primer año de educación terciaria en Concepción, Chile: Experiencias de estudios remotos en contexto de pandemia y post estallido social. *Foro Educ.* **2021**, *37*, 101–131.
43. Badilla-Quintana, M.G.; Sandoval-Henríquez, F.J. Valoración del desempeño docente de estudiantes en formación inicial tras participar en simulaciones de prácticas pedagógicas en un mundo virtual. *Campus Virtuales* **2023**, *12*, 79–91. [\[CrossRef\]](#)
44. Flores Ferro, E.; Maurera Cid, F.; Hadweh Briceño, M.; Gutiérrez Duarte, S.A.; Silva-Salse, Á.; Peña-Troncoso, S.; Castillo-Retamal, F.; González Flores, P.; Pauvif Cárcamo, F.; Bahamondes Acevedo, V.; et al. Nivel de satisfacción de las clases online por parte de los estudiantes de Educación Física de Chile en tiempos de pandemia. *Retos* **2021**, *41*, 123–130. [\[CrossRef\]](#)
45. Gormaz-Lobos, D.; Galarce-Miranda, C.; Kersten, S.; Hilgarth, A.; Hortsch, H. Validation of an instrument to measure students' perceptions of online learning. *Int. J. Emerg. Technol. Learn.* **2022**, *17*, 226–242. [\[CrossRef\]](#)
46. Laurens-Arredondo, L. Mobile augmented reality adapted to the ARCS model of motivation: A case study during the COVID-19 pandemic. *Educ. Inf. Technol.* **2022**, *27*, 7927–7946. [\[CrossRef\]](#)
47. Lobos, K.; Bustos, C.; Cobo-Rendón, R.C.; Cisternas, N.V. Características psicométricas de un cuestionario de expectativas hacia la educación virtual en estudiantes universitarios durante la pandemia COVID-19. *Form. Univ.* **2022**, *15*, 3–18. [\[CrossRef\]](#)
48. Lobos, K.; Cobo-Rendón, R.; Cisternas San Martín, N.; Aslan-Parra, J.; López-Angulo, Y. Propiedades psicométricas de la escala experiencias de estudiantes universitarios en la educación en línea. *Rev. Iberoam. Diagn. Ev.* **2022**, *3*, 125–139. [\[CrossRef\]](#)
49. Pérez-Villalobos, C.; Ventura-Ventura, J.; Spormann-Romeri, C.; Melipillán, R.; Jara-Reyes, C.; Paredes-Villaruel, X.; Rojas-Pino, M.; Baquedano-Rodríguez, M.; Castillo-Rabanal, I.; Parra-Ponce, P.; et al. Satisfaction with remote teaching during the first semester of the COVID-19 crisis: Psychometric properties of a scale for health students. *PLoS ONE* **2021**, *16*, e0250739. [\[CrossRef\]](#)

50. Rodríguez-Luengo, M.; Goset-Poblete, J.; Pérez-Cárdenas, N.; Niklander-Ebensperger, S.; Luengo-Mai, D. Percepción de docentes y alumnos sobre la experiencia en el uso del modelo Hyflex en anatomía. *Int. J. Morphol.* **2022**, *40*, 1253–1260. [\[CrossRef\]](#)
51. Romero Alonso, R.E.; Tejada Navarro, C.A.; Núñez, O. Actitudes hacia las TIC y adaptación al aprendizaje virtual en contexto COVID-19, alumnos en Chile que ingresan a la educación superior. *Perspect. Educ.* **2021**, *60*, 99–120. [\[CrossRef\]](#)
52. Sánchez-Ramírez, C.; Alarcón, E.; Bravo, L.; Paredes, P.; Nova, P.; Iturra-González, A.; Valdés, I.; Ortiz, A. How were modified the human anatomy study habits during and after confinement by the covid-19 pandemic? *Int. J. Morphol.* **2022**, *40*, 1484–1489. [\[CrossRef\]](#)
53. Vidal, A.; Pavicic, F.; Ehrenfeld, P.; Figueroa, C.D.; Matus, C.E. Recursos educativos digitales como herramientas de apoyo para la enseñanza de patología general en cursos de pregrado del área de la salud. *Int. J. Morphol.* **2022**, *40*, 1656–1661. [\[CrossRef\]](#)
54. Zamarreño, R.; Loyola, N. Eficacia de los OVA y valoración desde la actitud de competencias de Química, en período de pandemia. *Pág. Educ.* **2022**, *15*, 68–97. [\[CrossRef\]](#)
55. Almonacid-Fierro, A.; De Carvalho, R.S.; Castillo-Retamal, F. The practicum in times of COVID-19: Knowledge developed by future physical education teachers in virtual modality. *Int. J. Learn. Teach. Educ. Res.* **2021**, *20*, 68–83. [\[CrossRef\]](#)
56. Almonacid-Fierro, A.; Vargas Vitoria, R.; Mondaca-Urrutia, J.; Sepúlveda Vallejos, S. Prácticas profesionales en tiempos de pandemia COVID-19: Desafíos para la formación inicial en profesorado de Educación Física. *Retos* **2021**, *42*, 162–171. [\[CrossRef\]](#)
57. Castillo-Retamal, F.; Silva-Reyes, L.; Muñoz-González, M.; López-Toro, L.; Plaza-Cofré, P.; Arredondo-Muñoz, F.; Faúndez-Casanova, C. Prácticum virtual en Educación Física: Entre pandemia e incertidumbre. *Retos* **2021**, *42*, 798–804. [\[CrossRef\]](#)
58. Herrera, P.; Molina, P.; Zamudio, C.; Chavarría, C.; Daniels, B.; Cáceres, P.; Basfi-fer, K.; Riveros, C.; Bustamante, E. Online nutritional counseling in the Nutrition and Dietetics career at the University of Chile: A teaching-learning resource in professional practices. *Rev. Esp. Nutr. Hum. Diet.* **2023**, *27*, 97–105. [\[CrossRef\]](#)
59. Sepulveda-Escobar, P.; Morrison, A. Online teaching placement during the COVID-19 pandemic in Chile: Challenges and opportunities. *Eur. J. Teach. Educ.* **2020**, *43*, 587–607. [\[CrossRef\]](#)
60. Gajardo-Asbún, K.; Paz-Maldonado, E.; Salas, G. Concepciones de los formadores de profesores a partir de la COVID-19. Un estudio comparativo en tres regiones de Chile. *Rev. Esp. Educ. Comp.* **2021**, 69–89. [\[CrossRef\]](#)
61. Gormaz-Lobos, D.; Galarce-Miranda, C.; Kersten, S.; Hortsch, H. Perceptions of teaching staff about the online learning in engineering during SARS CoV pandemic. *Int. J. Eng. Pedagog.* **2022**, *12*, 25–37. [\[CrossRef\]](#)
62. Cea-Leiva, F.; Pascual Hoyuelos, A.G.; Sanhueza-Jara, S.; Cristi-González, R. Educación a distancia en emergencia: Experiencias de docentes universitarios del Sur de Chile en tiempos de COVID-19. *Perspect. Educ.* **2022**, *61*, 173–197. [\[CrossRef\]](#)
63. Dai, K.; Garcia, J.; Olave-Encina, K. In-between worlds: Chilean university lecturers' experiences of teaching transition between face-to-face and virtual reality contexts during the COVID-19 pandemic. *Educ. Tech. Res. Dev.* **2023**, *71*, 1851–1867. [\[CrossRef\]](#)
64. Stoian, C.E.; Fărcașiu, M.A.; Dragomir, G.M.; Gherheș, V. Transition from online to face-to-face education after COVID-19: The benefits of online education from students' perspective. *Sustainability* **2022**, *14*, 12812. [\[CrossRef\]](#)
65. Binali, T.; Tsai, C.C.; Chang, H.Y. University students' profiles of online learning and their relation to online metacognitive regulation and internet-specific epistemic justification. *Comput. Educ.* **2021**, *175*, 104315. [\[CrossRef\]](#)
66. Yu, Z. Sustaining student roles, digital literacy, learning achievements, and motivation in online learning environments during the COVID-19 pandemic. *Sustainability* **2022**, *14*, 4388. [\[CrossRef\]](#)
67. Tan, C. The impact of COVID-19 on student motivation, community of inquiry and learning performance. *Asian Educ. Dev. Stud.* **2020**, *10*, 308–321. [\[CrossRef\]](#)
68. Chen, K.C.; Jang, S.J. Motivation in online learning: Testing a model of self-determination theory. *Comput. Hum. Behav.* **2010**, *26*, 741–752. [\[CrossRef\]](#)
69. Huang, L.; Zhang, T. Perceived social support, psychological capital, and subjective well-being among college students in the context of online learning during the COVID-19 pandemic. *Asia-Pac. Educ. Res.* **2022**, *31*, 563–574. [\[CrossRef\]](#)
70. Holzer, J.; Lüftenegger, M.; Korlat, S.; Pelikan, E.; Salmela-Aro, K.; Spiel, C.; Schober, B. Higher education in times of COVID-19: University students' basic need satisfaction, self-regulated learning, and well-being. *Aera Open* **2021**, *7*, 1–13. [\[CrossRef\]](#)
71. Choi, L.J.; Park, M.Y. Teaching practicum during COVID-19: Pre-Service English language teachers' professional identities and motivation. *SAGE Open* **2022**, *12*, 1–9. [\[CrossRef\]](#)
72. Scherer, R.; Howard, S.K.; Tondeur, J.; Siddiq, F. Profiling teachers' readiness for online teaching and learning in higher education: Who's ready? *Comput. Hum. Behav.* **2021**, *118*, 106675. [\[CrossRef\]](#)
73. Na, S.; Jung, H. Exploring university instructors' challenges in online teaching and design opportunities during the COVID-19 pandemic: A systematic review. *Int. J. Learn. Teach. Educ. Res.* **2021**, *20*, 308–327. [\[CrossRef\]](#)
74. Silva, J.; Morales, M.J.; Lázaro, J.L.; Gisbert, M.; Miranda, P.; Rivoir, A.; Onetto, A. La competencia digital docente en formación inicial: Estudio a partir de los casos de Chile y Uruguay. *Educ. Policy Anal. Arch.* **2019**, *27*, 93. [\[CrossRef\]](#)
75. Tapia Silva, H.G.; Campaña Vilo, K.A.; Castillo Robledo, R.F. Análisis comparativo de las asignaturas TIC en la formación inicial de profesores en Chile entre 2012 y 2018. *Perspect. Educ.* **2020**, *59*, 4–29. [\[CrossRef\]](#)
76. Borthwick, A.C.; Hansen, R. Digital literacy in teacher education: Are teacher educators competent? *J. Digit. Learn. Teach. Educ.* **2017**, *33*, 46–48. [\[CrossRef\]](#)
77. Mahmood, S. Instructional strategies for online teaching in COVID-19 pandemic. *Hum. Behav. Emerg. Technol.* **2021**, *3*, 199–203. [\[CrossRef\]](#)

78. Shearer, R.L.; Aldemir, T.; Hitchcock, J.; Resig, J.; Driver, J.; Kohler, M. What students want: A vision of a future online learning experience grounded in distance education theory. *Am. J. Distance Educ.* **2020**, *34*, 36–52. [[CrossRef](#)]
79. Miguel, C.; Castro, L.; Marques dos Santos, J.P.; Serrão, C.; Duarte, I. Impact of COVID-19 on medicine lecturers' mental health and emergency remote teaching challenges. *Int. J. Environ. Res. Public Health* **2021**, *18*, 6792. [[CrossRef](#)] [[PubMed](#)]

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