Article

Workloads and Emotional Factors Derived from the Transition towards Online and/or Hybrid Teaching among Postgraduate Professors: Review of the Lessons Learned

Isabel del Arco Bravo [1] , **Òscar Flores-Alarcia** [1,*] , **Janeth González-Rubio** [2] , **Daniel Serey Araneda** [3] **and Carlos Lagos Olivos** [4]

1 Department of Pedagogy, Faculty of Education, Psychology and Social Work, University of Lleida, 25001 Lleida, Spain
2 Department of Administration and Marketing, Faculty of Economic and Administrative Sciences, University of Tolima, Ibagué-Tolima 730006299, Colombia
3 Education Faculty, Autonomous University of Chile, Santiago 7500912, Chile
4 Facultat d'Educació i Humanitats, University of Tarapacá, Arica 1000000, Chile
* Correspondence: oscar.flores@udl.cat; Tel.: +34-973-70-33-79

Abstract: The objective of the present study was to discover which tasks resulted in a higher workload, leading to a higher anxiety of postgraduate professors at different Ibero-American universities, when dealing with the transition from face-to-face teaching to a virtual one. A questionnaire was constructed that was completed by 125 professors once validated. The results showed that with respect to tasks that required a higher workload, the professors had to re-think methodological strategies and activities, correct the student's work, provide tutoring, and search for materials. As for the degree of anxiety, it was higher, given the increased number of hours in front of the computer, the lack of immediate feedback from the students, the feeling of not reaching all the students, having to look for activities to invigorate the online classes, and the need to prepare more materials and the assessment tasks. The results were the same irrespective of the university, thereby enabling us to conclude that this phenomenon was globalized, and the workload and anxiety were replicated in different contexts. Therefore, it is necessary to implement formative proposals that help manage online or hybrid teaching, beyond the mere transfer of the face-to-face teaching models to virtual ones.

1. Introduction

The extremely fast propagation of COVID-19 created a health crisis worldwide, with almost 100% of the world's population under mandated quarantine. The World Health Organization (WHO) indicated that COVID-19 propagated from person to person, declaring it a pandemic [1]. This unprecedented situation forced European countries, and posteriorly Latin American ones as well, to adopt emergency health measures—resulting in confinement and social isolation—to avoid greater infection and increased mortality.

The complete closure of schools and universities led to the shift of teaching activities to digital education platforms, and both educators and education authorities had to rapidly adapt to provide a response to the new education needs [2,3].

Online teaching brought with it curricular transformation, providing and establishing new ways to interact in the process of teaching, but at the same time, many questions arose about the effectiveness of learning using this modality and at all education stages and levels [4]. This mode of teaching created different divides, mainly due to the level of access to digital technologies [5].

The transition from face-to-face teaching to online teaching, the prolonged use of this modality, and the return to the new modality marked by hybrid formats, prompted us to

ask: How was this transition perceived by university professors, especially postgraduate professors? Did the greater independence of the students, result in different workloads for professors? Additionally, at the emotional level, how did this transition to the new teaching model, online or hybrid, affect professors?

2. Online Teaching during Emergencies

It seems evident that one of the impacts of the pandemic on the education system was the push for students to increase their digital literacy [6]. On the other hand, it promoted the application of pedagogy that is responsible for stimulating personal autonomy in the development of cognitive and curricular competences [7–9].

In addition, the situation of confinement, and the mandatory nature of online teaching, brought with it considerable levels of academic desertion, making higher education institutions propose and demand for themselves greater commitments to guarantee effective education for students [10], integrating both their capacities and needs [11]. It is evident that the impact of all the actions performed by higher education institutions, together with the level of satisfaction of students with respect to the academic processes, will lead to a transformation in education organizations [12].

This new environment, forcibly based on online teaching, required the transformation of the teacher's role [13], shifting to a model based on awakening the interest of the students [14]. Therefore, it is necessary to consider factors that affect the quality of university teaching and the development of the socio-emotional component [15–18].

Different studies [2,19] affirm that professors were not ready to immediately face this new situation, not only because the university did not have the necessary resources, but also because most of the professors did not have an adequate level of digital competence and didactic training. Thus, most still followed traditional methodological formulas, undertaking the transition of face-to-face teaching to online teaching by replicating the face-to-face methodology, and exclusively using the videoconference tool [20].

3. Consequences of the Transition of Face-to-Face Teaching to Online Teaching

Information and Communication Technologies have been recently developed in all human dimensions, as well as the educational one, allowing for the "innovation in models, caring for the democratization of teaching and training that guarantee that students receive the same quality of instruction no matter what the region" [21] (p. 2).

During the confinement, the wager placed on online teaching was favorable for some students, while for others, the poorest and more vulnerable, it led to the irreplaceable loss of learning, resulting in the abandonment or difficulties in re-starting their education [22].

Delving into the factors that affected students and professors in their response to the sudden change from face-to-face teaching to online teaching, authors such as those of [23], in a study developed between Spanish universities, affirm that although the students had a more than acceptable level of the use of technological tools and skills to manage them, a lack of independence and capacity for self-regulation and self-reflection was detected with respect to dealing with certain tasks, with students also showing a considerable level of dependence on their professors, especially among the students in their first years of a degree. This greater dependence was not evidenced among postgraduate and doctoral students.

With respect to the professors, the same authors concluded that the level of competence in the use of technological tools could be improved, especially with respect to their management, but stressed their didactic application and the implementation of communication and interaction systems with students to compensate for the lack of face-to-face interaction in online teaching.

To these pedagogic consequences, we can add the emotional consequences and the psychological effects on students, workers, and teaching staff [24,25] created by the forced isolation. The effect on mental health is evidence that many students analyze, together with how it is negatively affecting education and their formative development [26].

From the above, we must extract the lessons created by the unprecedented worldwide situation that has marked, without a doubt, the manner in which present and future teaching is and will be conducted. What is clear is that we cannot intend that online teaching exactly replicate face-to-face teaching in the classroom. We must tend to possible maladjustments that could be created and take advantage of the opportunity to move towards new, high-quality university teaching models that are accessible to most.

4. Materials and Methods

4.1. Objectives

To answer the research questions posed, the following study objectives are defined:

- Distinguish the tasks that resulted in a higher workload for postgraduate professors who transitioned from face-to-face teaching to virtual or hybrid teaching;
- Identify the tasks that provoked a higher anxiety in postgraduate professors when transitioning from face-to-face teaching to virtual or hybrid teaching.

In summary, we intend to identify the factors in postgraduate university teaching that could have hampered the transition towards online or hybrid teaching, in order to create proposals for improvement that allow society to move towards 21st century teaching.

4.2. Research Methodology

The study was conducted within the framework of different postgraduate degrees. The intention was to discover the obstacles faced by the professors and to create proposals for improvement. We must not forget that it is precisely in this education stage in which we find students who could be more independent, older, and with greater academic experience, at the same time that they are demanding and more prone to abandonment due to low-quality teaching, thus reducing the indices of enrolment in master's degrees.

First, we identified the master's in education programs that were taught among the participating universities to define the study population

An online questionnaire was sent to collect data, including an informed consent form from the participants, while observing the anonymity and protection of data for the treatment of the information collected.

4.3. Measurement Instrument

- An ad hoc questionnaire was created, comprising a total of 22 questions, of which:
- A total of 6 were multiple answer questions, and generated between them were a total of 44 dichotomous variables;
- A total of 4 had alternative responses; therefore, they comprised 4 categorical variables;
- There was 1 that had 14 proposals that were to evaluated with a Likert scale (14 quantitative variables);
- A total of 11 were free-response and open-ended, so that they did not generate variables that could be statistically analyzed (except with a qualitative methodology).
- These 22 questions were organized into different sections:
- Identification data;
- Teaching strategies utilized;
- Assessment;
- Teaching—workload and emotional factors.

This questionnaire was subjected to content validity through 10 judges, who evaluated univocity, pertinence, and degree of importance of each item.

Additionally, for the 11 closed-ended questions that generated a total of 62 variables, the degree of reliability of the participants was calculated. The classic Cronbach's Alpha reliability coefficient was calculated, obtaining a value of 0.67 (with a 95% CI: 0.55–0.77), which can be considered acceptable and good.

This article analyzes the answers found in the last section, "Teaching: workload and emotional factors". This section is composed of 2 items. The first is a multiple-response

question that asked the professor to mark the option that resulted in a greater workload among the following options:

- Rethink new methodological strategies;
- Search for new materials;
- Re-plan the activities;
- Rethink the assessment;
- Correct the student's classwork;
- Tend to the student's questions;
- Tutor students;
- Build the course using the university platform.

The degree of anxiety was evaluated with a set of 15 items that were scored with a Likert-type response scale of 5 options (from 0 = nothing/null to 4 = very much/always) (Table 1).

Table 1. List of items that assess the state of anxiety of the professors.

Statements of the Items That Assess the Degree of Anxiety	Variable
1. Review of the class scheduling	Scheduling
2. The theoretical class sessions	Theoretical classes
3. Conducting virtual practical sessions	Practice sessions
4. Communication with the students	Communication
5. Development of assessment tasks	Assessment
6. Tutorships with students	Tutoring
7. Preparing more material	Material
8. Providing feedback to the students	Provide feedback
9. Mastery of the new technologies for teaching online classes	New technologies
10. Tending to the socio-emotional needs of the students	S-E needs
11. Increase in the number of hours in front of the computer to tend to the student's demands	Time spent online
12. Search for activities that will help invigorate the online classes	Invigoration
13. Not having immediate feedback from the students when I'm explaining in class, as most did not have their cameras on	Receive feedback
14. The feeling that I did not reach all my students, and that only a few followed me, who participated in the online sessions	Participation
15. Others	Other

4.4. Sample and Data Collection

The study sample comprised professors who taught post-graduate and/or Masters in education courses at the participating universities (Table 2).

Table 2. Number of degrees and professors involved.

University	Master's Education	Total Professors Involved	Sample
University of Lleida (Spain)	9	93	75
University of Tolima (Colombia)	4	71	28
University of Tarapacá (Chile)	1	14	12
Andean University Simón Bolívar (Ecuador)	1	10	10

A total of 125 participants were enlisted, of which 60% (75) were from the University of Lleida. The rest came from 3 Latin American universities: University of Tolima (22.4%), University of Tarapacá (9.6%), and Andean University Simón Bolívar (8%).

According to sex, there were more women than men: 60% vs. 40%. Women were the majority in all the universities (65.3%, 60% and 60.7%), except for the University of Tarapacá, where we found more male participants (75%).

According to age, almost half of the sample participants were older than 50 years old (48%; 60 cases). After them, the most frequent age interval was 41–50 years old (32%). In addition, 20% were younger than 40, and almost 4% were not even 31 years old. The groups of those older than 50 were the most common in all the universities (48%, 50%, and 60.7%), except for the Andean University Simón Bolívar, where almost all the participants were found in the 41–50-year-old (50%) and 31–40-year-old (40%) ranges.

Lastly, 52% of the participating professors had a full-time contract (65 cases), and 48% had a part-time contract (60 cases). A full-time contract was more frequent at the University of Lleida (57.3%), while part-time contracts were more common in the three Latin American universities (58.3%, 60%, and 53.6%).

4.5. Statistical Analysis

The statistical analysis was performed through the computer program IBM-SPSS Statistics version 25 (reference: IBM Corp. Release 2017. IBM SPSS Statistics v 25.0 for Windows; Armonk, NY, USA).

The statistics techniques and tests utilized were as follows:

1. Description of qualitative variables with frequency tables and percentages. To compare two of these variables, contingency tables were utilized.
2. The quantitative variables were analyzed to verify their fit, or lack thereof, to a Gaussian curve. For this, the following methods were utilized: (a) normal Q–Q plot, (b) asymmetry and kurtosis indices, and (c) Kolmogorov–Smirnov goodness-of-fit test, where only a severe skewness ($p < 0.01$) will indicate a non-normal variable distribution. At the same, a box plot was used to determine the existence or lack thereof of an atypical value given its position relative to the rest of the sample (extreme outlier).
3. The quantitative variables were described through the normal tools of (a) centrality—mean and median; (b) variability—observed range, standard deviation, and interquartile range.
4. The reliability of the psychological questionnaires was evaluated through Cronbach's Alpha internal consistency coefficient. A value higher than 0.60 indicates an acceptable reliability; if it is higher than 0.80, it is good, and >0.90 indicates a very good reliability.
5. For the comparison of the significance of the means from the sample of subjects (repeated measures/related measures), the parametric tests repeated measures (RM) Student's and single-factor RM ANOVA were used when the variables were normally distributed, and the alternative Wilcoxon's and Friedman's tests when they were not distributed normally.
6. For the comparisons between the means from two different subjects (independent from each other), Student's t test and a one-way ANOVA were used when the variables were normal, and their corresponding non-parametric tests (Mann–Whitney and Kruskal–Wallis) when their distribution was not normal.
7. A Chi-square test was performed for the cross between the categorical values. Although it is a test to determine the existence/absence of a relationship between these types of variables, its presence can lead to the inference of the existence of significant differences in the response variable among the categories of the explanatory factor, utilizing the values of the corrected standardized residues (similar to the normal Z residues, where the indication of significance is that the residues must be ≥ 2).

The effect size was calculated to show the magnitude of the differences between the samples. This effect size was expressed as R^2 (scale 0–1) so that it could be compared between the different types of variables and between different statistical tests and studies.

When the means were compared, R^2 was calculated with Cramer's V, similar to Pearson's coefficient, but specific for this type of data.

In all the inferential statistical samples, significance was considered when $p < 0.05$, and a high significance when $p < 0.01$. A value of $p < 0.10$ can be considered as almost significant, or a tendency towards it.

Furthermore, given that the sample was comprised by 125 individuals, its size could be a limitation. However, we must consider that the moderate effect size shows differences that are real, and which could be detected even with small samples such as $50 < N < 100$. The small effect size indicates that a relationship could be present, but to detect it with certainty, a sample size of around $N = 500$ is needed. The large or very large effect sizes are evidently differences that exist with a high degree of confidence, and that are detected "at a glance" and even with very small samples.

N by itself only helps when there is a presence or absence of meaning. With large N (800–1000–3000–5000-etc ...), significances could appear that are not real (without theoretical meaning).

With small N (<100 or <120), it is difficult to find significance, except when the relations/differences are very strong (very evident) and can be observed "at a glance".

Thus, the following scenarios demonstrate when the effect size helps:

- Small effect sizes (<20%) with a significance of (at least $p < 0.05$) and (a) with a small N indicate that differences exist, but that these are small/slight, and (b) with a large N indicate that these differences or relations are negligible;
- Moderate effects (>3%; >4%; >5%) or high ones (>10%), with a significance of at least $p < 0.05$), indicate the existence of differences or relationships, with a moderate or high magnitude/intensity, independent of N;
- Moderate or high effects, but without significance ($p > 0.05$), are indications of relationship/differences. Thus, what we find is that significance was not found because the size of N was not sufficient to reach it.

5. Results

Responses were myriad and varied with respect to the tasks that took more time to accomplish. For values over 50%, we find: rethink methodological strategies (54.4%), activities (53.6%), and correcting the student's work (53.6%); close to 50%, we find tutoring/advising the students (48.8%) and looking for new materials (46.4%).

Table 3 shows the description of the items that assessed the degree of anxiety. It is observed that all of them had a similar variability, with standard deviation values between 1.20 and 1.50 points, which indicates many differences between the participants. The mean values were not very high in general; thus, the degree of anxiety does not seem to be very high. However, six items stand out with means higher than 2 points (on a 0–4 scale). These are, in order of highest to lowest anxiety, the following:

- Item 11 (Time spent online): "The increase in the number of hours in front of the computer to tend to the demands from my students"—mean of 2.75 points;
- Item 13 (Receive feedback): "Not having immediate feedback from my students after my explanations in class, as most did not have the camera connected"—mean of 2.58 points;
- Item 14 (Participation): "The feeling that I did not reach all the students, and that only a minority participated online"—mean of 2.36 points;
- Item 12 (Invigoration): "Look for activities that could help invigorate the online classes"—mean of 2.26 points;
- Item 7 (Material): "Prepare more material"—mean of 2.23 points;
- Item 5 (Assessment): "Performing assessment tasks"—mean of 2.01 points.
- On the contrary, the items that provoked the smallest degree of anxiety were:
- Item 1 (Scheduling): "The review of the class schedule"—mean of 1.35 points;
- Item 3 (Practical sessions): "Having virtual practical session"—mean of 1.35 points;
- Item 4 (Communication): "Communication with the students"—mean of 1.59 points.

The significance of the differences between the means of these 15 items were contrasted, revealing a high significance, with $p < 0.001$ (RM ANOVA: F = 29.32; p-value = 0.000000) and a large effect size (0.191). Therefore, we can conclude that there are differences in the degree of anxiety in the different items answered.

Table 3. Assessment of the degree of anxiety/nervousness provoked by the online teaching during the confinement. N = 125.

Item	% Response for Each Option					Mean	Standard Deviation
	0	**1**	**2**	**3**	**4**		
1. Scheduling	32.0	27.2	21.6	12.0	7.2	1.35	1.25
2. Theoretical classes	20.8	24.0	27.2	16.8	11.2	1.74	1.28
3. Practice sessions	20.0	15.2	29.6	22.4	12.8	1.93	1.30
4. Communication	24.8	26.4	20.8	20.8	7.2	1.59	1.26
5. Assessment	15.2	20.8	27.2	21.6	15.2	2.01	1.29
6. Tutoring	32.8	27.2	20.0	12.0	8.0	1.35	1.27
7. Material	12.8	17.6	21.6	29.6	18.4	2.23	1.30
8. Provide feedback	18.4	18.2	29.6	16.0	16.8	1.94	1.33
9. New technologies	27.2	16.8	20.8	20.8	14.4	1.78	1.42
10. S-E needs	14.4	27.2	27.2	21.6	9.6	1.85	1.20
11. Time spent online	8.0	11.2	20.0	19.2	41.6	2.75	1.32
12. Invigoration	13.6	16.0	24.8	22.4	23.2	2.26	1.34
13. Receive feedback	12.8	9.6	20.0	21.6	36.0	2.58	1.39
14. Participation	12.0	21.6	14.4	22.4	29.6	2.36	1.41
15. Other	68.8	4.0	7.2	7.2	12.8	0.91	1.49

Therefore, in agreement with these results, the greatest anxiety for professors was the increase in hours in front of the computer to tend to the demands of the students, followed by the absence of immediate feedback from the students when explanations were given in class, as they did not have a camera connected, which made the professors think that they did not reach all the students, and that only a minority followed a given lesson.

Next, an exploratory factorial analysis (EFA) was performed to determine the unidimensionality of these items and to validate them as an assessment scale of the anxiety of professors. The results obtained through the Principal Axis Factoring method (Table 4) allow us to conclude that these 14 items had high factorial loads in a single dimension (between 0.54 and 0.80), which explained 59.8% of the variability.

This result, aside from validating these items as an assessment scale of the anxiety felt by master's professors during the transition from face-to-face teaching to online or hybrid teaching, allows us to create a complete scoring variable of anxiety. The gross scores of this variable were obtained using the habitual Likert scale, which is the sum of the numerical values of all the items. Therefore, the range of possible values was 0 to 56. The variable shows the complete set of empirical values, with a median of 28 points, and with the distribution having a normal Gaussian shape, from which the results do not deviate significantly (KS goodness-of-fit test: Value 0.06; exact p-value = 0.735). The mean was 27.7 points (95% CI: 25.4–30.0) with a standard deviation of ±12.9 points.

The mean values of all the four universities were compared in this total anxiety score, with an almost statistical significance found with $p < 0.10$ (ANOVA: F = 2.45 p-value = 0.067, which is explained by the fact that the mean value for the University of Tarapacá was lower than the mean values from the other three universities, namely, 18.8 points as compared to scores between 26.8 and 29.4 points.

When searching for a correlation between the independent variables such as gender (Table 5), a greater anxiety was observed in women, especially when faced with tasks such as the increase in the number of hours in front of a computer to tend to the student's

demands; looking for activities that will help invigorate the online classes; not having immediate feedback when explaining something in class, as most students did not have their cameras connected; and in a very striking manner, the feeling of not reaching all the students and that only a small portion of the students followed the class.

Table 4. Reliability and validity; reliability and unidimensionality of the anxiety items. N = 125 professors.

KMO = 0.90 Bartlett: *p*-Value = 0.00000	Factorial Analysis		Reliability
	Communality	Factorial Load	
1. Scheduling	0.363	0.60	0.54
2. Theoretical classes	0.556	0.74	0.69
3. Practice sessions	0.543	0.74	0.68
4. Communication	0.467	0.68	0.62
5. Assessment	0.583	0.76	0.71
6. Tutoring	0.531	0.73	0.69
7. Material	0.607	0.78	0.73
8. Provide feedback	0.496	0.70	0.64
9. New technologies	0.395	0.54	0.48
10. S-E needs	0.348	0.59	0.54
11. Time spent online	0.514	0.72	0.66
12. Invigoration	0.636	0.80	0.75
13. Receive feedback	0.491	0.70	0.64
14. Participation	0.544	0.74	0.68

Table 5. Anxiety, as a function of the Professors' Gender. N = 125 professors.

Anxiety (Mean Values)	TOTAL (N = 125)	GENDER		Mann-Whitney Test		Effect Size R^2
		Men (n = 50)	Women (n = 75)	Valor	*p* Valor	
1. Scheduling	1.35	1.26	1.41	0.18 NS	0.853	0.004
2. Theoretical classes	1.74	1.62	1.81	0.65 NS	0.517	0.006
3. Practice sessions	1.93	1.86	1.97	0.49 NS	0.627	0.002
4. Communication	1.59	1.48	1.67	0.66 NS	0.506	0.005
5. Assessment	2.01	1.74	2.19	1.91 †	0.057	0.029
6. Tutoring	1.35	1.24	1.43	0.52 NS	0.604	0.055
7. Material	2.23	2.00	2.39	1.67 †	0.095	0.022
8. Provide feedback	1.94	1.86	1.99	0.35 NS	0.723	0.002
9. New technologies	1.78	1.52	1.96	1.71 †	0.088	0.023
10. S-E needs	1.85	1.70	1.95	0.99 NS	0.321	0.010
11. Time spent online	2.75	2.42	2.97	2.23 *	0.026	0.043
12. Invigoration	2.26	1.96	2.45	2.04 *	0.041	0.033
13. Receive feedback	2.58	2.24	2.81	2.47 *	0.013	0.041
14. Participation	2.36	1.96	2.63	2.68 *	0.007	0.054
TOTAL ANXIETY SCORE	27.72	24.86	29.63	2.01 *	0.044	0.033

N.S. = Non-significant, † = Almost significant, and * = Significant.

When correlated with the variable age (Table 6), it was again observed that the number of hours in front of the computer to tend to a student's demands created the greatest anxiety, especially for older (>50 years old) and younger (20–40 years old) professors. Significant differences also appeared according to age in relation to the communication with the students, which again created the greatest anxieties in the previously mentioned age ranges.

Table 6. Anxiety, as a function of the age of the professors. N = 125 professors.

	TOTAL (N = 125)	AGE			Chi-Square Test		Effect Size R^2
		20–40 Years Old (n = 25)	41–50 Years Old (n = 40)	>50 Years Old (n = 60)	Value	*p*-Value	
1. Scheduling	1.35	1.60	1.05	1.45	4.34 NS	0.114	0.030
2. Theoretical classes	1.74	2.16	1.28	1.87	7.89 *	0.019	0.069
3. Practice sessions	1.93	2.36	1.58	1.98	5.55 †	0.062	0.047
4. Communication	1.59	1.52	1.22	1.87	6.22 *	0.045	0.051
5. Assessment	2.01	2.36	1.65	2.10	5.51 †	0.064	0.043
6. Tutoring	1.35	1.64	1.15	1.37	2.50 NS	0.285	0.019
7. Material	2.23	2.72	2.03	2.17	4.90 †	0.086	0.038
8. Provide feedback	1.94	2.08	1.60	2.10	3.67 NS	0.160	0.030
9. New technologies	1.78	1.72	1.42	2.05	4.92 †	0.086	0.038
10. S-E needs	1.85	2.16	1.55	1.92	4.46 NS	0.108	0.035
11. Time spent online	2.75	2.88	2.32	2.98	6.19 *	0.045	0.051
12. Invigoration	2.26	2.48	1.87	2.42	5.11 †	0.078	0.038
13. Receive feedback	2.58	2.72	2.13	2.83	5.78 †	0.056	0.053
14. Participation	2.36	2.76	1.95	2.47	5.66 †	0.059	0.046
TOTAL ANXIETY SCORE	27.72	31.16	22.80	29.57	9.33 **	0.009	0.071

N.S. = Non-significant, † = Almost significant, * = Significant, and ** = Highly significant.

However, the type of teaching contract and the teaching experience variables did not correlate significantly with any of the items considered in the study. In both cases, the highest means, with respect to the levels of anxiety, were centered on the tasks mentioned above.

Lastly, and in the final part of the analysis, the 15 anxiety variables (all 14 items + total score) were correlated with the variables of workload (8 items). For this, Spearman's correlation coefficient was utilized. A direct correlation value (a positive sign) indicates that high values in the anxiety variables correspond to the professors who answered "yes" to the corresponding workload item; therefore, an inverse correlation (negative sign) indicates that the high values in the anxiety variables correspond to the professors who answered this item with a "no". Given the N in the present study, any (absolute) value higher than 0.15 (small effect) is a significant correlation with $p < 0.05$, and any value higher than 0.22 (moderate effect) is significant with $p < 0.01$, with a higher value indicating a stronger correlation. The results are summarized in Table 7 (with the significant correlations in bold).

Considering that the correlations found were moderate, we considered those that were ≥0.24, highlighting:

- The professors who spent more time searching for new materials mentioned that they felt more anxiety when preparing the materials and giving theoretical classes.
- The professors who indicated a greater workload when correcting the student's work indicated that the online tutoring sessions with the students increased their levels of anxiety and nervousness.

- Tending to the student's questions implied a considerable increase in workload, and this translated to greater levels of anxiety when the tasks needed communication, tutorships, and an increased time spent to provide answers to the demands of the students. Providing feedback to the students created the greatest anxiety and workload.
- Lastly, building the course in the online platform directly correlated with greater anxiety due to the increase in the time spent online.

Table 7. Correlation coefficients between the variables anxiety and the workload items. N = 125 professors.

Variables	Rethink New Methodological Strategies	Search for New Materials	Re-Plan the Activities	Rethink the Assessment	Correct the Student's Classwork	Tend to the Student's Questions	Tutor/Advise Students	Build the Course in the University Platform
1. Scheduling	0.20	0.16	0.15	0.17	−0.07	0.00	−0.05	0.15
2. Theoretical classes	0.18	0.25	0.07	0.13	−0.05	−0.05	−0.01	0.06
3. Practice sessions	0.19	0.22	0.02	0.15	0.06	−0.06	0.09	0.11
4. Communication	−0.02	0.02	−0.11	−0.07	0.22	0.24	0.13	0.08
5. Assessment	0.11	0.14	−0.06	0.16	0.19	0.14	0.02	0.09
6. Tutoring	0.01	0.03	0.05	−0.10	0.29	0.24	0.21	0.11
7. Material	0.12	0.29	−0.01	0.02	0.08	0.06	0.04	0.13
8. Provide feedback	−0.05	−0.09	−0.04	−0.15	0.24	0.29	0.14	0.13
9. New technologies	0.22	0.27	0.01	0.19	0.01	−0.13	−0.13	0.09
10. S-E needs	0.05	0.14	0.03	0.13	0.23	0.12	0.19	0.18
11. Time spent online	0.07	0.19	0.03	0.18	0.15	0.27	0.16	0.27
12. Invigoration	0.23	0.17	0.03	0.15	0.11	0.03	0.10	0.18
13. Receive feedback	0.12	−0.06	−0.10	0.08	0.11	0.17	0.07	0.14
14. Participation	0.14	0.05	0.01	0.13	0.17	0.16	0.16	0.17
TOTAL ANXIETY SCORE	0.16	0.16	0.00	0.11	0.17	0.15	0.11	0.20

6. Discussion

A greater workload for professors leads to greater anxiety and stress, especially due to the increase in the number of hours spent in front of the computer to tend to the students' demands. In addition, having to search for materials and prepare activities that invigorate teaching through screens, and especially assessment tasks, were also highlighted. Along this line, other studies concur that the greatest stressors for professors were work overload, their psychological state, and lack of support [23,27]. These variables are more acute in emergency remote teaching, and can lead to demotivation, having a negative effect on the teaching provided. It is evident that the psychological well-being of professors was affected during the pandemic, and we must be aware of the consequences [28].

Another important factor that created anxiety was the absence of immediate feedback from the students during the class explanations via videoconferencing, as most students did not have their cameras connected. Nevertheless, the postgraduate professors made great efforts to widen communication channels with students to compensate for this lack of interaction. Regarding this aspect, our study concurs with others, which underlined that this feeling of not accompanying students and the lack of time dedicated to them, as well as the time spent in front of the computer, were some aspects, among others, that had an effect on the psychosomatic and emotional levels among the professors [29,30].

The results from this study also provide evidence on the greater anxiety of women, especially when facing tasks such as the increase in the number of hours spent in front of the computer to tend to a student's demands. This is explained in some studies indicating that the greater degree of work-related, emotional, social, and domestic loads is usually the responsibility of women, especially with that related to the difficulties of family conciliation [31,32]. The matters of gender are not separate from the function of teaching at university.

However, gender is not the only variable that should be taken into account, as the age of the professor must also be considered. The older professors (>50 years old) and

the youngest ones (20–40 years old) showed greater levels of anxiety when faced with the increase in the number of hours in front of the computer. The greater affectation in these two age ranges can be explained, on the one hand, by the lack of teaching experience of the youngest professors, and on the other, the lack of digital competence development of the older generation [22,33].

In post-pandemic times, and after the analysis of the events that occurred during emergency remote teaching, it was necessary to rethink some key aspects that define an improvement in the quality of university teaching. It is clear that the forced development of digital competence among professors and an open attitude towards technology are necessary today [22]. In line with what was mentioned in [34], the change in education driven by the pandemic has resulted in a new way to teach and learn, from the pedagogic function of the use of ICTs, which has not solely translated into a way of increasing their presence as a resource, or in transferring the face-to-face methods and manners of teaching to virtual environments [35].

7. Conclusions

Emergency remote teaching, and later hybrid teaching, developed by university professors, with an emphasis on master's professors, brought with it a greater workload and repercussions at the emotional level. It is interesting to identify the nature of the main psychological barriers and the tasks that led to an alteration of the state of mind of postgraduate professors. Only then can we act by providing the support needed by the professors, so that technologies and their pedagogic application do not become an obstacle to reaching high-quality teaching without an additional cost in the form of work and emotional overload.

It is interesting to observe that these limiting factors were the same among professors, independently of the university where they practiced their professions. Reality becomes globalized, and the workload and anxiety experienced were replicated to a higher or lower degree in very different contexts.

Although many studies showed that during the pandemic, post-graduate students were more independent and managed their learning better, professors at this educational level were equally affected during the development of their teaching duties at the emotional level.

In light of the new post-pandemic reality, it is necessary to think of teaching proposals with respect to the use of digital resources, strategies of emotion management, and organizational guidelines that help manage online or hybrid teaching in a positive manner, beyond the mere translation of the face-to-face methods to the virtual environment.

Thus, it is necessary for governments and educational institutions to focus their attention on the student as well as the educators, on the use of technological tools and the development of a pedagogic model that integrates didactic strategies, and on the construction of learning material that is appropriate for virtual and hybrid teaching. It is necessary to place a wager on the development of the digital competence of educators that can become integrated into their way of thinking and acting as educators.

References

1. World Health Organization: Coronavirus Disease. Available online: https://www.who.int/emergencies/diseases/novel-coronavirus-2019 (accessed on 28 June 2022).
2. Structural model to determine the factors that affect the quality of emergency teaching, according to the perception of the student of the first university courses. *Sustainability* **2021**, *13*, 2945. [CrossRef]
3. Aguilar, F. Del aprendizaje en escenarios presenciales al aprendizaje virtual en tiempos de pandemia. *Estud. Pedagógicos* **2020**, *46*, 213–223. [CrossRef]
4. Britez, M. La educación ante el avance del COVID-19 en Paraguay. Comparativo con países de la Triple Frontera. *SciELO-Sci. Electron. Libr. Online* **2020**, *15*, 1–15. [CrossRef]
5. Reyes, R.; Quiróz, J. De lo presencial a lo virtual, un modelo para el uso de la formación en línea en tiempos de COVID-19. *Educar. Rev.* **2020**, *36*, 1–20. [CrossRef]
6. Bravo, B.; Pesa, M.; Braunmüller, M. IDAS: Una metodología de enseñanza centrada en el estudiante para favorecer el aprendizaje de la física. *Rev. Bras. De Ensino De Física* **2022**, 44. [CrossRef]
7. Santos, E.; Pelcastre, A.; y Ruvalcaba, J. Impacto del enfoque constructivista en el proceso de nivelación de enfermería. *J. Negat. No Posit. Results* **2020**, *5*, 91–103. [CrossRef]
8. García, I.; de la Cruz, G. Las guías didácticas: Recursos necesarios para el aprendizaje autónomo. *Edumecentro* **2014**, *6*, 162–175.
9. Segovia-Chamorro, J.; y Guerra-Zúñiga, M. Percepción estudiantil del uso del video como herramienta de retroalimentación a distancia: Estudio piloto. *FEM Rev. De La Fund. Educ. Médica* **2020**, *23*, 35–37. [CrossRef]
10. Morales, C.A.; Rueda, D. Aproximaciones teóricas a la calidad de la docencia universitaria. *Rev. Cuba. De Educ. Super.* **2019**, *38*, 2.
11. Sanz Ponce, R.; López-Luján, E. Aprendizajes educativos tras la pandemia COVID-19. ¿Qué papel debe jugar la escuela en el nuevo escenario mundial? *Rev. Complut. De Educ.* **2022**, *33*, 215–223. [CrossRef]
12. Marqués, C.; Taveira, M.; Ceinos, C.; Silva, A.; Nogueira, M. Satisfacción con la vida en estudiantes universitarios: Papel predictor de los valores. *Psicol. Desde El Caribe* **2018**, *35*, 171–182. [CrossRef]
13. Gálvez, E.; Milla, R. Evaluación del desempeño docente: Preparación para el aprendizaje de los estudiantes en el Marco de Buen Desempeño Docente. *Propósitos Y Represent.* **2018**, *6*, 407–429. [CrossRef]
14. Amurrio, F. Evaluación de los aprendizajes por competencias. *Rev. Sci.* **2017**, *6*, 134–150.
15. Acebedo-Afanador, M.; Aznar-Díaz, I.; Hinojo-Lucena, F. Instrumentos para la Evaluación del Aprendizaje Basado en Competencias: Estudio de caso. *Inf. Tecnológica* **2017**, *28*, 107–118. [CrossRef]
16. Leiva, J. La evaluación como clave de comprensión del aprendizaje y la calidad educativa: Una indagación cualitativa en el contexto universitario. *Certiuni J.* **2016**, *2*, 26–37.
17. Martínez-Miguel, E.; Solano, M.; García-Carpintero, E.; Manso, C. Impacto de la evaluación de competencias en la calidad del aprendizaje: Percepción de discentes y docentes de Grado en Enfermería. *Enfermería Glob.* **2018**, *17*, 400–429. [CrossRef]
18. Navarro, N.; Falconí, A.; Espinoza, J. El mejoramiento del proceso de evaluación de los estudiantes de la educación básica. *Rev. Univ. Y Soc.* **2017**, *9*, 58–69.
19. Fardoun, H.; González-González, C.; Collazos, C.A.; Yousef, M. Estudio Exploratorio en Iberoamérica sobre el Proceso de Enseñanza-Aprendizaje y Propuesta de Evaluación en la Pandemia. *Educ. Knowl. Soc.* **2020**, *21*, 1–9. [CrossRef]
20. Fernández Río, J.; Lopez-Aguado, M.; Pérez-Pueyo, A.; Hortigüela-Alcalá, D.; Manso-Ayuso, J. La brecha digital destapada por la pandemia del coronavirus: Una investigación sobre profesorado y familias. *Rev. Complut. De Educ.* **2022**, *33*, 351–360. [CrossRef]
21. Viñas, M. Retos y posibilidades de la educación híbrida en tiempos de pandemia. *Plurentes. Artes Let.* **2021**, *12*, e027. [CrossRef]
22. García Aretio, L. COVID-19 y educación a distancia digital: Preconfinamiento, confinamiento y posconfinamiento. *RIED-Rev. Iberoam. De Educ. A Distancia* **2021**, *24*, 9–32. [CrossRef]
23. Del Arco, I.; Silva, P.; Flores-Alarcia, Ò. University Teaching in Times of Confinement: The Light and Shadows of Compulsory Online Learning. *Sustainability* **2021**, *13*, 375. [CrossRef]
24. Odriozola-González, P.; Planchuelo-Gómez, Á.; Irurtia, M.J.; de Luis-García, R. Psychological effects of the COVID-19 outbreak and lockdown among students and workers of a Spanish university. *Psychiatry Res.* **2020**, *290*. [CrossRef]
25. Wang, C.; Pan, R.; Wan, X.; Tan, Y.; Xu, L.; Ho, C.S.; Ho, R.C. Immediate psychological responses and associated factors during the initial stage of the 2019 coronavirus disease (COVID-19) epidemic among the general population in China. *Int. J. Environ. Res. Public Health* **2020**, *17*, 1729. [CrossRef]
26. De Oliveira Araújo, F.J.; Abrantes de Lima, L.S.; Martins Cidade, P.I.; Bezerra Nobre, C.; Rolim Neto, M.L. Impact of SARS-CoV-2 and its reverberation in global higher education and mental health. *Psychiatry Res.* **2020**, *288*, 112977. [CrossRef]
27. Ozamiz-Etxebarria, N.; Dosil Santamaría, M.; Idoiaga Mondragon, N.; Berasategi Santxo, N. Estado emocional del profesorado de colegios y universidades en el norte de España ante la COVID-19. *Rev. Española De Salud Pública* **2021**, *95*, e1–e8.
28. Robinet-Serrano, A.; Pérez-Azahuanche, M. Estrés en los docentes en tiempos de pandemia COVID-19. *Polo Del Conoc.* **2020**, *5*, 637–653.

29. Sojuel, D.; Nanne-Lippmann, I. Transición a la educación remota en emergencia de docentes y estudiantes en Centroamérica y el Caribe. RECIE. *Rev. Caribeña De Investig. Educ.* **2021**, *5*, 107–123. [CrossRef]

30. Coolican, M.; Borras, J.C.; Strong, M. Argentina and the COVID-19: Lessons learned from education and technical colleges in Buenos Aires Province. *J. Educ. Teach.* **2020**, *46*. [CrossRef]

31. La Velle, L.; Newman, S.; Montgomery, C.; Hyatt, D. Initial teacher education in England and the COVID-19 pandemic: Challenges and opportunities. *J. Educ. Teach.* **2020**, *46*, 596–608. [CrossRef]

32. López-Orellana, C.T.; Varela Torres, J.J.; Guzmán Martínez, P.; Piedra-Martínez, E.; Freire-Pesántez, A.; Baculima Bacuilima, J.L.; Cordero Cobos, L. Bienestar docente durante la Pandemia COVID-19: La Comparación entre Ecuador y Chile. *Rev. De Sociol. De La Educ. -RASE* **2021**, *14*, 325–347. [CrossRef]

33. 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]

34. Gisbert, M.; Esteve, V.; Lázaro, J.L. (Eds.) *¿Cómo Abordar la Educación del Futuro?: Conceptualización, Desarrollo y Evaluación Desde la Competencia Digital Docente*; Ediciones Octaedro: Barcelona, Spain, 2019.

35. González-Sanmamed, M.; Sangrà, A.; Souto-Seijo, A.; Estévez, I. Learning ecologies in the digital era: Challenges for higher education. *Publicaciones* **2020**, *50*, 83–102. [CrossRef]