

# Education in times of pandemic: reflections of students and teachers on virtual university education in Spain, Italy, and Ecuador

Educación en tiempos de pandemia: reflexiones de alumnos y profesores sobre la enseñanza virtual universitaria en España, Italia y Ecuador

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## ABSTRACT

**Introduction.** This research carried out a comparative study between three countries severely impacted by the coronavirus based on the analysis of the reflections of teachers and students on university virtual teaching during the confinement stage. **Methodology.** This descriptive, exploratory and explanatory study applied surveys, between March and April 2020, to students and teachers of Journalism, Communication and Education at the Autonomous University of Barcelona (Spain), University of Turin (Italy), and Technical University of Machala (Ecuador). The survey had responses from 300 students (100 per country) and 196 teachers. **Results.** The majority of students negatively value the move to virtuality, since it is associated, regularly, with an increase in the teaching load. E-learning has contributed to negatively impacting the view of students on their trainers, while the latter demands basic digital skills in young university students. **Discussion.** According to the research results, teachers, in the scenario of remote training, must show knowledge not only about the content of the subject but also technological and digital-pedagogical knowledge. **Conclusions.** The teacher must be able to innovate, reflect and transform their didactic proposals to

respond to the social demands that the world is experiencing during a health crisis while achieving the curricular objectives proposed at the beginning of the course. On the other hand, the surveyed teachers recognize that it is necessary to promote critical and reflective thinking linked to the strategic management of ICT.

**KEYWORDS:** Educational technology; Higher Education; public education; educational process; student adaptation; distance education; virtual learning.

## RESUMEN

**Introducción.** Esta investigación realizó un estudio comparativo entre tres países muy impactados por el coronavirus a partir del análisis de las reflexiones de docentes y estudiantes sobre la enseñanza virtual universitaria durante la etapa de confinamiento. **Metodología.** El estudio, de carácter descriptivo, exploratorio y explicativo, aplicó encuestas, entre marzo y abril de 2020, a estudiantes y docentes de Periodismo, Comunicación y Educación de la Universidad Autónoma de Barcelona (España), Universidad de Torino (Italia) y Universidad Técnica de Machala (Ecuador). La encuesta tuvo respuestas de 300 estudiantes (100 por país) y 196 docentes. **Resultados.** Los estudiantes, de forma mayoritaria, valoran negativamente el paso a la virtualidad, pues este se asocia, de forma recurrente, con un incremento de la carga lectiva. La teleformación ha contribuido a impactar negativamente en la visión del alumnado sobre sus formadores, mientras que en estos últimos demandan competencias digitales básicas en los jóvenes universitarios. **Discusión.** Según los hallazgos obtenidos, los docentes, en el escenario de la teleformación, deben mostrar conocimientos no solo sobre el contenido de la materia, sino también conocimiento tecnológico y pedagógico-digital. **Conclusiones.** El docente tiene que ser capaz de innovar, reflexionar y transformar sus propuestas didácticas para responder a las demandas sociales que vive el mundo en medio de una crisis sanitaria, a la vez que se alcancen los objetivos curriculares propuestos al inicio del curso. Por otro lado, los docentes encuestados reconocen que es necesario la promoción del pensamiento crítico y reflexivo vinculado a la gestión estratégica de las TIC.

**PALABRAS CLAVE:** Tecnología educativa; Educación Superior; educación pública; proceso educativo; adaptación estudiantil; educación a distancia, aprendizaje virtual.

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Translation by **Paula González** (Universidad Católica Andrés Bello, Venezuela)

## 1. Introduction

In recent times, societies have changed precipitously. In fact, theorists like Harnad (1991) consider that the history of humanity is dependent on technological evolution, which has led to radical changes in the organization of knowledge and human cognition. In this context, Internet access has made it possible to raise the quality of life and prosperity of a country (Olivares Carmona et al., 2018). Therefore, it is noted that its use is essential to promote communication, learning, and culture, encouraging citizens to be better prepared and more competitive (Vera, Torres, and Martínez, 2014). As a result of the globalization process, accessibility, interactivity, and flexibility of Information and Communication Technologies (ICT) have led to greater use of the internet, social networks, and video games, changing our way of working, thinking, and making decisions. (Garrote, Jiménez, and Serna, 2018). This has had an impact on the role and core characteristics of educational institutions

(López Catalán et al., 2018). As a result, education has been radically affected by the emergence of digital culture, causing the urgent need to innovate (Freire, 2009).

In this scenario, universities must offer a Higher Education that trains highly competent subjects to face the complex challenges of science, economics, and social relations (Area, 2010). This justifies why ICTs are acquiring a strong role in new training contexts (Cabero Almenara, 2014) since the school should not be oblivious to the transformations that ICTs are causing and must adapt to emerging ways of learning from the centennial generations (Pérez-Escoda, Castro-Zubizarreta, and Fandos-Igado, 2016).

As analyzed, technological changes have led to an increase in opportunities in the area of e-learning training, where new models, methodologies, resources, and practices have given rise to various trends identified in the literature, such as the use of the virtual classroom (LMS), MOOC courses, Open Course Ware (OCW), open courses, institutional repositories, mobile learning, gamification, social media, and augmented reality (Bozkur et al., 2015; Davies et al., 2010).

E-learning is then presented as a generalized training strategy to face various educational problems and the demands for continuous improvement of the Knowledge Society, given its economic savings, time management, and interactivity component (Martínez-Caro, 2008). In a complementary way, authors such as Aguaded and Díaz (2009) emphasize five uses that the Internet can have in the university context, such as: 1) institutional presence in new spaces of social communication, 2) management of administrative issues through the network, 3) use of telematic resources for research purposes, 4) virtual access to bibliographic funds, and 5) space for teaching supported by computer networks, for educational purposes.

For tele-training to work, it is essential to know in advance the beliefs that teachers have regarding the role that ICT can play in teaching (Chen 2008; Teo, 2008), since the low digital literacy of teachers makes the technical-didactic use of ICTs difficult (Valdés et al., 2010; Ballesteros et al., 2010). Along these lines, Hammond et al. (2009) warn that teacher training in ICT is a determining element in their teaching practice. However, the research of Valerio and Paredes (2008) and Goktas et al. (2008) show that teachers are trained in instrumental management of ICT and not in a socio-constructive use of educational technology.

COVID-19 has shown the urgent transformation demanded by traditional educational systems and the importance of having a virtual educational strategy, as well as a student body and a faculty with skills and competencies for teaching and learning in cyberspace. The irruption of this planetary virus has shown the demands of a pandemic on educational institutions: flexibility, platforms, methodologies, and content adapted to training exchanges mediated by screens. In this sense, this research develops a comparative study between three countries highly impacted by the coronavirus from the analysis of the reflections of teachers and students on virtual university education during the confinement stage.

## 2. Theoretical Framework

Although it is a health crisis, the public university has also suffered the consequences of the global pandemic of COVID-19. In this sense, it has had to face a sudden change, moving from presence to non-presence. This technology-mediated education has requested an express learning effort for many teachers (Cáceres-Muñoz, Jiménez Hernández, and Martín-Sánchez, 2020). As a result, the contexts

mediated by access to distance education, through digital technologies, have been uneven; in particular, for the most vulnerable social groups (Cervantes Holguín and Gutiérrez Sandoval, 2020).

In this scenario, educational administrations must ensure that all students have access to it and under the same conditions (Bekerman and Rondanini, 2020; Cotino Hueso, 2020), since the emphasis has been placed on the transformation of educational culture for a digital educational culture in which not all have the same possibilities (Beltrán and Venegas et al., 2020). Indeed, this remote presence has ceased to consider the particularities and accessibility conditions to guarantee inclusion, equity, and university education quality (Fontana-Hernández, Herrera-Sibaja, Leiva-Durán, Montero-Cascante, 2020). As a consequence, the prospects of an indeterminate future are a thought that a large part of the student population has had to live with during this time (Cao et al., 2020).

The suspension of face-to-face teaching activities to make way for virtualization has meant that teachers and students have high pressure, both in their work and in adapting to the new scenario. Besides, the transition to this online teaching has been abrupt, ignoring the long training processes, redesign of subjects, and infrastructures that support the demand for tele-teaching (González-Calvo, Barba-Martín, Bores-García, Gallego-Lema, 2020). In fact, in several Latin American countries, COVID-19 negatively influenced the teaching-learning process, because for many years there was no investment in the adaptation of virtual campuses, institutional websites, digital scientific journals, and in the training of teachers and students in the management of ICTs, having to improvise technological solutions (Ríos Campos, 2020).

For their part, students in rural areas have not been able to keep up with this virtual teaching model, since Internet access in their homes is limited and the telephone signal is poor (Carla Silva, Ramos Silva, and Montanari, 2020). Another report reveals that even when families have a cellphone, the insufficiency situation remains since several students inside the house demand the use of cellphones, which makes it impossible for all to meet their academic commitments (Aquino et al., 2020; Correa Filho & Segall-Corrêa, 2020). Furthermore, remote education in rural areas faces the structural problem of the home, where students do not have an adequate environment to study (Tarcízio, 2020; Tenente, 2020).

This transition towards a new teaching-learning paradigm has made the inequalities in educational development under the current conditions of pandemic crisis visible, with cooperation with institutions, companies, and NGOs being the answer to support educational institutions that lack capacities, resources, and means to successfully carry out distance education (Quevedo Ramírez, 2020). And it is that education mediated by technologies in times of COVID-19 should not only focus on academic studies but on taking care of the student who faces the fragility of life and putting the being as the center of all human activity (Monasterio and Briceño, 2020).

Faced with this situation of educational exceptionality, the teacher must be a support, a promoter of resilience, an academic guide, a cheerleader, an emotional advisor, and a guarantor of institutional organization and coherence (Villafuerte et al., 2020). In this regard, the attacks of COVID-19 have redefined new lines of educational action where the actions of teachers have privileged the teaching of knowledge that represents a valuable contribution to daily life, without neglecting empathic understanding with the student. (Morales, 2020). For Herrera, Tusa, and Maza (2019), it is not about the student adapting and integrating, but rather that the university bets on them and does everything necessary to ensure that they have a quality education.

COVID-19 invites a pedagogical review and the restructuring of the training-offer in Higher Education. Furthermore, many institutions have embarked on the path towards a content renewal that

favors both quality and equity (Pedró, 2020). The pandemic is then presented as an opportunity to reflect, together with the students, about our role in times of crisis as people, as citizens, and as professionals (Millán, Heresi, Díaz, Weisstaub, and Vargas, 2020).

The pandemic crisis, transferred to the educational field, shows the profound changes required by the training programs and the competencies that the professionals of the future demand. Quality education is more necessary than ever for the promotion of a new generation of graduates to face the multiple challenges of the 21<sup>st</sup> century, young people who work towards a more equitable distribution of well-being and make society more livable and peaceful, not only for a few but for all (Feyen, 2020).

### 3. Objectives

Analyze the perception of the students and the teaching body of the bachelor's degrees in Communication, Journalism, and Education of public universities in Ecuador (Technical University of Machala), Italy (University of Turin), and Spain (Autonomous University of Barcelona) about virtual teaching during the health crisis of COVID-19, through an online survey applied between March and April 2020.

### 4. Methodology

This descriptive, exploratory, and explanatory research applied a comparative study between Spain, Italy, and Ecuador on the virtual teaching imposed during the coronavirus crisis. The methodological proposal was designed from an exploratory perspective (Vilches, 2011) and applied the survey instrument, aimed at students and professors of Journalism, Communication, and Education in the three selected countries. The survey had responses from 300 students (100 per country) and 196 teachers. The surveys were conducted between March and April 2020.

The invited sample, conceived as the set of elements of the population that are asked to participate in the research (Del Rincón, Arnal, Latorre, and Sans, 1995), corresponds to students and teachers, establishing a simple random sample. As Colás et al. (2013) point out, the study considered the online survey as the optimal methodological mechanism to collect information, and it was addressed to students of different age groups (between 18 and 28 years old), being 21 years old, with 37.6%, the most numerous in the total sample. The percentage analyzed is considered significant within the universe and, in this sense, the sample allows us to infer precise results.

In Spain, the participation has been 71.3% of women and 28.7% of men, whose ages range from 18 to 23 years old. In Italy, the participation has been 84.37% of women and 16% of men, whose ages range between 16 and 30 years old, concentrating mainly on ages between 19 and 27 years old. In the case of Ecuador, 64.4% of women and 35.6% of men participated, aged between 18 and 28 years old. Regarding the teachers consulted, the survey was directed to 196 university professors, of whom 23% are doctors, 50.5% have a master's degree, 13% are graduates, and 13.5% have another type of study.

The research has been based on a discretionary sampling or intentional sampling in the selection of the three participating universities. In this type of sampling, the subjects subjected to analysis and study are chosen by the researcher to be part of the sample with a specific objective (Vilches, 2011) as they are considered adequate or suitable for the research. Three universities have been chosen

from socio-geographical settings that have received a strong impact from the COVID-19 virus, generating a very high number of affected and deceased within their territorial environment. In this regard, the universities that make up the study are the following:

- Autonomous University of Barcelona (Spain): It is considered one of the best European universities (in research and teaching), according to the majority of European university academic directories. On November 26<sup>th</sup>, 2009, the AUB was recognized as a Campus of International Excellence. It has 37,166 students and 3,262 teachers. The AUB offers 77 undergraduate degrees, 328 postgraduate programs, and 90 doctoral programs. The study has had the participation of students of the Journalism degree.
- University of Turin (Italy). It is a public university, founded in 1404, which is among the oldest in Europe. The study has had the participation of students in the Education degree.
- Technical University of Machala (Ecuador): It is an Institution of Higher Education, of a public nature, located in the province of El Oro, in the south of the country. Despite being in an area of border vulnerability, it has been accredited in category B as a university of excellence. It has five faculties and about 13,000 students are enrolled in its academic offer, both undergraduate and graduate. The study has had the participation of students of the Journalism degree.

The study adopted a hybrid work methodology based on a matrix survey made up of quantitative issues and open questions to also enable qualitative work. The survey has been designed with closed questions of exclusive nominal scales and has been based on a simple random sampling without replacement.

The statistical analysis used on the survey has been a descriptive analysis based on frequencies and percentages. The total responses of each country, different in each case, have been equated in percentages with a comparative intention that has allowed a final crossover between the three selected countries. Besides, the methodological proposal includes closed dichotomous questions for the more defined topics about the use, the evaluation of the platforms, and the impact of social networks on daily and professional performance. It has been considered pertinent to incorporate categorized questions (offering the respondent a series of lists of possible activities to develop in a social network or different names of on-line dialogic platforms) and, in this way, questions of identification, intention, information, and opinion have been combined.

The main variables of the questionnaires were: a) Balance of virtual teaching during the confinement stage; b) Assessment of the activities and content provided, and c) Analysis of the role of teachers. This instrument was validated by a panel of experts (n=6) in communication and education before it was implemented. Subsequently, an electronic version of the survey was carried out and sent to three communication faculties, one for each country. Both the users and the participating trainers were informed of the study and their consent was requested to participate in it. With the surveys, an exploratory motivational analysis was drawn from different work fields:

- For students: data on age, country, and gender; a balance of the virtual teaching period during confinement and assessment of the contents, work dynamics, skills of the teaching team, and information received from the university.
- For teachers: knowledge of the characteristics of virtual teaching, mastery of dialogic platforms, and the guidelines for creating content for cyberspace.

In both surveys, closed questions of exclusive nominal scales were used for data collection (mostly from the use of the Likert scale with a degree of response, where 1 means totally disagree and 4 totally agree) and also different open questions. Dichotomous closed questions were included for the

more defined topics on the type of internet use and knowledge of aspects related to safe browsing. Besides, it was considered pertinent to incorporate categorized questions (offering the respondent a series of lists of possible options) and, in this way, questions of identification, intention, information, and opinion were combined. The open answers, which made free writing possible, allowed to know the degree of mastery of certain topics, as well as the users' and trainers' ability to explain them.

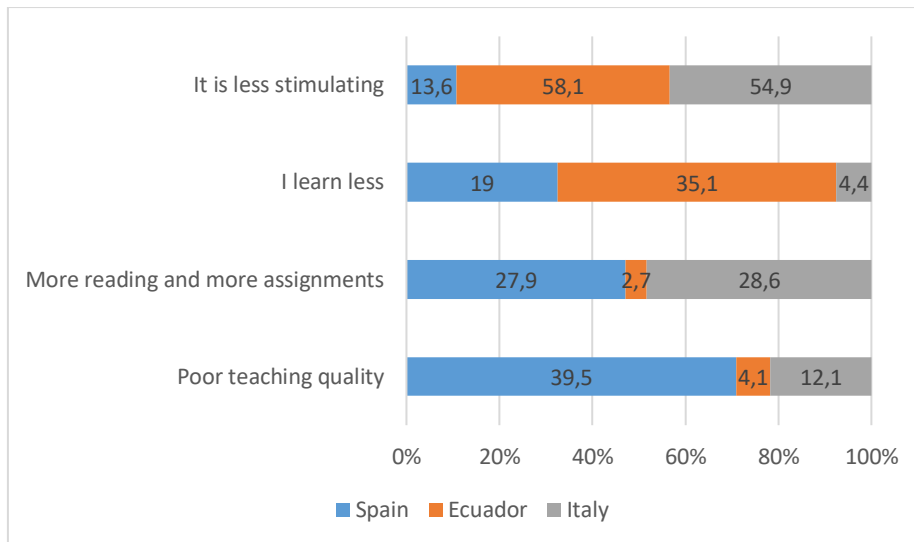
The statistical analysis used in the surveys was descriptive, based on frequencies and percentages, whose responses were matched in percentages with a comparative intention. The internal consistency of the test presented high reliability with a Cronbach's Alpha of 0.943, confirming the measurement of the construct of multiple intercorrelated factors. According to George and Mallery (2003), when the Alpha coefficient is  $>.90$ , we can say that the reliability of the instrument is excellent and if it is  $>.80$  we will say that it is good. The questionnaire was sent through the Google Form application.

## 5. Results

The transition from face-to-face to virtuality has been considered by the majority of students as a negative change. In Spain (93%), Ecuador (83.3%), and Italy (64.8%), students consider that the change has harmed them. The assessment of the change from face-to-face to virtual teaching offers very similar results between teachers who think that it has benefited them (37.8%) and those who argue that it has harmed them (35.7%); while 26.5% value said change as an indifferent modification.

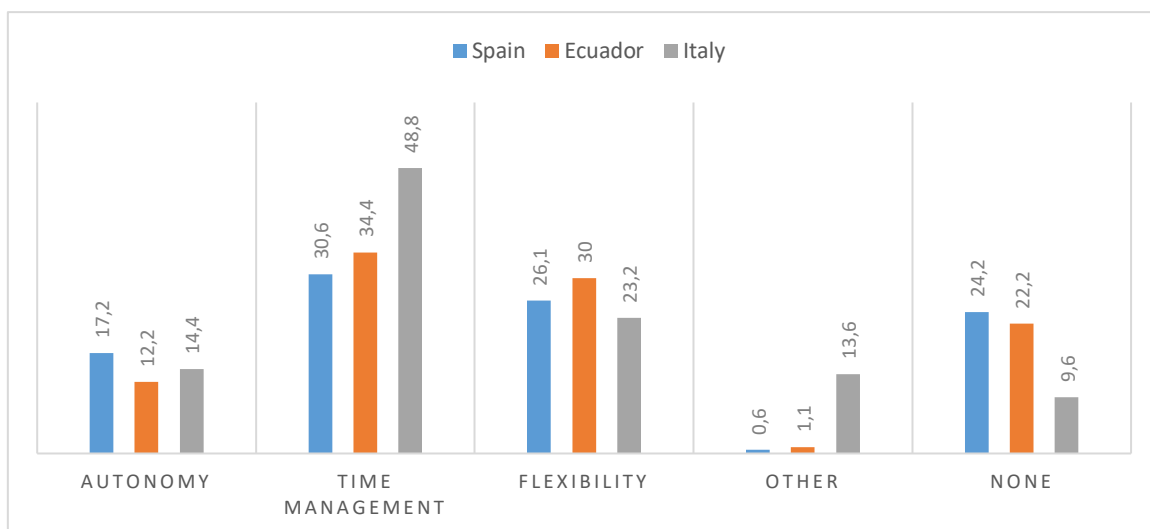
This first piece of information invites deep reflection within educational institutions. The reasons for this prejudice vary from country to country (see graph 1). In the case of Spain, students allude to the poorer quality of teaching in 39.5% of the cases, to the great number of readings and work in 27.9%, and to the feeling that they are learning less in 19%. 13% consider that the virtual environment is less stimulating. In the case of Ecuador, however, 58.1% identify loss of motivation as the main negative element, followed by the feeling of learning less (in 35.1%). Allusions to poorer teaching quality, with 4.1%, and to a greater number of readings and papers, with 2.7%, are very specific elements. Finally, in the case of Italy, the lack of stimulus occupies the list of prejudice obtained in the change of study modality with 54.9%, followed by the greater number of works and readings with 28.6%, and poorer teaching quality with 12.1%.

In this sense, except for the coincidence between the Ecuadorian and Italian students regarding the lack of stimuli, important differences are perceived between the three analyzed realities. For their part, among the teachers, of those who consider that the change from face-to-face to virtuality has harmed them, 38.7% indicate that the main problem has been the increase in work; while 32.3% consider that this new scenario is less stimulating. Besides, 24.7% believe that students learn less in this modality, and 4.3% indicate that the quality of teaching worsens when they move to virtuality.



**Graph 1.** *Reasons for prejudice for students of virtual teaching.*  
**Source:** Self-made.

The positive elements that the students indicate about the change in teaching (from face-to-face to virtuality) highlights the possibility of managing their own time and flexibility (see graph 2). In Spain, time management (with 30.6%), flexibility (26.1%), and autonomy (17.2%) are the elements that students consider the most positive in the change in the educational scenario. In Ecuador, time management occupies the first position (34.4%), but it is striking that 22.2% think that there is no positive element in this change. Autonomy (with 12.2%) ranks third. In the Italian case, time management is also the main positive element (with 48.8%), followed by flexibility (23.2%), and autonomy (14.4%). For teachers, the possibility of managing time (40.3%) is the main positive contribution. Next, 23.5% value flexibility and 15.8% refer to autonomy. For its part, the greater number of tasks is the element that they judge as the main negative element in 39.3% of the cases.



**Graph 2.** *Positive elements of the change in teaching (from face-to-face to virtual).*  
**Source:** Self-made.

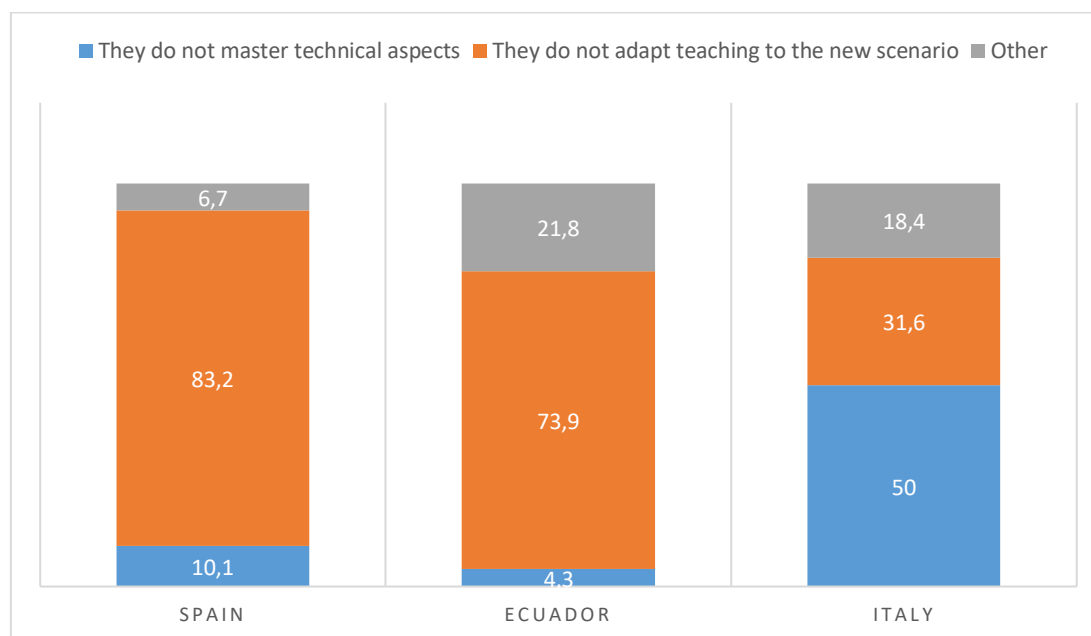
Teachers have played a leading role in the transition from classrooms to virtual education. However, in many cases, this transit has been carried out in a rush. It is striking that both in Ecuador (76.7%)



and in Italy (74.6%), students consider that their respective teachers have the necessary skills to design virtual teaching.

Only in the case of Spain (with 24.8%) students consider that this requirement does not exist. Added to the above are the deficiencies that students identify in their teachers to address the challenge of virtual teaching imposed by the COVID-19 pandemic (see graph 3). In the Spanish case, the main deficiencies are, in this order: the lack of adaptation of teaching to the new scenario (83.2%), the limited mastery of technical aspects (10.1%), and other aspects (6.7%), such as 'unjustified activities' or the feeling of doing 'useless things' for their education.

For their part, for Ecuadorian students, lack of adaptation is the main problem with 73.9%. It is followed by other aspects such as the large number of doubts related to assignments and exercises (8.6%), the unexpected nature of the change of scenery (4.3%), the lack of attention (4.3%), or the "bad teachers" who continue to be so in virtuality (4.3%). Finally, in the Italian case, the lack of mastery of technical aspects is the main problem (with 50%), followed by the lack of adaptation of teaching (31.6%), and other aspects (18.4%) such as permanent improvisation. These data collide with the reflections of teachers who, in 91.8% of the cases, claim to have the necessary skills to face virtual teaching with solvency.



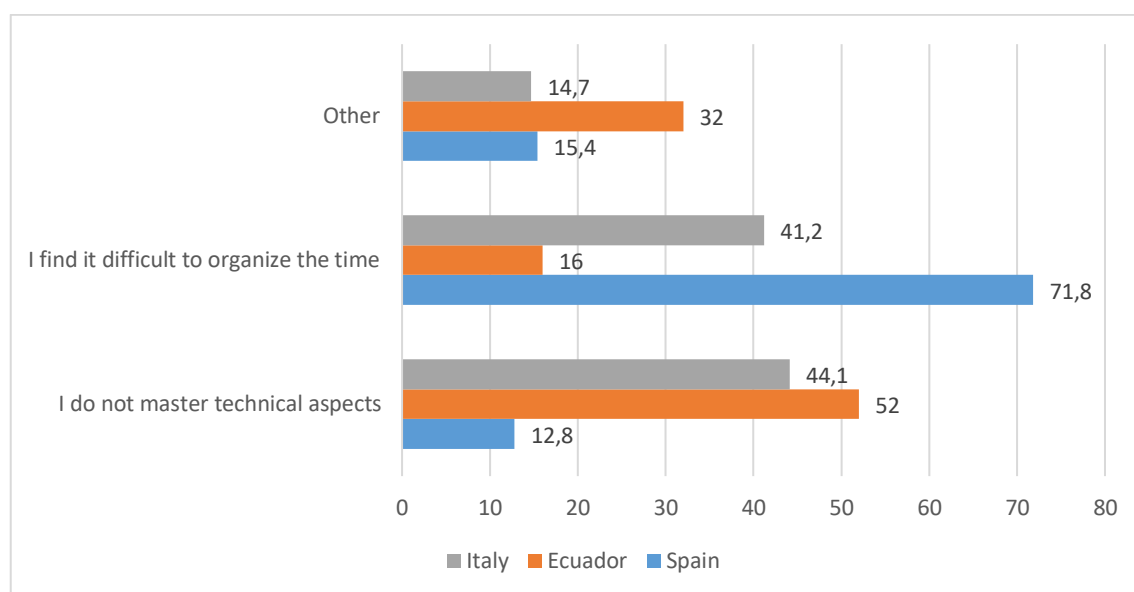
**Graph 3.** *Main deficiencies of the teaching staff for virtual teaching.*

**Source:** Self-made.

Regarding the role of teachers, it is equally important to highlight that both in Ecuador (82.2%) and in Italy (63.5%), students affirm that there has been coordination between teachers of different subjects, an aspect that has not occurred in the Spanish scenario, where only 14% indicate that such coordination has existed. The majority of students consider that they have the necessary skills to follow virtual teaching. This data shows very even results in the three countries: Spain (75.8%), Ecuador (74.4%), and Italy (73.6%). These percentages are close to the perception that teachers have of their students. 75% of teachers consider that they have the necessary skills to successfully face virtual teaching.

However, students recognize some deficiencies that focus preferably on the organization of their study time and to a lesser extent on mastering technical aspects (see graph 4). In the case of Spain, 71.8% admit that it is difficult for them to organize their time; while 12.8% admit not mastering the

technical aspects. Finally, 15.4% refer to other aspects such as: inexperience in managing this type of work volume (2.6%); the lack of consideration towards the students who study and work (2.6%); the high technical demands on the part of the teacher (2.6%); lack of consideration towards aspects related to mental health (2.63%), or laziness or lack of encouragement (4.6%), among others. In the case of Ecuador, for its part, it is observed that the main deficiencies of the students are concentrated in the absence of mastery of technical aspects (52%), as is the case in Italy (44.1%). On the other hand, only 16% of Ecuadorian students alluded to difficulty in organizing their time; while 32% refer to other aspects, such as the lack of technical equipment or adequate connectivity at home (20%), the greater number of distractions (4%), or the difficulty of performing several tasks at the same time (4%). In the case of Italy, 41.2% indicate the difficulty in organizing their study time, and 14.7% refer to other aspects such as technical difficulties or the feeling of excessive work.



**Graph 4.** *Main deficiencies of students for virtual teaching.*

**Source:** Self-made.

The negative consequences that the students identify in this change in teaching focus, in the Spanish case, on the increase in the workload (for 65.6%) of the students, together with the loss of face-to-face contact with the teachers (19.1%) and with colleagues (12.1%). These evaluations largely coincide with the reflections of the teachers who, in 61.2% of the cases, consider that the worst element of virtual teaching during confinement has been the loss of contact with the students.

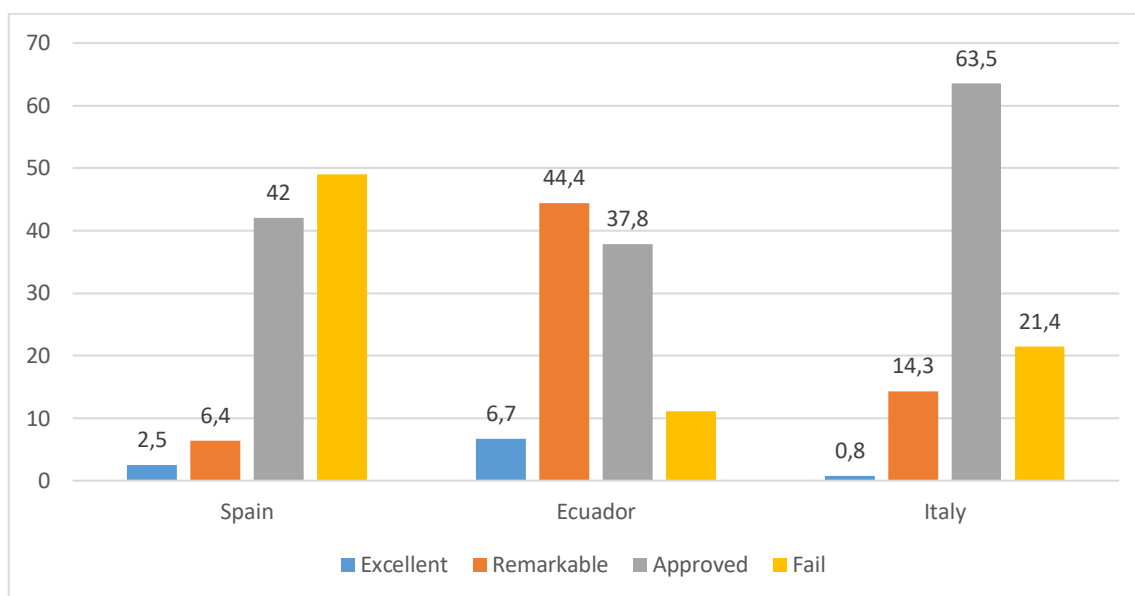
In the case of Ecuador, 43.3% indicate the loss of contact with the teaching staff as the main difficulty of the change of scenery, followed by the greater workload (27.8%), the need to be more autonomous (15.6%), and, finally, the loss of contact with classmates (13.3%). In Italy, the main negative consequence is related to the greater load of exercises and assignments (39.7%), together with the loss of contact with teachers (29.4%) and classmates (27.8%). Only 3.1% indicate the need to be more autonomous as a negative consequence of change.

It is striking that in all three countries the impossibility of face-to-face contact with teachers is considered one of the most negative elements, occupying the first or second position of importance among all the scenarios.

Universities have had to face a sudden crisis that has had a major impact on university management. In this sense, except in Spain (with 43.9%), in Ecuador (with 61.1%), and Italy (with 52.8%), most of

the students acknowledge having felt well informed by their respective universities. Spain, with 56.1%, is the country where the greatest number of uninformed students are identified.

Along the same lines, the feeling of having received contradictory information and instructions has been numerous in the Spanish and Italian cases. Spain (with 65.6%) and Italy (with 72%) present high percentages concerning this aspect. In the case of Ecuador, 41.1% would be within this group; while for 58.9% the indications and information received have not been, at any time, contradictory. Finally, students give a general grade close to approved in the three countries with some particularities (see graph 5). In Spain, students give a failure with 49% compared to 42% of those who give a pass. In the Ecuadorian case, the rating with the greatest prominence is remarkable (44.4%), compared to the approved majority in Italy (with 63.5%).



**Graph 5.** *What grade would you give your university in the way it manages the impact of this crisis on teaching?*

**Source:** Self-made.

Faced with these results, 76.5% of the teaching staff admit to having felt well informed about the different situations, decisions, and news related to the pandemic by their universities. Along these lines, most teachers consider that, if their universities had to be qualified, they would have succeeded, although the qualifications vary: for 37.2% it would be approved; for 34.7%, remarkable; and for 18.9% excellent. Only 9.2% fail their respective universities.

## 6. Discussion

The results of this research agree with the studies of Mishra and Koehler (2006) and Koehler and Mishra (2008) for whom the teacher, in the teletraining scenario, must show competences around three major components: disciplinary, pedagogical, and technological, whose dimensions are: 1) knowledge about the content of the subject; 2) knowledge of the processes and practices of the teaching method; 3) pedagogical content knowledge; knowledge of standard ICT used in teaching; 4) knowledge of the use of ICT in teaching processes; and 5) technological, pedagogical, and content knowledge.

Similarly, the perception of teachers in Italy, Spain, and Ecuador rescues the theory offered by Kirschner and Davis (2003), who formulated six large blocks for the training actions that are developed in ICT, which are: 1) competence for the personal use of ICT; 2) competence to make use of ICT as tools of the mind, 3) command of a series of educational paradigms that make use of ICT; 4) competence to use ICT as a tool for teaching; 5) competence in a wide range of evaluation paradigms that make use of ICT; 6) understanding of the political dimension of the use of ICT for teaching and learning, proposals that have even been accepted by international entities such as the Australian Department of Education (Pearson, 2003).

The quality of communication in online courses is one of the variables most noted in the literature as a precedent for student satisfaction (Wang and Chiu, 2011), an indicator that is also repeated in this research. For Italian, Ecuadorian, and Spanish students, communication, promoted by the teacher, is key in assessing the quality of online courses (Emeyano and Voronina, 2014). This relationship must be frequent to achieve an exchange of knowledge and mutual respect that allows the satisfaction of all educational actors (Margalina, De Pablos et al., 2014). Furthermore, the social proximity in these environments causes a positive assessment by the student (Kim et al., 2011).

Students from Italy, Spain, and Ecuador emphasize that virtual learning environments should give students freedom and focus their interest on it, fostering their autonomy and continuous training, a criterion that is also claimed in Salinas's studies (2002, 2004). For this author, a successful online educational experience depends on the adequacy of human and material resources, the acquisition of different behaviors, and the assimilation of this new culture.

Another factor that stands out, from the perspective of young university students from the three countries, is the importance of collaborative work, which is stated in Bolívar's theory (2006) since synchronous and asynchronous links are necessary between the different educational agents. For its ideal fulfillment, it is necessary to improve the tutoring processes and communication channels in virtual learning environments, to build a pedagogical project with common purposes that aim at the integral development of the student (García, Gomáriz, Hernández, and Parra, 2010).

For the surveyed students, the role of teachers, in virtual environments, should not be limited to the mere transmission of specialized knowledge (Prieto, 2008), but they should adapt to the transformations of society in the scenario of 'new normality' and propose active and playful models, through interactive and immersive methodological strategies (Robizo and Cózar, 2015).

From the perspective of Italian, Ecuadorian, and Spanish students, the teacher has to be able to innovate, reflect and transform their didactic proposals to respond to the social demands that the world is experiencing during a health crisis while achieving the curricular objectives proposed at the beginning of the course (Paredes, 2010).

On the other hand, the surveyed teachers recognize that it is necessary to promote critical and reflective thinking linked to the strategic management of ICT (Bonilla del Río and Aguaded, 2018), to promote practices that go beyond the exercise of instrumental skills and seek an effective use of technological resources (Arrieta and Montes, 2011).

The implementation of ICT in Higher Education programs depends on digitally competent teachers (Agreda, Hinojo, and Sola, 2016; Gisbert, Espuny, and González, 2011; Rangel, 2015; Valdivieso and González, 2016), an assessment present in this research both for the students involved and for the surveyed teachers

Students from Italy, Spain, and Ecuador conceive the support and guidance of their teachers as a key factor of educational success that ensures the comprehensive use of ICT (Salinas, 2004). This guarantees the quality of online training, provided that the functional aspects (interest, effectiveness, versatility) related to the environment (simplicity, clarity, originality), the pedagogical model (teaching plan, adequacy, flexibility, evaluation), and the complementary services (information, news, agenda) (Santoveña, 2010) of the Virtual Learning Environments (VLE) of their respective universities are met.

Previous research shows that teachers express positive attitudes towards the use and incorporation of ICT in training processes (Jimoyiannis and Komis, 2007; Banas, 2010; Álvarez et al., 2011), being these used to a greater extent in research activities than in teaching (Maroto, 2007; Mcvee et al., 2008), a fact that comes to light in this study. To mention one case, Ecuadorian students believe that their teachers lack greater incorporation of educational technologies in their teaching dynamics since in virtual environments they reuse the masterclass resource. Young university students seek that the use of technology places the student body as the center of learning (Bartolomé, 2004); however, this does not occur 100%. For a satisfactory educational experience to be given in cyberspace, students must possess basic skills that allow them to work with educational environments based on immersive technology, a piece of information pointed out by the surveyed teachers and that is recommended by Centeno Moreno and Cubo Delgado (2013).

The findings of this research are based on the perspective of Llorente (2008) and Romero et al. (2012), since the surveyed teachers, particularly Ecuadorians, consider that institutional training must overcome the instrumental nature of ICT and include complimentary dimensions based on: semiological-aesthetics, curriculum, pragmatics, educational psychology, graphic design, evaluation, time organization, as well as research skills. Besides, these authors recommend giving value to the practice, to natural teaching contexts, and the co-production of materials between teachers and experts. Also, contemplate the study of real problems and place the teacher in the use of broader education strategies.

## 7. Conclusions

This research has made it possible to analyze and, at the same time, contrast the points of view of students and teachers in three countries where the impact of COVID-19 has been alarming. In the case of undergraduate students in the areas of Communication, Journalism, and Education at the University of Turin (Italy), the Autonomous University of Barcelona (Spain), and the Technical University of Machala (Ecuador), a negative assessment is observed on the transition to the virtuality of Higher Education.

On the part of the teaching staff, the assessment is less critical and denotes a certain indifference to this change. However, it is not possible to indicate that the students identify the same negative elements. The conjunctural aspects, or even the type of studies being studied, are factors that could have an impact on the greater or lesser satisfaction of the students in the face of this change in the study regime.

The 'new normal' scenario has increased the importance of time management, autonomy, and flexibility in the education of future professionals. This aspect is crucial insofar as it invites us to rethink and, therefore, redefine, the set of competencies, content, and learning achievements of the training programs of the different degrees.

According to the results of the research, virtuality is associated, regularly, with an increase in the teaching load, an aspect that denotes the need to review the training processes and establish effective indicators and parameters in this area, with the aim of not saturating students with extracurricular activities that may cause them to drop out.

On the other hand, the vision that students have of their teachers in the virtual setting raises important concerns as this change has contributed to negatively impact the vision that they project as trainers. From the teachers' perception, the technical ability of their students is valued, but they consider that the students need to continue reinforcing skills related to the critical and reflective use of technologies. Beyond instrumental skills, the construction of an active and empowered digital citizenship is demanded.

Finally, the coronavirus pandemic has contributed to stoking the importance of contextual differences, which range from connectivity problems to the quality of technological services of students in Ecuador, Spain, and Italy, warning of different scenarios of educational inequality that could generate future social crises in the three analyzed countries. At the end of the study, the loss of presence stands as the main negative element for both students and teachers, a decisive aspect in the design of future virtual educational strategies in times of confinement.

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