

## COVID-19 in Education: How University Faculty Perceive the Changes

### *La COVID-19 en el contexto educativo: percepciones de cambio en el profesorado universitario*



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#### Abstract

The article takes a close look at how COVID-19 has impacted university education in Spain, especially since the state of alarm was declared on March 15, 2020. This sudden shift to remote learning brought to light several issues, including technological challenges, increased stress levels, and unequal access to educational resources. The study, conducted through surveys, involved 392 faculty members from the University of Seville and followed a descriptive ex-post-facto design. According to the study, about 69.77% of professors noticed significant changes in their teaching practices. Many had to quickly adapt their methods to fit online formats, which wasn't always an easy task. Despite these hurdles, 81.14% of the faculty did not perceive any changes in their view of the university's social responsibility. This indicates that, even amid the pandemic's challenges, the institution's educational and social missions remained intact. Furthermore, 27.91% of the professors reported a shift in their attitude towards innovation. There was a noticeable increase in their openness to adopting new educational methodologies and technologies. These insights highlight the critical need to address mental health and technological inequalities in future educational planning. Institutions need to implement pedagogical practices tailored to students' needs, ensure access to technology, and foster educational innovation to boost resilience and well-being during crises.

#### Keywords

Academic teaching personnel, distance education, education in emergencies, e-learning, higher education, pandemics, perception, teaching profession.

#### 1. Introduction

The general objective of this article is to analyse the perception of change on the part of the teaching staff of the University of Seville caused by the COVID-19 pandemic, and its first specific objective is to observe whether the teaching staff of the University of Seville consider that changes have occurred in their teaching practices, their attitude towards innovation and their opinion on Social Responsibility after the COVID-19 pandemic. To this end, we will analyse what COVID-19 is, the global context that it has triggered and how this event has impacted on the educational sphere. The key dates in the development of the pandemic and the measures adopted by the government in Spain will be examined. In addition, the changes in the routines of the actors involved in the teaching-learning process and the difficulties they have faced will be evaluated.

Since 2019, the pandemic caused by the SARS-CoV-2 virus has affected all countries worldwide. The World Health Organization (2020) describes COVID-19 as follows:

*COVID-19 is the disease caused by the new coronavirus known as SARS-CoV-2. WHO first became aware of this new virus on 31 December 2019, when it was informed of a cluster of 'viral pneumonia' cases reported in Wuhan, People's Republic of China (WHO, 2020).*

In Spain, a State of Alarm was declared on 15 March 2020, with containment measures implemented. Since then, it was necessary to follow the guidelines of 'social distancing', stay-at-home orders and state restrictions to limit the spread of the virus. This new context impacted the university environment, forcing students and

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faculty to balance health concerns, economic instability, family and work responsibilities from home, as well as social constraints (Shin & Hickey, 2020). This situation generated a high level of distress in participants after the introduction of pandemic-related preventive measures between 25 March and 30 April 2020. Compared to previous epidemiological studies, some rates obtained in this study are significantly elevated (Dragan et al., 2021). In terms of university education, reactions to learning formats showed how many students coped with the abrupt and unexpected change in educational format required by the pandemic (Besser et al., 2020).

### 1.1. Inequalities and difficulties in the classroom caused by COVID-19

The pandemic generated by COVID-19 caused the educational context to be transformed. Both university faculty and students faced formative and psychosocial changes, mental and physical health problems, and numerous difficulties in this transition. Some students also faced difficulties in accessing technology, which led to unequal access to study.

The problem of transition or change in teaching models at all levels of education, and particularly in university education, does not only lie in the use of new tools or methodologies. It is crucial to consider and value mental and physical health, the complexity of personal contexts and the inequalities faced by teachers and students for future planning. Learning difficulties inevitably arose due to changes in the learning environment and prolonged stay at home (Xu et al., 2020). The results of Shin & Hickey's (2020) study revealed various effects of the COVID-19 crisis on participants' educational and personal experiences during the spring semester 2020, highlighting the levels of disruptions, challenges and inaccessibility experienced. Teachers also faced difficulties in distance learning due to the collapse of teaching platforms and internet connection problems, resorting to text messages and social networks to solve these problems (Picón et al., 2020).

Negative experiences and challenges shared by participants included difficulties in maintaining motivation, disruptions in learning, lack of communication and feedback, and insufficient workload adjustment (Shin & Hickey, 2020). Findings from Zhou & Yao's (2020) study showed a 9.1% prevalence of acute stress symptoms (SSA) in teachers, indicating significant levels of SSA during the COVID-19 pandemic. University students also experienced emotional distress on multiple levels, as demonstrated by Tasso et al. (2021). The pandemic was an extremely stressful event for 75% of participants in the Dragan et al. (2021) study, being the strongest predictor of adjustment disorder. Forty-nine per cent reported increased symptoms of adjustment disorder, related to female gender and lack of full-time employment. Students were concerned that they or their loved ones might become seriously ill (Porter-Armstrong et al., 2022) and also experienced academic distress following conversion to remote learning, with a perceived increase in workload and lack of clarity on altered academic parameters. In addition, students reported mental distress related to COVID-19, including interpersonal disengagement, motivational problems and boredom, as well as anxiety, depression and sleep disturbance. A bidirectional relationship was observed between emotional duress and worry about contracting the virus and academic frustrations (Tasso et al., 2021). Women, in particular, shared their problems with motivation, mental, emotional and physical health, and balancing home, work and family obligations during ERT and COVID-19 (Shin & Hickey, 2020). Being female and not being in full-time employment were associated with mental health-related outcomes, indicating high levels of stress in the early phase of the pandemic and underlining the need for continuous monitoring of mental health in the Polish population (Dragan et al., 2021).

In the study by Cáceres-Muñoz et al. (2020), respondents indicated that equal opportunities and educational equity have been affected. A digital divide was observed in variables of age and size of the population in confinement. Children from families with a high or medium-high level of education had high internet speed, their own connectivity and a computer for exclusive use, allowing them to adequately follow virtual learning (Pérez López et al., 2020). However, one in three students felt that they did not have the necessary resources to continue their studies online, even if they had technological devices at home (Rodicio-García et al., 2020). It is therefore crucial to minimise factors that contribute to exclusion and inequalities and maximise students' participation in their learning process. These factors include access to technological means and diverse pedagogical approaches (Carrillo & Flores, 2020). Positive psychology strategies have the potential to improve well-being and learning outcomes, especially among vulnerable students, such as minorities or those with mental health problems (Chu, 2020). Educational inequality becomes social inequality by limiting higher education opportunities for disadvantaged classes (Cáceres-Muñoz et al., 2020).

The second specific objective of this research analyses the personal characteristics of US teaching staff who do consider that changes have taken place in their teaching practices, their attitude to innovation and their

opinion on social responsibility. This objective has been proposed based on the aforementioned studies that refer to the fact that participants perceive this context differently depending on some personal characteristics such as gender or age (Dragan et al., 2021; Pérez López et al., 2020; Shin & Hickey, 2020).

### 1.2. The relevance of psycho-pedagogical changes in pandemic contexts

The COVID-19 pandemic has shown that teaching is fundamental, not only in the transmission of knowledge but also in communication, question resolution and attention to students (Baladrón Pazos et al., 2020). Teachers continue to be essential in guiding student learning, an aspect unchanged during the pandemic (Picón et al., 2020). On the other hand, students noted that the pandemic can serve as a model of the consequences of poor communication, as schools, businesses and medical staff were unprepared for the drastic changes following the rapid spread of the virus (Meyer, 2020). Implementing a systematic focus on resilience helps address the mental health of university students during the pandemic, strengthening their overall well-being (Tasso et al., 2021). During the COVID-19 outbreak, teachers received increased social support, which helped them build positive interpersonal relationships (Zhou & Yao, 2020). Learning to identify and understand emotions during a disaster was helpful for students, who showed greater empathy towards those with unusual behavioural responses (Meyer, 2020).

Returning to traditional methodologies should not be the goal without first deeply examining what COVID-19 has taught about previous learning environments, structural inequities and failures that exacerbated problems during the pandemic (Cairns et al., 2020). In the wake of the health crisis, classrooms can be transformed with the implementation of distance, blended or blended learning as learning alternatives (Picón et al., 2020). There is a need to reflect on new distance learning pedagogical models and the technological context required for their implementation (Baptista et al., 2020). More research is needed on factors that create, maintain and deepen interpersonal relationships at university (Cairns et al., 2020). Various psychological problems, including stress-related disorders, have been experienced during the pandemic, but there is a lack of studies on the prevalence of adjustment disorder in this context (Dragan et al., 2021). In addition, there is a paucity of studies analysing the influence of motivational factors on e-learning and learner engagement (Xu et al., 2020). One of the latest studies attempting to shed light on this issue is the study by León-Cázares et al. (2024); this study states that the adaptability of the educational context during the pandemic caused by COVID-19, as well as the speed of innovation and the growth of ICT in recent years, has had a positive impact on the possibility of implementing a hybrid learning model. This hybrid learning would serve the individual needs of learners through the use of different technologies. This idea is also supported by the study by Sukiman et al. (2022) in which university students report a preference for hybrid learning in a post-COVID-19 context, with online and face-to-face learning complementing each other. The proportion of online and face-to-face learning should depend on the characteristics of the student and the subject, and the educational orientation of the lecturer.

The COVID-19 pandemic has created significant challenges in university education, affecting the mental and physical health of faculty and students (Xu et al., 2020). The transition to remote learning has highlighted the importance of access to technology, revealing inequalities in this regard (Picón et al., 2020). Both groups have experienced acute stress and concerns related to workload and lack of clarity in academic parameters (Tasso et al., 2021; Zhou & Yao, 2020). More research is needed to better understand the effects of online education on student engagement and well-being, and to address mental health needs during crisis situations (Dragan et al., 2021; Xu et al., 2020). In times of challenges such as the pandemic, innovation in teaching practices is crucial. Educational institutions have a social responsibility to adapt pedagogical approaches, prioritising effective communication and ensuring access to technology for students (Carrillo & Flores, 2020). This study aims to observe whether teaching staff at the University of Seville have perceived changes after the pandemic caused by COVID-19 in their teaching practices, their attitude towards innovation and their opinion on social responsibility, thus responding to the first specific objective.

## 2. Methodology

### 2.1. Design and participants

The design employed in this research is a non-experimental design, using the descriptive ex-post-facto method through a survey-type study. In this methodology, a survey-type study comprising three scales has been implemented, the aim of which is to analyse the organisation of teaching practice by university teaching

staff, their opinions on social responsibility at the university and the attitude of university teaching staff to innovation in their teaching (Sotelino et al., 2019). The sampling technique used in this research was accidental or causal non-probability sampling. The study began with a dichotomous response question (Yes/No) to observe whether teachers have perceived that COVID-19 has caused changes in the three variables mentioned above.

This study had a sample of 392 responses from university teaching staff, of which 387 were valid, as 5 participants analysed the data collected in their questionnaires. The personal characteristics of the participants in this study are described below: As for the gender of the participants, there is a predominance of male participants with 56.33%, followed by the female gender (42.89%) and the non-binary gender (0.78%). If we examine the branches of knowledge to which the study participants belong, there is a predominance of teachers from the branch of Social and Legal Sciences with 35.66%, followed by the branch of knowledge of Sciences (19.64%). As in the case of gender and branches of knowledge, the years of teaching experience were analysed. Participants with more than 20 years of university teaching experience predominated (49.61%), followed by teaching staff with between 6 and 20 years of experience (38.50%) and new teaching staff in last place (11.89%).

## 2.2. Instrument

This study is part of a broader research project whose data collection instrument was the Questionnaire on Teaching Practice and Attitudes of University Teachers towards Innovation (CUPAIN, hereafter). This questionnaire was designed and validated by Santos et al. (2017) and subsequently used in the research by Lorenzo et al. (2019). At the end of each of the three thematic blocks into which the CUPAIN is divided, we asked whether university teaching staff at the University of Seville have perceived that the pandemic caused by COVID-19 has produced changes in their teaching practices, their view of the social responsibility of the University of Seville, or their attitude towards innovation.

## 2.3. Procedure

The questionnaire was sent by e-mail to the institutional e-mail addresses of the university teaching staff of the University of Seville, who were able to complete it online in just a few minutes. To facilitate the response to the questionnaire, two versions of the questionnaire were created: one to be answered by computer, and the other to be answered by mobile phones, tablets and any other digital device with internet connection. For this reason, a link to the questionnaire and a QR code were attached to all mails disseminating the questionnaire.

## 2.4. Data analysis

The data from this study were analysed quantitatively using IBM SPSS Statistics 26 software, carrying out descriptive analyses. The descriptive analysis was carried out on the one hand to find out whether there is a generalised perception of change in each of the three variables analysed, and on the other hand to find out the personal characteristics of those participants who did perceive changes.

## 3. Results

This study has investigated the perceptions of university teaching staff at the University of Seville as to whether the COVID-19 pandemic has led to changes in their teaching practices, in their perception of the university's Social Responsibility, or in the willingness to innovate on the part of the teaching staff. Therefore, the general objective of this study is to analyse the perception of change on the part of the teaching staff of the University of Seville caused by the COVID-19 pandemic. Specific objective 1 is to observe whether the teaching staff of the University of Seville consider that changes have occurred in their teaching practices, their attitude towards innovation and their opinion on Social Responsibility following the COVID-19 pandemic. Specific objective 2 is to analyse the personal characteristics of the teaching staff of the University of Seville who do consider that changes have occurred in their teaching practices, their attitude towards innovation and their opinion on Social Responsibility following the COVID-19 pandemic. To facilitate the presentation of the data analysed, these two objectives have been combined and subdivided into three sections that coincide with the general themes of the three questionnaires that make up the CUPAIN.

### 3.1. Teaching practices

Figure 1 shows that 69.77% of university teaching staff at the University of Seville perceive that there has been a change in their teaching practices, while 30.23% do not consider that there has been any change.

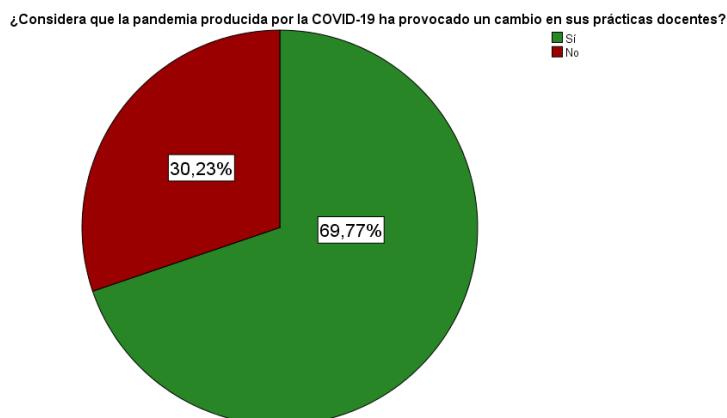


Figure 1. Perception of Change in Teaching Practices after COVID-19

The following tables present the personal characteristics of teachers who consider that the COVID-19 pandemic has led to changes in their teaching practices. The trend in the perception of change in teaching practices will be analysed according to several variables: branches of knowledge, years of university teaching experience and gender.

With regard to the gender with which the teachers identify themselves, table 1 shows a slight increase in the percentage of women who consider that there has been a change in their teaching practices, compared with the percentage of women in the total sample (42.89%). Table 2 shows a slight increase in the percentage of teachers with between 6 and 20 years of teaching experience (42.2%) compared to the percentage of this group in the total sample (38.01%). Table 3 also shows a small increase in the branches of knowledge of Sciences (21.1%) and Health Sciences (19.3%), compared to the overall percentages of 19.39% and 16.84%, respectively.

**Table 1**

Participants who perceive change in their teaching practices. Characteristic: gender.

#### Gender with which you identify

		Frequency	Percentage	Valid percentage	Cumulative percentage
Valid	Woman	128	47,4	47,4	47,4
	Man	140	51,9	51,9	99,3
	Non-binary	2	,7	,7	100,0
	Total	270	100,0	100,0	

**Table 2**

Participants who perceive a change in their teaching practices. Characteristic: years of teaching experience.

#### Years of university teaching experience

		Frequency	Percentage	Valid percentage	Cumulative percentage
Valid	Less than 5 years	25	9,3	9,3	9,3
	Between 6 and 20 years	114	42,2	42,2	51,5

More than 20 years	131	48,5	48,5	100,0
Total	270	100,0	100,0	

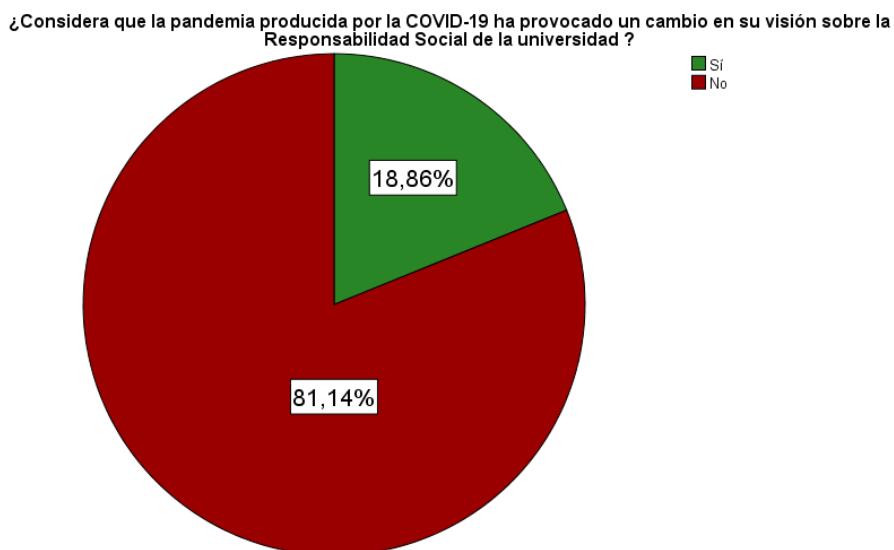
**Table 3***Participants who perceive a change in their teaching practices. Characteristic: branch of knowledge***Indicate the branch of knowledge you belong to**

Valid		Frequency	Percentage	Valid percentage	Cumulative percentage
	Science	57	21,1	21,1	21,1
	Health Sciences	52	19,3	19,3	40,4
	Social and Legal Sciences	93	34,4	34,4	74,8
	Arts and Humanities	32	11,9	11,9	86,7
	Engineering and Architecture	36	13,3	13,3	100,0
	Total	270	100,0	100,0	

After analysing the data presented, it is concluded that there is a tendency to perceive changes in teaching practices due to COVID-19, mainly among female participants, with a university teaching experience of between 6 and 20 years, and belonging to the branches of knowledge of Sciences and Health Sciences.

### 3.2. Social Responsibility

Figure 2 clearly shows that the majority of university teaching staff (81.14%) are of the opinion that the COVID-19 pandemic has not generated any change in their perception of the Social Responsibility of the University of Seville, in contrast to a minority (18.86%) who do consider that there has been a change.

**Figure 2: Perception of change on Social Accountability after COVID-19**

The following tables present the personal characteristics of the lecturers who consider that the COVID-19 pandemic has led to changes in their view of the university's Social Responsibility. Table 4 shows a significant increase in the percentage of women and non-binary gender participants who perceived a change in their views on Social Responsibility (58.9% and 1.4%, respectively) compared to the total percentage of women and non-binary gender participants in the study (42.89% and 0.78%, respectively). Furthermore, Table 5 shows an increase in the percentage of participants with between 6 and 20 years of university teaching experience

who perceive changes due to COVID-19 (47.9%) compared to the total percentage of this group in the sample (38.01%). Finally, table 6 shows a decrease in the percentage of participants from the Arts and Humanities branch of knowledge, from 13.78% of the total sample to 9.06% of those who perceived a change.

**Table 4**  
*Participants who perceive change in Social Responsibility. Characteristic: gender.*

**Gender with which you identify**

		Frequency	Percentage	Valid percentage	Cumulative percentage
Valid	Woman	43	58,9	58,9	58,9
	Man	29	39,7	39,7	98,6
	Non-binary	1	1,4	1,4	100,0
	Total	73	100,0	100,0	

**Table 5**  
*Participants who perceive change in Social Responsibility. Characteristic: years of teaching experience.*

**Years of university teaching experience**

		Frequency	Percentage	Valid percentage	Cumulative percentage
Valid	Less than 5 years	8	11,0	11,0	11,0
	Between 6 and 20 years	35	47,9	47,9	58,9
	More than 20 years	30	41,1	41,1	100,0
	Total	73	100,0	100,0	

**Table 6**  
*Participants who perceive change in Social Responsibility. Characteristic: branch of knowledge.*

**Indicate the branch of knowledge you belong to**

		Frequency	Percentage	Valid percentage	Cumulative percentage
Valid	Science	16	21,9	21,9	21,9
	Health Sciences	14	19,2	19,2	41,1
	Social and Legal Sciences	26	35,6	35,6	76,7
	Arts and Humanities	7	9,6	9,6	86,3
	Engineering and Architecture	10	13,7	13,7	100,0
	Total	73	100,0	100,0	

After analysing the data of participants who have perceived a change in their vision of Social Responsibility at the University of Seville, it is concluded that there is a trend among female and non-binary gender participants, between 6 and 20 years of university teaching experience, to perceive changes. On the contrary, there is a tendency to not perceive changes in their vision of the Social Responsibility of the University of Seville caused by COVID-19 among participants belonging to the branch of knowledge of Arts and Humanities.

### 3.3. Innovation

In Figure 3, it can be seen that, in general terms, 72.09% of teachers do not perceive a change in their attitude towards innovation after the pandemic caused by COVID-19, while 27.91% do believe that there has been a change.

¿Considera que la pandemia producida por la COVID-19 ha provocado un cambio en su actitud ante la innovación?

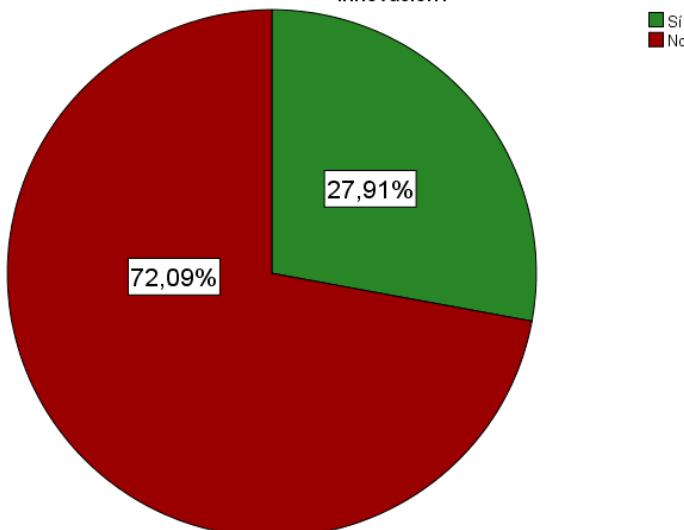


Figure 3: Perception of change regarding Innovation after COVID-19

The personal characteristics of the teachers who perceived changes in their attitude towards innovation during the COVID-19 pandemic can be seen in the following tables. In table 7, there is a significant increase in the percentage of women who perceived a change in their attitude towards innovation, with 51.9% compared to 42.89% of women in the total sample. On the other hand, table 8 shows that a higher percentage of participants with between 6 and 20 years of teaching experience have perceived the change, with 45.4% compared to 38.01% of the total study participants. Finally, table 9 indicates that a higher percentage of participants from the Social Sciences and Law branch perceived a change in their attitude towards innovation, with 42.6% compared to 35.20% of the total participants in the study.

**Table 7**  
Participants perceiving a change in Innovation. Characteristic: Gender.

Gender with which you identify

		Frequency	Percentage	Valid percentage	Cumulative percentage
Valid	Woman	56	51,9	51,9	51,9
	Man	51	47,2	47,2	99,1
	Non-binary	1	,9	,9	100,0
	Total	108	100,0	100,0	

**Table 8**  
Participants perceiving a change in Innovation. Characteristic: years of teaching experience.

Years of university teaching experience

		Frequency	Percentage	Valid percentage	Cumulative percentage
Valid	Less than 5 years	12	11,1	11,1	11,1
	Between 6 and 20 years	49	45,4	45,4	56,5
	More than 20 years	47	43,5	43,5	100,0

Total	108	100,0	100,0
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**Table 9**

*Participants perceiving a change in Innovation. Characteristic: branch of knowledge.*

Indicate the branch of knowledge you belong to

		Frequency	Percentage	Valid percentage	Cumulative percentage
Valid	Science	20	18,5	18,5	18,5
	Health Sciences	18	16,7	16,7	35,2
	Social and Legal Sciences	46	42,6	42,6	77,8
	Arts and Humanities	9	8,3	8,3	86,1
	Engineering and Architecture	15	13,9	13,9	100,0
	Total	108	100,0	100,0	

After analysing the data of the teachers who did perceive a change in their attitude towards innovation due to the COVID-19 pandemic, it can be concluded that there is a tendency among female participants, teachers with between 6 and 20 years of university experience, and those belonging to the Social and Legal Sciences branch, to perceive this change in attitude. Female participants perceived this change in attitude to a greater extent compared to the total percentage of women in the sample. Likewise, teachers with between 6 and 20 years of university teaching experience reported a higher proportion of perceiving this change, compared to the total percentage of this group in the study. Finally, participants belonging to the branch of knowledge of Social and Legal Sciences have shown an increase in the percentage of those who perceived a change in their innovative attitude, in relation to the total percentage of this group. In summary, the personal characteristics that seem to be associated with a greater perception of changes in the innovative attitude during the pandemic are: being a woman, having between 6-20 years of teaching experience, and belonging to the area of Social and Legal Sciences.

#### 4. Discussion

There is no doubt that the COVID-19 pandemic has created an exceptional context that has radically transformed our classrooms. There are studies prior to COVID-19 that looked at how university faculty experience challenges in their professional context, such as Korhonen & Törmä (2016). In the aftermath of the COVID-19 pandemic, we find studies claiming that the quality of teaching was impaired because of COVID-19 (Besser et al., 2020; Garris & Fleck, 2022), and that there had been COVID-19-induced changes in university faculty identities (Besser et al., 2020; Cáceres-Muñoz et al., 2020a; Cairns et al., 2020; Carrillo & Flores, 2020; Dragan et al., 2021; Pérez López et al., 2020; Teng & Wu, 2021; Xu et al., 2020; Zhou & Yao, 2020). In this scenario, the relevance of combining educational innovation, social responsibility and teaching practices in our universities stands out, a demand that has been raised for several decades (Chupp & Joseph, 2010; Pessate-Schubert et al., 2006; Ralston & Ellis, 1997; Santos Rego et al., 2017; Southcombe et al., 2015).

The aim of this study is to analyse how the influence of the pandemic context has been perceived in these variables. In the results section, Figure 1 reveals that 69.77% of university teaching staff at the University of Seville recognise changes in their teaching practices, while the remaining 30.23% do not perceive any change. These findings contrast with the study by Weise & Sánchez-Busqués (2013), who argued that critical incidents in the classroom did not generate changes in teaching practices. However, our results are consistent with numerous studies that indicate that the COVID-19 pandemic has led to transformations in university teaching practices (Baladrón Pazos et al., 2020; Baptista et al., 2020; Besser et al., 2020; Cáceres-Muñoz et al., 2020; Cairns et al., 2020; Pérez López et al., 2020).

On the other hand, Figure 2 shows that the vast majority of university faculty (81.14%) consider that the COVID-19 pandemic has not altered their view of Social Responsibility at the University of Seville, in contrast to 18.86% who do perceive a change. These results differ from Shin & Hickey's study (2020), which stated

that ethical values and social responsibility gained relevance during and after the emergency remote teaching experiences during the COVID-19 quarantine.

Figure 3 shows that a majority (72.09%) of teachers do not perceive a change in their attitude towards innovation after the COVID-19 pandemic, compared to 27.91% who do. These results do not coincide with previous studies on the change in teachers' attitudes towards innovation after the pandemic (García-Peña et al., 2020; Martínez-Garcés & Garcés-Fuenmayor, 2020; Picón et al., 2020) or with studies indicating that the pandemic context has boosted educational innovations and the use of ICTs in university pedagogies (Baptista et al., 2020; Cairns et al., 2020; Meyer, 2020).

## 5. Conclusions

Analysing the results obtained on the perception of changes brought about by COVID-19, it can be concluded that there is a clear trend in the study participants who have perceived changes in their Teaching Practices, their vision of the university's Social Responsibility and their attitude towards innovation. With regard to the Teaching Practices, it has been observed that the participants who perceived changes are mostly women, with university teaching experience of between 6 and 20 years, and belonging to the branches of Science and Health Sciences. On the other hand, the characteristics of the participants who noticed changes in Social Responsibility include women and people of non-binary gender, with similar university teaching experience, but who do not belong to the branch of Arts and Humanities. In terms of attitude towards innovation, the participants who perceived changes are predominantly women, with a university teaching experience of between 6 and 20 years, and belonging to the branch of Social Sciences and Law.

As a general overview, it can be affirmed that women with teaching experience of between 6 and 20 years are those who have perceived the most changes in their work context due to COVID-19. However, it is important to consider that the majority of the participants in the study did not perceive changes in their vision of the university's Social Responsibility or in their attitude towards innovation, as shown in Figures 2 and 3. The main limitation faced by this study was the scarce literature that still exists on COVID-19 and its repercussions in the university environment, as it is still a recent development. In this sense, a future line of research for this study would be to qualitatively analyse the response of the participants who did perceive a change after COVID-19, in order to find out what these perceived changes have been.

### CRediT

**Diana López-Maldonado:** Conceptualisation, Data collection and management (data curation), Formal analysis, Validation, Research, Methodology, Writing the original draft. **Alfonso Javier García González:** Acquisition of funding, Project management, Resources, Software, Supervision, Visualisation, Writing (revision and editing).

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