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University Professor Training in Times of COVID-19: Analysis of Training Programs and Perception of Impact on Teaching Practices

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Abstract: During the confinement and post-confinement period, the continuous training centers at different Catalan universities adapted the lifelong learning of professors. The present study analyzes the education of lecturers from Catalan universities before and after the pandemic, as well as their perception of its impact. A documentary analysis was performed of the continuous training programs for professors. Posteriorly, an enquiry was made about the perception of impact of this training, through a descriptive and inferential analysis with the use of a questionnaire designed ad hoc. Results indicated an increase in training associated with institutional digital tools, online evaluation, and design of online courses. The efforts by the professors to implement the knowledge acquired is underlined, with a higher perception of impact observed in the areas of Social and Legal Sciences and Arts and Humanities. In addition, the main difficulties perceived were the lack of time for adapting their practice of teaching with the knowledge acquired, as well as the complexity of performing an online evaluation. It is concluded that there is a need for continuous training programs that help establish support networks and collaboration between professors for the improvement of teaching, and in which one of the priorities is online evaluation.

Keywords: lifelong learning; online education; online training; teacher training

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1. Introduction

The worldwide pandemic due to COVID-19 [1] caused a great number of changes in many of the aspects of day-to-day life. In Spain, the state of alarm was decreed [2], which mandated the confinement of the entire Spanish population to their homes from March 2020 to July 2020. In the area of Higher Education, the manner of teaching had to be changed, thus establishing the virtual format at every public university [3,4].

Continuous training of the university professors was also affected. Many universities offered more training and education on ICT and virtual teaching [5–7]: institutional digital tools, methodologies, hybrid classrooms, etc.

2. The Training of the University Professors

The training of university professors is a widely-studied field of research. It could be said that it has two different aspects [8]: on the one hand, to have the knowledge and the competences related to their area of knowledge, which they should be able to transmit or promote in their students, as well as knowing and appreciating the discipline will be essential to connect with students [9], while, on the other hand, having training on the manner in which these knowledge and competences are taught.

The relationship between knowledge and pedagogy as a set is developed by Reference [10] in the PCK model (Pedagogical Content Knowledge), a cornerstone within the training of professors, in which two variables are interrelated: the basic knowledge of the subject that the professor must teach and how it is taught. The model differentiates the

pedagogue from the content expert because what is precisely sought is the intersection between these two elements [11,12].

Reference [13] proposed the TPACK model (Technological Pedagogical Content Knowledge). The authors added a third element to the initial variables, technology. The TPACK model indicates that the training of the professors must seek the intersection between these three variables [14–16].

From a more current perspective, Reference [17] presented the Model of Teacher Academic Development (MDAD). This model includes variables of content and pedagogy, and, although not in an explicit manner, we also glimpse the need to use technologies to achieve the objectives proposed. The value added by the MDAD model is that it proposes different levels of development and dimensions. The levels reflect the progression of a specific teaching value, a progression regulated by 15 dimensions, which are organized into three blocks: curriculum (what do we teach?); processes (how do they learn? how do we teach?); and rationales (why do we do what we do?). In this sense, Reference [17] affirms that the aim of the model is to stagger the advance of each dimension until reaching its greatest development. The result of the three levels is an adequate map of teaching.

Universities must promote and facilitate training of professors. It is indispensable to harmonize the institutional logics with the needs of the professors [18]. Starting with this harmonization, different training modalities can be promoted [8]: training courses, seminars, support and collaboration between professors, reflective practices, etc., always trying to achieve that the training activity has a positive impact and is transferred to the professors' teaching tasks.

3. Impact of the Continuous Training of Professors

Presently, and considering the COVID-19 pandemic [1], the e-learning training processes of university professors have become key elements for the positive impact of the knowledge acquired on virtual teaching [19–21]. According to References [22,23], transferring new training consists on the application of the skills, knowledge, and attitudes acquired into the workplace. The positive impact of training is one of the aims of the professor's training programs. Thus, a positive impact on the practice of teaching [24,25], or in the development of the pertinent education competences, is sought from the newly acquired knowledge.

However, achieving a positive impact of the university professor's training is a great challenge [15,23,25–29]. In addition, there is little scientific evidence which examines if the training received is truly applied, and in the case it is, if the new knowledge improves university teaching [1,11,30]. This aspect is more emphasized when the impact of training associated with the ICT is linked to it [14,31,32], but especially with its connection with the disciplinary and pedagogic competences [15,16].

Assessment of the impact places the spotlight on the changes made before and after the training, and it also allows us to observe if the training of the professors leads to real transformations and changes in the practice of teaching [30–33]. Therefore, evaluation of the impact allows for a self-evaluation of the knowledge acquired, and the real meaning of the training received [26,30]. In this sense, evaluation of the impact of training allows us to make decisions that could lead to its improvement [15,26,34,35].

Lastly, it should be considered that evaluation of the impact of the training should be performed the year after it occurred, as it is always done on a delayed basis [26,27,34–36]. This will allow the changes in the practice of teaching associated to the training received to take place.

4. Methodology

4.1. Objectives

The objectives of this study are:

- To analyze the training received by professors from Catalan universities during the pandemic for their practice of teaching.

- To learn about the training proposals planned and the subjects that were most demanded.
- To evaluate the perception of impact of the training received.

4.2. Method

To achieve the objectives proposed, the study was conducted in two key phases:

A. First, a study was made of the continuous training offered to university professors in 2019 and 2020 by the different university units and institutions that were responsible for this matter. A comparison was made to determine the type of training proposals and the subjects developed, as well as to discover which garnered the most professors' interest. The intention was to compare and contrast the differences between the training proposals from each year and, to verify if the new teaching reality due to the pandemic, intervened in the training demanded by the professors. This first phase was conducted through documentary analysis. The results are shown in a table of percentages.

B. Second, through a non-experimental and descriptive quantitative research methodology, we constructed an ad hoc questionnaire to ask about aspects associated to the adequacy and perception of impact of the training received on the practice of teaching itself.

This questionnaire was composed by a block of identification data considered as independent variables: age, gender and area of knowledge. After this, 51 items are shown, which were answered using Likert-type responses, where 0 was nothing/null, and 4 signified a lot/always. These 51 items were grouped into 6 differentiated blocks:

- Block 1: Type of training received (9 items),
- Block 2: Level of learning derived from the training (8 items),
- Block 3: Help from the knowledge acquired (12 items),
- Block 4: Feelings towards the use of the new knowledge (4 items),
- Block 5: Difficulties in the application of the training received (9 items), and
- Block 6: Perception of impact of the training (9 items).

The questionnaire finishes with three open-ended questions that inquire about the reasons for which the professors signed up to the training courses, the self-diagnosis performed about their level of competence for conducting online teaching, and, finally, which aspects should be improved in the training courses received.

The statistical treatment of the data collected with this questionnaire will serve to conduct a descriptive and inferential analysis. The techniques and statistical tests utilized were:

- Descriptive tests of the quantitative variables with frequency and percentage tables.
- The Likert variables were described through a distribution of percentages of the responses and the habitual tools of means and standard deviations.
- The reliability of the questionnaires was assessed through Cronbach's Alpha Coefficient to measure the internal consistency. A value higher than 0.60 indicates an acceptable reliability, and, if higher than 0.80, it is good, or >0.90 very good.
- The non-parametric Friedman test was utilized to contrast the mean values of the Likert variables measured in the same sample of subjects that were not have a statistically normal distribution, to verify the meaning of the differences between them.
- To contrast the means of the subgroups of the different subjects, the Mann-Whitney and Kruskal–Wallis tests were utilized when these were not distributed normally.

Lastly, the effect size was calculated to express the magnitude of the differences between the samples. This effect size was expressed in R2 (scale: 0–1) so that it could be compared between different types of data from the variables, and between different statistical tests. When the means were compared, R2 was calculated with Cohen's D [37]. When the variables were categorical, R2 was calculated with Cramer's V, similar to Pearson's, but specific for these type of data [38]. In all these inferential statistical tests, significance was considered when $p < 0.05$, with high significance when $p < 0.01$.

4.3. Sample

The questionnaire was applied thanks to the collaboration of the professor training centers from the participating Catalan universities (UAB, UB, UPF, UdG, URV, UdL, UVic, and UPC). The size of the study sample was calculated to be approximately 6620 professors, considering a value of 20 per training course, with 331 training courses counted.

According to this N population, and setting the confidence level at 95%, along with a maximum margin of error of ±5%, and an assumption of maximum variance (P = Q = 50%): the minimum sample N estimated was 364 subjects. We were able to obtain responses from 379 participants, so that this initial estimated number of cases needed was exceeded, thereby satisfactorily meeting the sampling conditions and slightly reducing the margin of error forecasted (4.9%).

The age of the professors who completed the questionnaire ranged from 24 to 65 years old (median of 48), with the mean age of 46.6 years old (95% CI: 45.6–47.6; SD ± 9.8 years). A greater participation of women as compared to men, 64.4% versus 35.6% (244 and 135 cases) was observed. The mean for both genders was similar (M: 47.4 versus W: 46.2), without a significant difference found between them ($p > 0.05$).

The most represented areas of knowledge were Social and Legal Sciences (32.7%; 124), followed by Health Sciences (26.1%; 99). Engineering and Architecture (17.4%; 66) occupied the next position, with Science (12.7%; 48) and Arts and Humanities (11.1%; 42) found in the lowest positions.

Data indicated that before the COVID-19 health crisis, the degree of prior knowledge associated to online teaching and the digital classroom was not very high: only 0.8% (3 cases) confirmed that they were well prepared, and 20.6% (78) considered themselves to have a great amount of knowledge. The largest part of the sample (37.2%; 141) affirmed that they only had some basic knowledge and notions. Lastly, 25.3% (96) answered that they had little knowledge, and 16.1% (61) had no knowledge.

4.4. Validity and Reliability of the Questionnaire

The questionnaire was subjected to content validity by 10 judges, of which 5 were experts in professor training and 5 were participants in the sample analyzed. The validation criteria utilized were univocality, relevance, and the degree of importance of each item. The suggestions from the judges were considered for the creation of the final version of the questionnaire.

Overall reliability of the items as a set was studied, with a high Cronbach's Alpha value of 0.95 (CI: 0.94–0.96) found. This high reliability was maintained separately by each block, with coefficients within the range of 0.80 (from the Perception of impact of the training), and 0.94 (from the Help from the training received).

5. Results

Firstly, data on the analysis of the programs planned by the universities for the training of professors in 2019 and 2020 will be presented. Afterwards, and to provide an answer to the study objectives, we considered, specifically, three blocks of the questionnaire, as they were directly associated to the knowledge acquired in the training by professors and the application and perception of impact of this knowledge in the practice of teaching: Block 3 (Help from the training received, Cronbach's Alpha = 0.94, CI 0.93/0.95), Block 5 (Difficulties in the application of the training received, Cronbach's Alpha = 0.86, CI 0.84/0.88), and Block 6 (Perception of impact of the training, Cronbach's Alpha = 0.80, CI 0.77/0.83).

5.1. Training Proposals for University Professors at Catalan Universities

Table 1 shows the analysis performed starting with the training courses offered Catalan universities that were analyzed. A comparison was made between the training offered in 2019 (pre-COVID-19 period) and those in 2020 (COVID-19 period).

Table 1. Training offered by Catalan universities in 2019 and 2020.

Training Content	Percentage 2019	Percentage 2020
Institutional digital tools	32.25%	36.23%
Non-institutional digital tools	21.78%	9.67%
Methodologies compatible with online teaching	20.16%	13.04%
Communication through digital tools	2.42%	3.86%
Evaluation compatible with online teaching	5.65%	13.53%
Personal management in times of crisis	1.61%	0.97%
Equipment for hybrid classrooms	0.81%	0.97%
Design of online courses: transition to remote teaching	4.03%	12.56%
Tutoring	4.03%	2.42%
Computer safety and data protection	4.03%	6.76%
Total for online teaching training	18.51%	30%

Source: Created by authors.

During the 2019 period (pre-pandemic period), Catalan universities offered 670 continuous training courses for professors, of which 124 (18.51%) were destined toward the development of the digital competences of the educators. Thus, of the 124 courses, the training contents that were most taught were: Institutional digital tools (32.25%), Non-institutional digital tools (21.78%), Methodologies compatible with online teaching (20.16%), and Evaluation compatible with online teaching (5.65%). On the other hand, the contents that were least offered were: Computer safety and data protection, Tutoring, and Design of online courses: transition to remote teaching (all of them with 4.03%), Personal management in times of crisis (1.61%), and Equipment for hybrid classrooms (0.97%).

Due to the pandemic, the Catalan universities offered 690 continuous training courses, of which 207 (30%) aimed to help with the adaptation to virtual teaching. Of these 207 courses, as observed in Table 1, the contents that were most taught in 2020 were: Institutional digital tools (36.23%), Evaluation compatible with online teaching (13.53%), Methodologies compatible with online teaching (13.04%), Design of online courses: transition to remote teaching (12.56%). On the other hand, the least offered were: Communication through digital tools (3.86%), Tutoring (2.42%), Personal management in times of crisis (0.97%), and Equipment for hybrid classrooms (0.97%).

5.2. Description of the Perception of Impact of the Training Received on Teaching

5.2.1. Help from the Training Received

Table 2 summarizes the responses about the knowledge acquired by professors.

After the contrast analysis between the means of these items, a high statistical significance was found, $p < 0.001$ (Friedman value = 675.63; p-value = 0.000000), along with a large size effect (R2 = 0.188), which demonstrated the existence of differences in the responses provided for these items. The analysis of the means points out that the significance was mainly determined by on item, number 3.12 (Establish collaboration and exchange networks with other colleagues), which obtained a score that was lower than the rest. The rest of the items obtained homogeneous mean values, between 2.44 and 3.00. Among the items with the highest scores, the following are highlighted: 3.8 (Have more knowledge about digital tools), 3.1 (Improve my online teaching), 3.2 (Be more efficient in online teaching), and 3.4 (Become more aware of my needs).

Table 2. Descriptive analysis. Help from the training received. Reliability: Alpha = 0.94 N = 379.

% of Response for Each Option						Descriptive Values	
Item	**0**	**1**	**2**	**3**	**4**	**Mean**	**Std. Dev.**
3.1: Improve my online teaching	3.2	6.6	12.9	43.3	34.0	2.98	1.01
3.2: Be more efficient in online teaching	3.2	8.2	16.9	40.1	31.7	2.89	1.04
3.3: Improve the quality of my online teaching	3.2	8.2	23.2	37.7	27.7	2.79	1.04
3.4: Become more aware of my needs	7.1	5.5	21.1	28.0	38.3	2.85	1.20
3.5: Have more interest for learning about online teaching	8.7	11.1	20.3	30.6	29.3	2.61	1.25
3.6: Develop new aptitudes for online teaching	4.7	7.1	22.2	39.6	26.4	2.76	1.07
3.7: Have more knowledge about methodologies that are adequate for online teaching	7.1	7.9	23.5	36.1	25.3	2.65	1.15
3.8: Have more knowledge about digital tools	4.0	4.0	15.3	42.0	34.8	3.00	1.01
3.9: Have more knowledge about online evaluations	11.1	12.1	19.3	26.9	20.6	2.44	1.25
3.10: Have more knowledge about quality online teaching	8.7	9.5	22.7	36.9	22.2	2.54	1.19
3.11: Have more tools to improve communication	10.3	13.7	20.1	33.8	22.2	2.44	1.26
3.12: Establish collaboration and exchange networks with other colleagues	24.5	21.4	27.7	13.5	12.9	1.69	1.32

Source: Created by authors.

5.2.2. Block 5: Difficulties in the Application of the Training Received

Table 3 contains the description of the items associated with the difficulties found for applying the knowledge acquired.

Table 3. Descriptive analysis. Difficulties in the application of the training received. Reliability: Alpha = 0.86 N = 379.

Percentage of Response for Each Option						Descriptive Values	
Item	**0**	**1**	**2**	**3**	**4**	**Mean**	**Std. Dev.**
5.1: Insufficient digital resources	24.8	19.6	20.1	24.0	12.1	1.80	1.37
5.2: Insufficient training on online teaching	24.8	25.6	25.9	16.6	7.1	1.56	1.23
5.3: Lack of time	7.1	103	20.1	25.6	36.9	2.75	1.25
5.4: Lack of support from the institution	31.9	19.8	23.5	11.9	12.9	1.54	1.38
5.5: Insecurity in implementing new things	25.6	27.2	26.1	16.6	4.5	1.47	1.70
5.6: Difficulty in applying new methodologies	19.0	24.0	30.3	23.2	3.4	1.68	1.13
5.7: Difficulty in applying the evaluation compatible with online teaching	13.5	16.6	24.5	22.4	23.0	2.25	1.34
5.8: Difficulty in applying digital resources	22.2	32.7	26.4	16.1	2.6	1.44	1.08
5.9: Lack of access to technological means and resources	45.4	15.8	22.7	13.5	2.6	1.12	1.20

Created by authors with IBM SPSS Statistics 25.

Responses did not denote great difficulties (medium-low level). Within the responses, two items were prominent due to their higher values, which indicated greater difficulties (see Figure 1): 5.3 (Lack of time), and 5.7 (Difficulty in applying the evaluation compatible with online teaching). The results from the comparison test showed that these differences were very significant statistically, $p < 0.0001$ (Friedman value = 592.52; p-value = 0.000000), and with a large size effect (R2 = 0.206). On the contrary, the lowest degree of difficulty was observed in item 5.9 (Lack of access to technological means and resources).

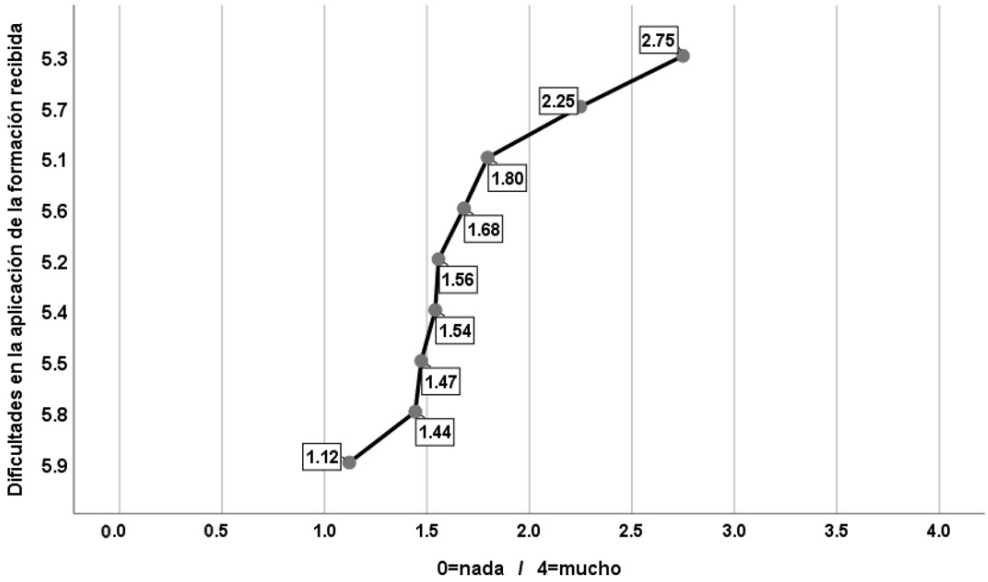

Figure 1. Diagram of the means. Difficulties in the application of the training received. N = 379. Created by authors with IBM SPSS Statistics 25.

5.2.3. Block 6: Perception of Impact of the Training

Lastly, Table 4 shows the perception of impact of the training received on the practice of teaching.

Table 4. Descriptive analysis. Perception of impact of training. Reliability: Alpha = 0.80 –N = 379.

Percentage of Response for Each Option						Descriptive Values	
Item	**0**	**1**	**2**	**3**	**4**	**Mean**	**Std. Dev.**
6.1: Development of my digital competence	3.2	4.7	17.7	41.2	33.2	2.97	0.99
6.2: Application of the knowledge acquired	1.6	1.6	16.9	39.3	40.6	3.16	0.87
6.3: Application of new technologies	2.4	8.2	21.4	34.6	33.5	2.89	1.04
6.4: Application of new online evaluation strategies	7.7	15.8	23.0	29.0	24.5	2.47	1.23
6.5: Application of new institutional digital resources	2.4	8.2	15.3	30.3	43.8	3.05	1.06
6.6: Application of new non-institutional digital resources	19.3	7.1	25.9	25.6	22.2	2.24	1.39
6.7: Use of new ways to communicate with the student	5.8	7.9	25.3	30.9	30.1	2.72	1.15
6.8: Maintenance of the same teaching format	23.7	26.1	25.3	20.1	4.7	1.56	1.19
6.9: Creation of a network of colleagues to share experiences	43.0	29.0	15.3	9.6	3.2	1.01	1.12

Created by authors with IBM SPSS Statistics 25.

Comparison (Figure 2) again revealed the existence of highly significant differences ($p < 0.0001$, Friedman value = 1083.52; p-value = 0.0000000), along with a very large size effect of 38.1% (R2 = 0.381), which provided solid statistical support that confirm the existence of large differences in this block of items. After analyzing the mean values, it was verified that two items were different from the rest due to their low values: 6.9 (Creation of a network of colleagues to share experiences), and 6.8 (Maintenance of the same teaching format), which were, therefore, the ones where less perception of impact was observed. On the other hand, many items had superior scores, mainly: 6.2 (Application of the knowledge acquired) and 6.5 (Application of new institutional digital resources), but we could also cite 6.1 (Development of my digital competence) and 6.3 (Application of new technologies).

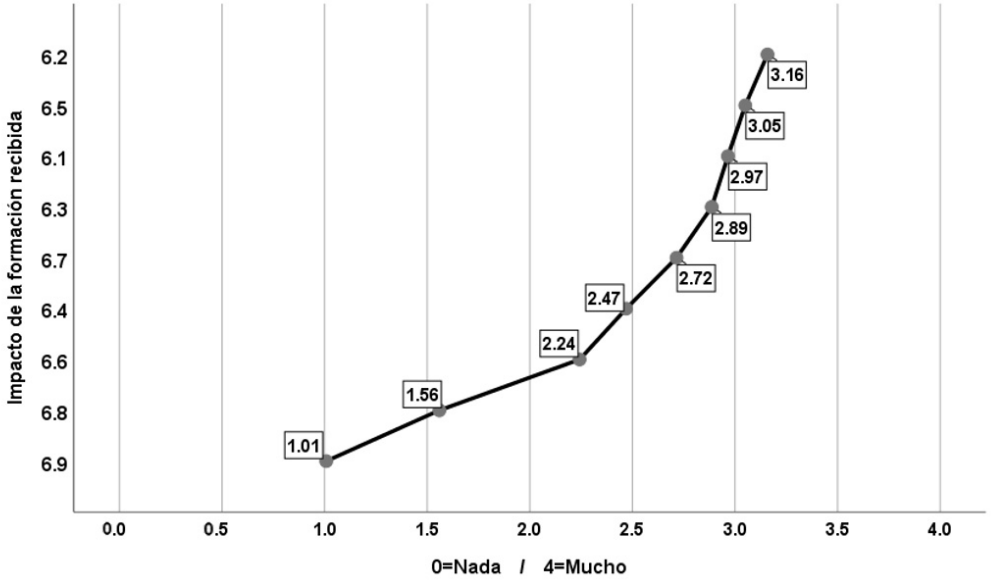

Figure 2. Diagram of means. Perception of impact of the training received. N = 379. Created by authors with IBM SPSS Statistics 25.

5.3. Inferential Analysis

Next, all the items from each block were contrasted as a function of the factors: Sex, Age, and Area of knowledge. Non-parametric tests were utilized (due to the lack of normality of these variables), and the size effect (R2) was added.

In relation to the blocks used in this study, we can highlight the following:

- Gender: Differences were barely found with statistical significance and accompanied with an effect size of any importance. The ones that appeared indicated that:
  - Highest mean scores of women for the items: 3.6 (Develop new attitudes towards online teaching) and 6.5 (Application of new institutional digital resources).
  - Higher mean scores of men for items 5.3 (Lack of time) and 5.1 (Insufficient digital resources).
- Age: For the analysis of age as a possible explanatory factor for the differences between the items, many cut-off points for this variable were tried. Ultimately, the best results were found by the cut-off points presented in the following results: until 35 years old, from 36 to 50 years old, and from 51 years old forward. As a function of this categorization, high significances with a large effect size were found in:
  - In item 3.9 (Have more knowledge about online evaluations) ($p < 0.001$; effect of 6.6%) and item 6.4 (Application of new online evaluation strategies) ($p < 0.001$; effect of 6.7%), the highest mean was observed in the younger participants, with the lowest value found in the intermediate age group, to again increase in the oldest group.
  - In item 5.1 (Insufficient digital resources) ($p < 0.001$; effect of 6.1%), the inverse relationship can again be observed, where the score was reduced as the age of the participants increased, but especially in the jump from the 31 years old with respect to those who are younger.
- Knowledge: the highest means were observed in Arts and Humanities, and Social and Legal Sciences, with the lowest mean observed for Sciences. The significances with large effects were especially observed in Block 3, in the items: Improve my online teaching, improve the quality of my online teaching. Develop new aptitudes for online teaching, and Have more knowledge about quality online teaching. The Sciences professors scored this last item with the lowest values.

Arts and Humanities and Social and Legal Sciences once again provided the highest scores in Block 6, with special emphasis in the items Development of my digital competence, and Application of new non-institutional digital resources. This last item received the lowest scores in the area of Engineering and Architecture.

6. Discussion

In first place, with respect to the training proposals planned, we verified their increase in 2020. This increase was essentially centered with online teaching; therefore, we can conclude that universities were able to focus the training on the main professor's needs at that time. The problem, however, was that the proposals were mainly focused on digital tools and their use, leaving aside methodological and didactic aspects, an approach that was not in agreement with the most important models of reference, such as those from References [10,13]. This could have contributed to the fact that the professors reproduced didactic methods belonging to in-person teaching [4,5] during their practice of online teaching.

However, the interest of lecturers for obtaining answers to face the challenges brought on by the new ways of teaching was evident, due to the increase in course participation. The new knowledge acquired was specifically centered on three aspects: adapt in-person teaching to virtual teaching, improve skills for virtual teaching, and to discover technological tools. Interest was observed for the application of this new knowledge towards the practice of teaching [24,25], thus meeting one of the main objectives of professor's training. Perhaps the next step would be to discover, in agreement with References [11,30], if the perception of impact detected improved or not the quality of teaching. However, the application of this new knowledge was not without its difficulties, as the study demonstrated that the professors had problems in the application of knowledge related with the evaluation of learning in online teaching, as also pointed out by authors, such as References [39,40]. Transferring the parameters of an in-person evaluation to online evaluation is impossible, considering that in most occasions, the evaluation models developed for in-person teaching are based on collecting information on the contents that students are able to recall, as a result of a transmission-based methodology.

The obligation of fitting the evaluation to the online format evidences the awkwardness of the dominant pedagogic model [41], which is far from pedagogic models based on active learning and an authentic evaluation.

Another aspect which highlighted the difficulty in applying the knowledge acquired was the lack of time [42], greatly expressed by the male professors in the intermediate age interval. The younger and older professors did not indicate this difficulty, either due to a greater motivation towards the improvement of teaching, or, because in the case of the older ones, they had the professional stability necessary for dedicating their time to the practice of teaching. References [17,43–46] point to the need to establish a professional profile of educators that is more equilibrated between the different functions of a university professor, and which allow easing the tensions between teaching and research.

7. Conclusions

As a result of this study, a series of relevant conclusions can be drawn. The first of these is related to training proposals. It has been possible to verify that, during 2020, there was an increase in these. This increase was based on the offer of continuous training courses related to online teaching. It can, therefore, be concluded that the universities were able to focus training and react to the training needs arising from the health emergency situation.

On the other hand, it has been observed that the training proposals were basically focused on digital tools, leaving methodological and didactic issues in the background. We can conclude that training in digital tools is important, but we are committed to more global training models that integrate pedagogical aspects.

We also note an increase in teacher participation in continuous training courses. The main learning contents focus on three factors: adapting face-to-face teaching to virtual

teaching, improving skills for developing virtual teaching, and learning about technological tools. Therefore, it is concluded that teachers are interested not only in learning about digital tools but also in more didactic elements. Therefore, it would be interesting for university organizations to take into account the demands of the teaching staff in their planning for continuing education.

Furthermore, the study shows that the teaching staff had problems in knowledge transfer, mainly with the assessment of learning in online teaching. It is, therefore, considered that the discrepancy between the training offered by the university (digital tools) and the teaching staff's needs in pedagogical issues caused a transfer problem that should be taken into account for the future.

When investigating the perception of impact of the training received on teaching performance, it is clear that teaching continues to be a solitary task. The training received by teachers does not encourage the creation of networks with other colleagues, which could become a source of support and knowledge.

In short, there is a need for continuous training for university teachers related to virtual teaching. Moreover, this should be related to teaching topics, authentic activities, competency-based assessments, and training that encourages the generation of collaborative networks between teachers.

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References

1. World Health Organization: Coronavirus Disease. 2019. Available online: https://www.who.int/emergencies/diseases/novel-coronavirus-2019 (accessed on 2 August 2021).
2. *Real Decreto 463/2020, de 14 de Marzo, Por el Que se Declara el Estado de Alarma Para la Gestión de la Situación de Crisis Sanitaria Ocasionada por el COVID-19; Boletín Oficial del Estado, 67, de 14 de Marzo de 2020*; Boletín Oficial del Estado: Madrid, Spain, 2020; pp. 25390–25400.
3. del Arco, I.; Flores, Ò.; Ramos-Pla, A. 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]
4. del Arco, I.; Silva, P.; Flores, O. University Teaching in Times of Confinement: The Light and Shadows of Compulsory Online Learning. *Sustainability* **2021**, *13*, 375. [CrossRef]
5. Al Zubayer, H.; Tahmina, S. University teachers' training on online teaching-learning using online platform during COVID-19: A case Study. *Bangladesh Educ. J.* **2019**, *18*, 57–64.
6. Cabero-Almenara, J. Aprendiendo del tiempo de la COVID-19. *Rev. Electrónica Educ.* **2020**, *24*, 1–3. [CrossRef]
7. Suárez Monzón, N. Formación docente universitaria y crisis sanitaria COVID-19. *CienciAmerica* **2020**, *9*, 109–114. [CrossRef]

8. Gómez, E.L. La formación docente del profesorado universitario: Sentido, contenido y modalidades. *Bordón Rev. Pedagog.* **2016**, *68*, 89–102. [CrossRef]
9. Rowland, S.; Byron, C.; Furedi, F.; Padfield, N.; Smyth, T. Turning academics into teachers? *Teach. High. Educ.* **1998**, *3*, 133–141. [CrossRef]
10. Shulman, L.S. Those who understand: Knowledge growth in teaching. *Educ. Res.* **1986**, *15*, 4–14. [CrossRef]
11. Cejas-León, R. La Formación en TIC del Profesorado y su Transferencia a la Función Docente. Tendiendo Puentes Entre Tecnología, Pedagogía y Contenido Disciplinar. Ph.D. Thesis, Autonomous University of Barcelona, Barcelona, Spain, 2018. Available online: https://www.tdx.cat/handle/10803/525864 (accessed on 21 August 2021).
12. Vergara, C.; Cofré, H. Conocimiento Pedagógico del Contenido: ¿el paradigma perdido en la formación inicial y continua de profesores en Chile? *Estud. Pedagógicos* **2014**, *40*, 323–338. [CrossRef]
13. Mishra, P.; Koehler, M.J. Technological Pedagogical Content Knowledge: A Framework for Teacher Knowledge. *Teach. Coll. Rec.* **2006**, *108*, 1017–1054. [CrossRef]
14. Cuartas, M.; Quintero, V. Formación docente en el desarrollo de competencias digitales e informacionales a través del modelo enriquecido Tpack*Cts*Abp. In Proceedings of the Congreso Iberoamericano de Ciencia, Tecnología, Innovación y Educación, Buenos Aires, Argentina, 14 November 2016; Available online: https://es.slideshare.net/maritzacts/784-tpackenriquecid (accessed on 1 September 2021).
15. Cejas-León, R.; Navío-Gámez, A.; Meza-Cano, J. Conexiones entre tecnología, pedagogía y contenido disciplinar (TPACK). La formación en TIC y su transferencia a la función docente. In *Investigación en Docencia Universitaria. Diseñando el Futuro a Partir de la Innovación Educativa*; Roig-Vila, R., Ed.; Octaedro Editorial: Barcelona, Spain, 2017; pp. 114–122.
16. Cejas-León, R.; Gámez, A.N. Formación en TIC del profesorado universitario. Factores que influyen en la transferencia a la función docente. *Profr. Rev. Currículum Form. Profr.* **2018**, *22*, 271–293. [CrossRef]
17. Paricio, J.; Fernández March, A.; Fernández Fernández, I. *Marco de Desarrollo Académico Docente. Un Mapa de la Buena Docencia Universitaria Basado en la Investigación*; REDU, Red de Docencia Universitaria: Bilbao, Spain, 2019.
18. De Ketele, J.M. La formación didáctica y pedagógica de los profesores universitarios: Luces y sombras. *Rev. Educ.* **2003**, *331*, 143–169.
19. Abella, V.; López Nozal, C.; Ortega, N.; Sánchez Ortega, P.L.; Lezcano, F. Implantación de UBUVirtual en la Universidad de Burgos: Evaluación y expectativas de uso. *EDUTEC Rev. Electrónica Tecnol. Educ.* **2011**, *38*, a184. [CrossRef]
20. Tomàs-Folch, M.; Duran-Benlloch, M. Comprendiendo los factores que afectan la transferencia de la formación permanente del profesorado. Propuestas de mejora. *Rev. Electrón. Interuniv. Form. Profr.* **2017**, *20*, 145–157. [CrossRef]
21. Abella, V.; Ausín, V.; Delgado, V.; Hortigüela, D.; Solano, H.J. Determinantes de la calidad, la satisfacción y el aprendizaje percibido de la e-formación del profesorado universitario. *RMIE Rev. Mex. Investig. Educ.* **2018**, *23*, 733–760.
22. Baldwin, T.T.; Ford, J.K. Transfer of training: A review and directions for the future research. *Pers. Psychol.* **1988**, *41*, 63–105. [CrossRef]
23. Buick, F.; Blackman, D.; Johnson, S. Enabling middle managers as change agents: Why organisational support needs to change. *Aust. J. Public Adm.* **2018**, *77*, 222–235. [CrossRef]
24. Monereo, C. La investigación en la formación del profesorado universitario: Hacia una perspectiva integradora. *Infanc. Aprendiz.* **2013**, *36*, 281–291. [CrossRef]
25. Osuna-Acevedo, S.; Marta-Lazo, C.; Frau-Meigs, D. De sMOOC a tMOOC, el aprendizaje hacia la transferencia profesional: El proyecto europeo ECO. *Comunicar* **2018**, *55*, 105–114. [CrossRef]
26. Medina, J.L.; Jarauta, B.; Urquizu, C. Evaluación del impacto de la formación del profesorado universitario novel: Un estudio cualitativo. *RIE Rev. Investig. Educ.* **2005**, *23*, 205–238.
27. Cano García, E. Factores favorecedores y obstaculizadores de la transferencia de la formación del profesorado en Educación Superior. *REICE Rev. Iberoam. Sobre Calid. Efic. Cambio Educ.* **2016**, *14*, 133–150. [CrossRef]
28. Villalobos-Claveria, A.A.; Melo-Hermosilla, Y.M. Narrativas docentes como recursos para la comprensión de la transferencia didáctica del profesor universitario. *Form. Univ.* **2019**, *12*, 121–132. [CrossRef]
29. Okoye, K.; Arrona-Palacios, A.; Camacho-Zuñiga, C.; Hammout, N.; Luttmann, E.; Escamilla, J.; Hosseini, S. Impact of students evaluation of teaching: A text analysis of the teachers qualities by gender. *Int. J. Educ. Technol. High. Educ.* **2020**, *49*, 1–27. [CrossRef]
30. Feixas, M.; Lagos, P.; Fernández, I.; Sabaté, S. Modelos y tendencias n la investigación sobre efectividad, impacto y transferencia de la formación docente en educación superior. *Educar* **2015**, *51*, 81–107. [CrossRef]
31. Llorente, C. Aspectos fundamentales de la formación del profesorado en TIC. *Pixel-Bit Rev. Medios Educ.* **2008**, *31*, 121–130.
32. Flores, Ò.; del Arco, I.; Silva, P. The flipped classroom model at the university: Analysis based on professors' and students' assessment in the educational field. *Int. J. Educ. Technol. High. Educ.* **2016**, *13*, 1. [CrossRef]
33. Pineda, P. *Auditoría de la Formación: Análisis de las Actividades Formativas Para la Mejora de la Realidad Empresarial*; Ediciones Gestión: Barcelona, Spain, 2000.
34. Fullan, M. *The new Meaning of Educational Change*; Teacher College Press: New York, NY, USA, 1991.
35. Gairín, J. La evaluación del impacto en programas de formación. *REICE Rev. Iberoam. Sobre Calid. Efic. Cambio Educ.* **2010**, *8*, 19–43.
36. Ramos-Pla, A. Organizational and informal learning in educational centers. *Rev. Educ.* **2021**, *392*, 215–216.

37. Cohen, J. *Statistical Power Analysis for the Behavioral Sciences*; Lawrence Erlbaum Associates Publishers: New York, NY, USA, 1988.
38. Hinkle, D.E.; Wiersma, W.; Jurs, S.G. *Applied Statistics for the Behavioral Sciences*; Houghton Mifflin: Boston, MA, USA, 2003.
39. Dorrego, E. Educación a Distancia y Evaluación del Aprendizaje. *RED Rev. Educ. Distancia* **2016**, *50*. [CrossRef]
40. Schwartzman, G.; Roni, C.; Berk, M.; Delorenzi, E.; Sánchez, M.; Eder, M.L. Evaluación Remota de Aprendizajes en la Universidad: Decisiones docentes para encarar un nuevo desafío. *RIED Rev. Iberoam. Educ. Distancia* **2021**, *24*, 67–85. [CrossRef]
41. Cabero-Almenara, J.; Palacios-Rodríguez, A. La evaluación de la educación virtual: Las e-actividades. *RIED Rev. Iberoam. Educ. Distancia* **2021**, *24*, 169–188. [CrossRef]
42. Serrano, R. La aflicción de la docencia y el tiempo del enseñante. *Razón Palabra* **2012**, *79*, 1–27.
43. Tomàs-Folch, M.; Castro Ceacero, D.; Feixas Condom, M. Tensiones entre las funciones docente e investigadora del profesorado en la universidad. *REDU Rev. Docencia Univ.* **2012**, *10*, 343–367. [CrossRef]
44. Ramos-Pla, A.; Camats, R. Consideraciones generales respecto a la necesidad de practicar una pedagogía sobre la finitud humana en la educación formal. Estudio de caso. *Educar* **2019**, *55*, 273–290. [CrossRef]
45. del Arco, I.; Flores, Ò.; Guitard, M.L.; Saltó, E.; Ramos-Pla, A.; Massey, W.; Llebaria, X.; Silva, P.; Jover, A.; Barcenilla, F.; et al. En las organizaciones saludables y sostenibles. El empoderamiento individual como nuevo paradigma en la gestión del conocimiento. In *La Nueva Gestión del Conocimiento*, 1st ed.; Gairín, J., Suárez, C.I., Díaz-Vicario, A., Eds.; Wolters Kluwer: Madrid, Spain, 2020; pp. 473–519.
46. del Arco, I.; Ramos-Pla, A.; Flores, Ò. Analysis of the Company of Adults and the Interactions during School Recess: The COVID-19 Effect at Primary Schools. *Sustainability* **2021**, *13*, 10166. [CrossRef]