Article

Face-to-Face vs. E-Learning Models in the COVID-19 Era: Survey Research in a Spanish University

María Teresa Costado Dios * and **José Carlos Piñero Charlo**

Departamento de Didáctica, Área de Matemáticas, Facultad de Ciencias de la Educación, Universidad de Cádiz, 11510 Puerto Real, Spain; josecarlos.pinero@gm.uca.es
* Correspondence: mariateresa.costado@gm.uca.es

Abstract: This study shows the results of an autobiographical questionnaire of Spanish university students regarding two different educational models caused by the COVID-19 pandemic: face-to-face and e-learning. The aim is to discover their perceptions and opinions about their experiences during the learning process and what they have experienced during this global emergency and period of home confinement. The sample is made up of 100 students from the Primary Education Degree programme and the research was carried out through a qualitative study of the questionnaire. The results, divided into categories of each educational model, show the interpretation that the students make of the current reality and their own learning process. The most important aspect of the face-to-face learning model, according to 75% of the students, is direct communication with the teacher, and for 88% of them this model was effective. For the e-learning model, the flexible schedule, the economic savings and explanatory videos are the relevant ideas that the students express, with 68% stating that it was an effective model. The main conclusion is that the students prefer to continue with the face-to-face learning process (49%) rather than online teaching (7%) or, failing that, mixed or blended learning (44%), where the theoretical classes could be online and the practical classes could be face-to-face.

Keywords: COVID-19; education; e-learning; face-to-face learning; perceptions

1. Introduction

The year 2020 will be remembered in the history of humanity as the year of the global pandemic caused by COVID-19. The health alarm made what we had until then known as "normal" cease to be so in all areas of our lives. In education, the simple daily act of going to class became "staying at home" in front of a computer, with consequent stress and technological fatigue. This situation changed our ways of perceiving and seeing education, of how to teach, how to learn and how to evaluate the acquisition of competences and abilities by students.

The purpose of our qualitative research is precisely to learn how the university students see our current form of education [1]. We aim to find out their perceptions and opinions about their experiences during the learning process, what they value from face-to-face education and distance education and what they have experienced since the state of alarm was decreed in Spain on 14 March 2020 [2].

There have been numerous ideas, proposals, press articles and research on COVID-19 and its impact on education [3], and how the next course (or the next school year) should be faced. Of all the studies, we should highlight the theories presented by Trujillo et al. [4] and Diez-Gutierrez and Gajardo-Espinoza [5]. The latter reveal the digital, educational and social gap that occurred during confinement, as well as the educational policies adopted in Spain, and they also carry out an investigation by surveying family units throughout Spain. This research aims to describe the view that families have on how to manage education and school assessment in times of COVID-19. Likewise, Trujillo et al. [4] carried out a study of

teachers, families and students in order to provide key conclusions to help understand the position of the educational community in the face of the state of alarm. They also offer an action plan and some recommendations for the next school year in primary and secondary education. They show that students are not happy with the level of teacher attention towards them and show frustration and dissatisfaction with the excess of submitted work required. In the case of university students, Demuyakor [6], Muthuprasad et al. [7] and Nguyen, Pham and Nguyen [8] analyse the perceptions of students about their training during the pandemic. For example, Demuyakor [6] concludes that learning success requires good teacher–student interaction, and that it is essential to notice that technology cannot replace the teaching work of a teacher.

The main aim of the present study is to identify the perceptions of university students who have to deal with two different educational models of teaching that they have been confronted with due to the global pandemic, in order to establish guidelines or design an appropriate teaching methodology plan related to teaching and learning practices to be used in the next school year. It is important to discover the opinions and concerns of the students, to establish some guidelines based on them and on teachers' experiences, and to find the teaching model that best suits the needs of students, so that the teaching/learning process can be effective. It is therefore a question of thinking about the teaching and learning process, verifying how lockdown has influenced this process, and evaluating whether the resources have been useful for student learning. Finally, the results of this research study will be used to improve teaching practice and professional action in future educational settings.

The educational models of teaching and learning experienced by university students within the same semester and subject can be identified with the face-to-face learning model and with the e-learning model [9–12]. Face-to-face learning, which we will call F2FL, takes place completely face-to-face in the classroom, both for theoretical lessons and practical classes, combining pedagogical practice with others carried out online on the subject's Moodle platform [12,13], such as: communication with the teacher (notices, chats, forums or emails), sharing documentation, submission of students' tasks and PowerPoint presentations using a projector in face-to-face classes. The latter educational model, e-learning, which we will call EL, corresponds to a totally online education training supported by ICT, without any physical presence in the classroom. The theoretical and practical lessons as well as the meetings are carried out synchronously using each subject's Moodle platform, along with Google Meet or YouTube, or asynchronously with explanatory videos of the subject content or the practice in question. In our case, the EL model is a combination of synchronous and asynchronous lessons and/or tasks [12]. Students had to make continuous use of their computers, tablets or mobiles to connect to the internet and follow their teaching-learning process from home.

The F2FL model was experienced by the students from 10 February to 13 March 2020; and the EL model was tested between 16 March and 29 May 2020, the day classes ended and the exam period began, which were also conducted online. We want to emphasize that the subjects are prepared and planned for an F2FL educational model, i.e., for being taught in the classroom, and not for being taught online. Over only one weekend, the teachers and the students had to make a huge effort to adapt themselves to the new situation (home confinement) and to the EL model. With this, we would like to make clear that the change in educational model was not gradual, but was very fast and could not take full advantage of the positive aspects of e-learning teaching.

2. Background

As mentioned in the previous section, this paper presents the results of an autobiographical questionnaire of Spanish university students regarding two different educational models brought about by the COVID-19 pandemic: face-to-face and e-learning.

Nowadays, the F2FL model is enriched with the use of the internet in the sense that teachers and students have class in traditional timetables and classrooms, but also use the

virtual platform or classroom, where the teacher can upload diverse information needed for teaching, and which is a learning support for the student at home. The virtual classroom is conceived as an information space containing the subject's programme, schedule, different documents for learning and practical classes, meetings, etcetera [10]. This represents the basic educational model in the use of virtual classes, planning it as an appendix to the traditional F2FL model, in which the teachers do not change the activities, the type of communication and the teaching methodology. In short, the teacher continues with the usual methodology, but supported with a technological resource [10].

With respect to e-learning, first of all, Rosenberg [9] defines learning as the process by which people acquire new skills or knowledge for the purpose of enhancing their performance; and he also says that there is a migration of information to the online environment, which can be updated continuously. Although face-to-face learning continues to play an important role, more people are demanding access to learning anytime and anywhere. Rosenberg defines e-learning as a networked phenomenon allowing for instant revisions and distribution of information and tools to improve learning. E-learning is powerful when both training and knowledge management are integrated, but even more powerful when integrated with classroom training in a learning architecture, which is the design, sequencing, and integration of all electronic and non-electronic components of learning. Area and Adell [10] state that the main characteristic of e-learning is that it is a training process that occurs totally or in part through a virtual environment where both the teacher–student interaction takes place as well as the students' activities with the learning materials. They show the benefits of e-learning, and some of them are the following, as also cited by Rosenberg [9]:

1. Extend and facilitate access to learning for groups and/or individuals who cannot access the face-to-face modality.
2. Increase the autonomy and responsibility of the student in their own learning process.
3. Flexibility in educational times and places.
4. Access to many resources and data offered by the teacher at any time and any place.

The blended learning (BL) educational model falls midway between EL and F2FL. It is a combined model of teaching with presence in the physical classroom and in the virtual class [10,14]. The virtual class is not only a source of support, but is a place where the teacher develops various actions for student learning. This new BL model is an innovation with respect to the F2FL model, creating new ways of communication and teacher–student interactions and in the teaching/learning process. Chandra and Fisher [15] conducted a study of students' perceptions of a blended-learning environment, where they obtained positive perceptions, such as: accessibility and being able to rewatch as many times as they liked, the environment promoted autonomy of learning, it enabled students to work at their own pace, and sustained interest in the subject. However, on the negative side, they reported that many students preferred the option of asking the teacher in a face-to-face environment, where their question could be answered in that moment, rather than by email, which could be delayed or misunderstood. Nonetheless, overall, the BL model has the positive aspects of the other two models, being a mixed model of both. By way of example, in the use of the BL model, Piñero and Costado [16] present the results obtained with co-designed activities focused on the development of competences linked to the development of geometric knowledge in student teachers. They conclude that the implemented experience in BL learning contributed to generating more complex, rich and varied geometric problems, preserving the objectives of content and procedures.

There have also been previous studies on the opinions of students in two different learning situations, showing their preferences and dislikes [17–20]. All of them show similar conclusions or focus their attention on the same ideas, talking about the relationship of the student with the teacher and other classmates, manipulative materials, bad connectivity or problems with the internet or lack of technological devices at students' homes. Altunay [17] and Gunes [19] conclude that the majority of students do not want to receive instruction through online distance education methods, while Altunay [17], specifically, shows that

the lack of autonomy in distance learning is conditioned by how students were taught without being autonomous in secondary education. In their study, Noviana, Sukardi and Suryanti [21] show that the learning process is affected by different aspects, such as gender, age and school type (urban or rural). They conclude that female students were better than their male counterparts because they are more motivated and have better abilities in time management. They also state that the eighteen-year-olds suffer a decrease in cognitive function in associative memory, which affects learning ability, and that the learning process is affected by the availability of access to technology, while the lack of resources and infrastructure played an important role.

Finally, concerning the educational models, there is the study by Johnson et al. [22]. Their results revealed that their students held more positive perceptions about the instructor and the whole course in the face-to-face compared to the online model, although there was no difference in the measure of learning. They highlight as quality characteristics of the F2FL model: the students' ability to maintain a dialogue with the instructor and others, and the opportunity to receive multiple and diverse examples and illustrations from the instructor, which were of poor quality in the online environment. Moreover, in this research study, they emphasize that students in the F2FL model can join together more easily to discuss class projects, work out any differences of opinion, and build social relationships, in contrast to the EL model. It is therefore reasonable to assume that the relationship between students and interaction with the instructor are among the most important for students.

3. Methodology

To achieve our aim, we chose a descriptive qualitative method [23] where the testimonies of the students are collected through a qualitative questionnaire [24] of open questions structured in three sections to discover the perceptions and opinions of the students regarding each of the educational models presented above, and which they prefer to follow in their training. In addition, the questionnaire had a fourth quantitative section to assess the resources used during the two educational models of teaching. The students had to rate from 5 to 1 each of the resources set out in the questionnaire, with a 5 being valued as "very useful" and a 1 as "not very useful". The students were even given the option of not answering with the option: "do not know/no answer" (NK/NA). In the results section, there is a specific sub-section where the students' assessments are shown.

The initial theoretical position of this qualitative research is the symbolic interactionism of Grounded Theory [25]. It explains that the central research starting point for qualitative research consists of the different meanings that individuals give to their own experiences or events. The data analysis involves carrying out a survey, codifying the information into categories and comparing the information obtained. This theory allows one to give an explanation to the relationships between two or more categories of the same reality. It is thus a constant comparative methodology of data analysis and constitutes a set of conceptual hypotheses about the reality studied [26], whereby concepts and hypotheses are formulated throughout the research itself. The researcher (member of teaching staff) fragments and segments the data contained in the text, trying to list a series of emerging categories (open coding). This entails classifying the expressions contained in the text to assign concepts. The most interesting are selected from all the categories to make a deeper analysis, enriching them with more passages from the text (axial coding), to finally obtain a central category (selected coding) that includes the other categories [25].

Our premise is to analyse the interpretation that a group of students makes of the reality that they had to live through during the pandemic. For this reason, we analyse their perceptions, opinions and experiences of the two educational models (F2FL and EL) that they experienced in the same semester and subject, and then we compare them. From the students' own words, as we will see in the results section, a third, preferred educational model can be extracted, as can the subjectivity aspect, that is, aspects related to their emotions and feelings.

The survey consisted of three sections of open questions in the form of an autobiographical questionnaire for students to express their own opinions about the two educational models. In qualitative research, the narrative biographical approach comprises data collection and analysis methodology, and a way of building knowledge in educational and social research [27]. Autobiography allows the researcher to gain proximity to students and their reality. The sections of the autobiographical questionnaire were the following:

1. Section 1 consists of four open questions to learn the opinion of the students about the F2FL model, taking into account their individual experience and to find out whether they were able to argue positive and negative aspects of the model, to give some recommendations for improving such a model for the next course, as well as assessing whether it had been effective or not in their own personal cases.
2. Section 2 contains the same questions as in Section 1, to find out the students' perceptions of the EL model.
3. Section 3 has two open questions, asking about what educational model they would like to continue their training with at the university, and their concerns or other aspects that the learners would like to express about the situation generated by COVID-19 and had not expressed previously in the first two sections.

The participants in this study were Cádiz university students, from the Primary Education Degree of the Faculty of Education Sciences. The sample is made up of two sub-samples, since students from two different subjects in the area of mathematics have participated. These two sub-samples were chosen because the authors of the paper were the professors of these students. The total number of enrolled students was 140, and 100 of them participated in the survey, i.e., a response rate of 71.4%. Specifically, 47 of the 100 participants were enrolled in the subject of Mathematical Knowledge I, and 53 in the subject of Didactics of Mathematics I. Of the 100 students who responded to the survey, 72 were women and 28 men, with an age range between 18 and 20 years old for the vast majority.

The survey was prepared by teachers (authors of the paper) in April 2020, using an anonymous Google form and it was made available to students in May 2020, so that they could answer it during that month. In the month of June, the teaching staff proceeded to analyse the students' responses. For this reason and for this analysis, the responses in each of the sections that were part of the data collection instrument were read repeatedly. The first step of the analysis was the extraction and collection of fragments of the original autobiographical texts that provided relevant information about the educational models. After this, the data classification began with the determination of categories that come from the collected material, looking for conceptions or ways of thinking shared by the interviewees.

4. Results

The analysis of the data collection instrument, that is, of the survey, went through the following processes. There was a first extraction of relevant fragments from the original autobiographical texts from the questionnaire, where they give information on the two educational models. These fragments were subsequently analysed by the authors of the paper (teaching staff) to be codified and to identify each category. These categories are the conceptions and ways of thinking shared by the interviewees (students) of the same reality. In our case, this reality was home confinement and the change in educational model, from F2FL to EL. For each model, the extracted categories are each one of the positive and negative points or ideas. We must focus on what the interviewee says and not how they say it, and we have to compare what the interviewees say.

From the original fragments, we can extract the characteristics of a third educational model and other categories related to the students' emotions. The subjectivity section has been added to our study, because as the students' responses were read, it was seen that they emphasized expressing their feelings and emotions, as if to reflect the situation of negativity they were experiencing.

Below, in different sub-sections, the common responses most repeated by the students for each of the educational models are summarized. At the same time, specific fragments

of the students themselves are shown that reveal the opinions summarized in the different categories. The first subsection shows the results for the F2FL model, the second subsection gives the results with respect to the EL model, and the third subsection shows which educational model is preferred by the students for the continuation of their training. Finally, in the fourth subsection, we reveal the opinions and emotions caused by the pandemic situation (subjectivity).

The results are organized into different categories that arise from the analysis of the students' autobiographical texts. These are called relevant fragments, which are those parts of the original texts that give information about the categories to be studied [28,29]. A selective coding is then carried out to group the relevant texts according to the categories analysed, and we look for ways of thinking that are shared by the students, and the percentages of each category are obtained, that is, how many students share that thought or opinion for each category. The most relevant categories of each educational model and its corresponding percentage of students supporting it are shown in Table 1.

Table 1. Categories and percentages of students that expressed some relevant phrases in favour of each category of each educative model.

Model	Category	Percentage (%)
Face-to-face learning model	Direct communication with the teacher	75
	Direct communication with other students and the possibility of working in a group	55
	Use of physical materials	42
	Explanation, questions and doubts	51
	Effectiveness	88
Electronic learning model	Flexible schedule	44
	Economic savings	40
	Explanatory videos	48
	Complains from other teachers	34
	Carrying out a greater number of jobs	37
	Connectivity and online platform problems	51
	Effectiveness	68
Subjectivity	Empathy and adaptation from professors	46
	Overwhelmed-ness	13
	Stress/anxiety	11
	Lack of motivation	7

4.1. F2FL Model

What the students of the F2FL model value the most is direct communication with the teaching staff within the classroom itself, with 75% of the students talking about this idea in their answers, since if personal doubts or other questions arise, they can be resolved immediately. This allows the teacher to give explanations when the doubt arises, either with another example, giving other explanations, asking another classmate who has understood it to explain it or even being able to use manipulative materials to explain the doubt that has arisen. The students also mention that, in class, they must take notes of the teacher's explanations because they do not have videos to review these explanations as many times as they want or as they need, although they have at their disposal all the content of the subject on the campus through PDF reading documents and class presentations. Accordingly, it would seem that students are quite dependent on the teacher's explanations

in the classroom, rather than on reading and understanding the documents provided on the subject's platform. Just over half of the students (51%) say that in the F2FL model it is possible to give explanations in different ways for the better understanding of the subject and the use of manipulative materials to improve it, with 42% agreeing with this category. They highlight the advantage of carrying out practice, due to the practical nature of the mathematical subject, using manipulative materials in the classroom provided by the teacher; materials that they do not have at home or cannot print out due to a lack of means.

Likewise, the students emphasize as an important aspect of the F2FL model the fact of being able to work in a group in face-to-face lessons, with collaborative learning that encourages discussions and debates, and not a mere distribution of practical tasks that they must carry out and hand in. Specifically, 55% of the students support this idea. Although it is not an analysed category, we wish to highlight that 16% of the students mention the noise made by some classmates in the face-to-face model, something that does not happen in the EL model, because it is a totally virtual class where everyone has their microphone muted, so it is easier to listen to the teacher without interruptions.

Examples of student responses discussing the positive and negative aspects of the F2FL model (in comparison with the EL model) are:

- The explanations in face-to-face classes are clearer, since more didactic resources are used, and there is also greater participation and they are more dynamic, increasing motivation.
- It is more comfortable to practise the subject in person and in a group, where communication is easier.
- The number of students per class sometimes makes learning difficult.
- The noise from classmates or talking to the rest of the students in the class causes greater distraction.
- A disadvantage is that the classes are not recorded and if you forget something that you have not written down previously in your notes, you cannot see it again and it becomes more disorganized.
- The online lessons can be extended for a few minutes without worries, and everyone has the microphone muted which allows teachers and students who have doubts to hear clearly.
- Not being able to work with the materials in person makes everything very abstract and it is much more difficult to understand things.

The recommendations, which students express to improve teaching in the F2FL model, repeat the same ideas. On the one hand, they propose reducing the number of students per class, less repetition of each concept or idea explained and less content per class, to avoid information overload. They ask for more hours of practical lessons, with cooperative work and handling more material. They also ask to increase the number of face-to-face lessons to work on the different subjects of their grades. In general, talking about the rest of the subjects, they ask that the classes be more dynamic and participatory, and for recorded classes to be uploaded to the subject platform for the students to be able to listen to the explanations of the previous theoretical lessons again when at home.

Regarding effectiveness, almost all the surveyed students mentioned that the teaching in the F2FL model was effective, specifically 88% of students. Their answers refer to explaining that they prefer direct communication with the teachers, even non-verbal, since the sender receives signals from the receiver to know if they are communicating well or if they need to modify the way of expressing or explaining themselves in that instant. Students defend the idea that it is a degree where they have to learn how to teach and, from their point of view, the best way to develop social skills is seeing examples of their own teachers acting in the classroom and learning from them. They prefer to work face-to-face (not through a camera) with other classmates using manipulative and physical materials. Examples of student responses are as follows:

- Yes. Working through different activities, games, materials, and resources made me see Maths from a more fun perspective.

- Yes, because having everything physically, that is, a teacher who is explaining the contents to you in the moment, some classmates who are helping you in the moment, some digital resources given, it is a much faster way when it comes to acquiring and enhancing knowledge in a subject.
- Yes, since it is better for both: the teacher who receives the student's feedback and for the student themselves, because if they have any problems they can ask the teacher the information and solve their doubts at the same time.

4.2. EL Model

For 44% of the students, the most important idea regarding the EL model is the flexibility of timetables, because the online class schedule can be extended without limitations according to their needs. Another idea shown in their answers is that, as microphones can be muted, meaning there are no interruptions from other students, there is much less noise during the class, and the teacher's explanations can be heard perfectly and clearly, and they were also more specific. The most notable positive aspect is that the online class could be recorded through the use of Google Meet or YouTube and, therefore, the students could watch it again whenever, however and as many times as they wished, and take notes with confidence. This category is supported by 48% of the students.

Another aspect that 40% students mention is the economic sphere, as they do not have to travel to the university on public transportation or share their cars with other classmates, as well as not having to spend money on rental accommodation (for those students who do not live near the campus). They even talk about their own availability, by not having to make trips that generate loss of time, they have more time to study.

Other categories selected from the original student answers are the complaints with respect to other teachers (34%) and the excessive number of assignments to be submitted (37%). A repeated idea we extract from the students' answers is that there were teachers of other subjects who asked them to submit more work than they would have asked for in the F2FL model, and they state that direct communication with the teacher is difficult when it comes to asking any questions while the online class is being taught. Furthermore, they repeat the idea of "problems with internet access" or that "the Moodle platform of the university was not working well and it crashed all the time", with the corresponding distress for students who could not follow the online lessons and their loss of time waiting for connection to be established, or having to change their resources to continue with the online class. They also highlight the lack of technological means on the part of the university with repeated technical problems in the Moodle platform, or of themselves, due to living in small towns or rural areas, or not having the effective means due to economic problems at home. They also emphasize the lack of digital resources, or having to share them with other members of the family, as well as taking into consideration good or bad internet connection at their own homes (13%).

Let us look at some examples of answers that corroborate these categories:

- Considerable money savings either in public transport or in renting the house.
- It becomes easier to attend because we are more available. Having more time to do homework and study while at home, without commuting. You are more self-efficient and the autonomy of the student is developed.
- Travel and economic cost. Travelling involves time and money that can be used for other, more important issues.
- There are people who do not have the resources to attend online lessons. The websites provided by the university are not effective enough.
- Some of the teachers have not taught or have not been concerned about their students, much less about the way they teach their subject. Another disadvantage is the overload of work we have been exposed to during this time.
- If you don't have access to the internet, you can't do anything—We don't all have the same resources—We don't all have a place to study at home—We don't all have

our own room—We can't all be on the computer at certain times—We don't all have mobiles or laptops.

- Reduce the amount of homework, because two weeks before the final exams we have not been able to study yet due to the massive assignments we have to submit.
- Improve the apps where these lessons are taught, since many students are connected at the same time and it collapses.

Regarding the recommendations for improving the teaching of the EL model, they particularly mention the use of Google Meet or YouTube instead of the university platform due to the technical problems that it caused, or even using other online applications to teach and attend the lessons. However, what stands out the most are not the recommendations related to the use of technology, but rather the teaching itself, in the sense that they request a reduction in the volume of work to submit or the elimination of some contents from the curriculum to be taught. However, what they demand the most is understanding on the part of the teachers in the situation of home isolation, the lack of media or digital resources at their homes and a greater adaptation to the individual situation of each student.

To finish the analysis of the students' responses regarding the EL model, let us examine its effectiveness according to the students surveyed. There are three general answers: "yes", "somewhat" and "no". Those who answer "yes" are always thinking of the specific teachers of mathematical subjects (who carry out this study) and praising the involvement, effort, adaptation and means used by the teachers of that subject. In the second case, those who answer "somewhat" or "so so" or "yes and no" is because, although the teaching staff have adapted well to the circumstances, they prefer face-to-face lessons for the reasons already argued previously. Finally, those who directly say "no" do so because of their preference for face-to-face lessons, that is, the F2FL model, due to its direct contact with the teacher or classmates, and the other reasons stated above. Specifically, 68% of the students answered that the EL model was effective, but many of them conditioned their response because of the involvement of the teaching staff in these subjects, or the existing ICT resources, or they say "yes" but they prefer face-to-face.

4.3. Preferred Educational Model

Analysing the first of the two open questions of the third section of the questionnaire, we obtain the following results. The specific question about the preferred education model was posed and answered by the students always in consideration of the next school year in the pandemic situation and the possibility of returning to the classroom in the faculty. The students' answers are therefore conditioned by this, and they are not about the F2F, blended or electronic learning model in a general context.

Most of the students, 49 out of 100, prefer the F2FL educational model, particularly in order to be able to carry out working group activities in person. An indispensable part of learning is understanding and handling manipulative materials that as future teachers they will use in their classrooms with their students for better learning. They also prefer face-to-face classes for social contact with their classmates and to be able to carry out this practice in work teams with truly collaborative learning and not a mere division of tasks that each student must submit as a part of a group, which is what they did in the EL model of distance learning. They also mention the face-to-face contact with the teachers for a better understanding of explanations, to be able to ask questions in real time and so that the teacher can give more examples and explanations or carry them out in a different way. In contrast, in the EL model, it was difficult to ask questions while the teacher was teaching (even though they were allowed to).

However, 44 out of 100 students prefer a "mixed" class, understood by them as both face-to-face lessons—practical classes to be able to socialize, work in groups and have manipulative materials—and the e-learning method. Here the theory classes would be synchronous, that is, the teacher uses Google Meet or YouTube to teach online, or using asynchronous lessons recorded on video to be viewed by the students whenever, however and as many times as they wish, and even to stop them to be able to "take notes", as they

say themselves, or to understand the explanations better. Therefore, from the students' own words, a third educational model can be introduced in this study that corresponds to blended learning [14,16], consisting of face-to-face combined with e-learning lessons, that is, a b-learning model (BL) that combines classic pedagogical practices with others carried out online [13].

Only 7 people out of 100 would like to have wholly e-learning teaching, that is, to follow their training with the EL model entirely.

Below, we show the responses of the students themselves to each of the ideas mentioned above, where they express their desire to continue their training through the F2FL, EL or BL models:

- In general, I would continue with the face-to-face model, since in the theoretical lessons if you have doubts they are raised and resolved in the moment and you do not lose the thread as much as in an online class. And especially face-to-face lessons are much more effective to use the materials that we need to get to do the practices and that the whole group uses, and we can raise doubts about the work at the time.
- I prefer face-to-face teaching. It allows us to separate the place of work that is the university, and the place of rest, which is the house. Otherwise, with the e-learning method there is no timetable, so we have to be connected 24 h a day.
- Face-to-face teaching, since I see the lessons in the classroom more effective due to the explanations, doubts and teaching materials that this subject requires for its completion.
- My preference is mixed teaching, because it allows us to get to know and handle both methodologies that are important for our future profession as teachers. Besides, it could be a good option to the preference of all students.
- Mixed teaching combining face-to-face and online lessons so that some days we are at home to study and others at the university for work.
- I would like to continue with online teaching, as I have explained before, I find the explanations online better than in face-to-face due to the explanatory videos.

4.4. Subjectivity

A final open question was included in the data collection instrument to give the students the opportunity to express themselves freely, not only about teaching or the quality of the teaching/learning process, but also so that they could express their emotions and feelings resulting from the global pandemic situation or some other ideas that they wanted to express and had not already expressed previously in the autobiographical questionnaire. We have named this section "subjectivity" because we think that it is a word that represents what we are going to talk about: personal opinions not related with the educational models but students' feelings or worries about the situation they underwent.

The most prominent idea is the lack of empathy and adaptability of the university professor to the pandemic situation. They mention on several occasions that the teaching staff of other subjects have resources but do not know to use them, or do not pay attention to the students' needs, or only upload documents to the platform for reading and completing the assignments that they had to submit. They mention that other teachers have asked them to submit more work than that required at the beginning of the F2FL period, meaning that they have been swamped with work, with their corresponding submission deadlines being badly planned (showing a lack of coordination between teachers of different departments and the lack of attention of teachers of other subjects). They tend to blame others rather than taking responsibility themselves for the tasks. The category studied here is the empathy or adaptability of the teaching staff to the pandemic situation and to the transformation of the F2FL model to EL model, with 46% of the students talking about this idea.

Some responses related to these ideas are as follows:

- Most of the teachers, as a substitute for the face-to-face classes, have devoted themselves to uploading their documents and asking us to submit more tasks.

- It all depends on the teacher, if he or she wants us to learn, we will learn; but if they are not aware of their students during online lessons to see what we are doing, we do not learn anything.
- Many teachers, having insufficient resources, do not know how to carry out online teaching, which is not surprising, since it is the first time they have faced it and they are not offered the necessary materials to be able to carry out their work correctly. It is in these moments when we realize how undervalued education is and the few resources that are offered to both students and teachers.
- Teamwork has been devastating, as there is no physical space and relying on an online environment has been a disaster. It has been shown that the generation of "digital natives" is a fallacy, since there is nothing beyond social networks.

Other ideas mentioned by the students are related to their emotions. They talk about constant stress, feeling overwhelmed, anxiety, frustration, sadness, nervousness, suffering, worry. These are words from first- and second-year students, between 18 and 20 years old. Indeed, although it is not the scope of our paper, we think that talking about the students' feelings is important, in this case, in terms of the moral damage caused by the international pandemic. All ideas we extract from the original texts that are derived from the pandemic situation and home confinement are negative emotions, which can lead to a teaching and learning process that is neither optimal nor effective. Seven per cent of the students talk about a lack of motivation or feeling discouraged, which is caused by work overload or insufficient empathy shown by the teaching staff. All of this has discouraged the students, sapping their desire to continue studying or even making them consider abandoning their degree. Other students (13%) mentioned that the situation of home lockdown was tiresome and that they felt overwhelmed. The whole international pandemic situation was so important and complicated that they were unable to think about anything else, and many of them suffered from family economic problems. This also caused stress and anxiety in 11% of the students, who mention constant fatigue and the impossibility of concentrating on their studies.

Some examples of this are the following responses:

- It has been very hard in my opinion. I have been involved in very overwhelming situations, because everything that is happening affects you. If we add to the current situation that it is not possible to go out to "clear our minds" and that a large amount of work and study is required (not in this subject), a person is out of breath and strength, with no motivation.
- Well, for me, like many, I think it has been a constant burden and frustration, the overload of work sent by some teachers (not in this case) or the lack of information from others has made lockdown a suffering with the continuation of our training.
- The online teaching that we had to embrace due to COVID-19—I think that in my case it has been constantly linked to stress and fatigue.
- This situation has caused me constant stress.
- I believe that the priority is organization and sympathy towards the students to maintain motivation and obtain positive results.
- Where is the motivation to learn? Because I have felt like a robot.
- The first semester I was very motivated and kept everything up to date, but it is true that this semester it is taking me a lot to study. I know that this is going to lead to worse grades than I could have in other circumstances.

4.5. Resources Used by the Teaching Staff

The last part of this research to be highlighted is the assessment that the students made of the resources used by the teaching staff in each of the previously described teaching models, F2FL and EL.

As mentioned previously, within the questionnaire there was a specific section dedicated to evaluating the resources used, rated (on a Likert scale) from "very useful" (5) to "not very useful" (1), even giving the option of "don't know/no answer" (NK/NA).
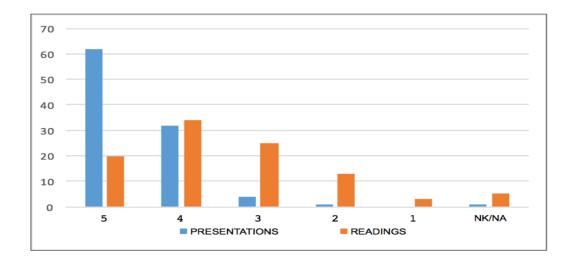
The resources used by the teaching staff included in the questionnaire are shown in the first column of Table 2, together with the percentages for each value in the Likert scale and its mean value. All items show values up to 4, except the PDF readings and working individually. These items are the worst valued by the students, with 21% and 33.7% of them indicating that the item is very useful, respectively. In contrast, the most useful items are communication (78%), video/YouTube theoretical lessons (73%), and F2F practical lessons (70%). These results show the same ideas as the students' words in the previous sections, focusing their attention on communication with the teacher, online theoretical lessons and F2F practical classes.
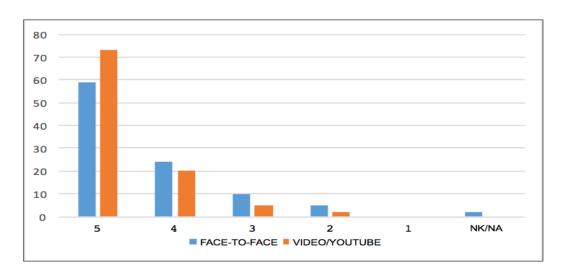
Table 2. Percentages of each value in the Likert scale and media value for resources used by the teaching staff.

Resource	5	4	3	2	1	Media
PowerPoint presentations	62.7	32.2	4	1	0	4.56
PDF readings	21	35.8	26.3	13.7	3.2	3.58
F2F theoretical lessons	60.2	24.5	10.2	5.1	0	4.4
Video/YouTube theoretical lessons	73	20	5	2	0	4.64
F2F practical lessons	70	21	8	1	0	4.6
Meet/YouTube practical lessons	54	33	7	5	1	4.34
F2F meetings with the professor	55.5	23.8	14.3	4.8	1.6	4.27
Meet/YouTube meetings with the professor	64.6	22	8.6	2.4	2.4	4.44
Working individually	33.7	13.7	19	21	12.6	3.35
Working in group	49	27	15	6	3	4.13
Individual works	44	31	13	9	3	4.04
Group works	50	36	9	3	2	4.29
Notices	51	29.6	9.2	7.1	1	4.18
Schedule	63.7	21.1	13.1	2	0	4.46
Communication	78	19	3	0	0	4.75

The most relevant results are also shown in the figures below, in which the Y axis shows the number of students, and the X axis the Likert scale (values between 1 and 5) and the NK/NA answer. Figure 1 (top) corresponds to the assessment by the students of the teacher's explanations compared to the reading of PDF documents by themselves. The PowerPoint presentations of the subject content by the teacher were rated as very useful by 62.7%, as opposed to focusing on readings (articles or books) by themselves (21%) and studying independently. Moreover, 73% of students consider the recorded videos to be more useful, so as to be able, in their own words, "to watch the video as many times as they wish", as well as to be able to stop it at any time to take notes on the presentations or explanations from the teachers. In Figure 1 (bottom), the scores of the students of the face-to-face theoretical lessons are shown versus the online format recorded on video or YouTube channel.

In Figure 2 (top), the scores of the practical lessons are shown in the face-to-face model compared to the same type of lesson but online. What the students said is that the former, the face-to-face lessons, are more useful than the latter. Related to this, Figure 2 (middle) shows the students' assessment regarding the way of working (individual versus group), considering working in groups as more useful than individually. Finally, Figure 2 (bottom) shows the students' assessment of the usefulness or the uselessness of the use of notices on the online platform of the subject, as well as a schedule of the subject created by the teacher, and the communication of the students with him/her, with the latter being the best rated by the surveyed students.

Figure 1. (**top**) Comparison between the teacher's presentations versus reading of documents. (**bottom**) Comparison between the face-to-face versus online theoretical lessons.
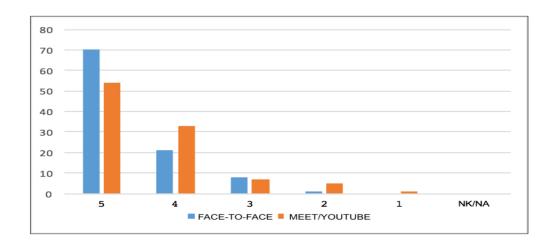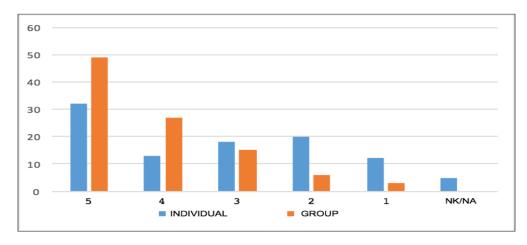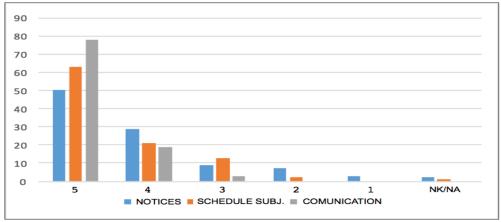

Figure 2. *Cont.*

Figure 2. (**top**) Comparison between the face-to-face versus online practical lessons. (**middle**) Comparison between working in a group or individually. (**bottom**) The students' assessment related with the use of notices, schedule of the subject and the communication with the teacher.

From the assessment by the students shown in the previous figures, Table 2 and previous explanations, it may be deduced that there is a clear tendency or predilection of the students to the BL model, where the teacher explains the knowledge of the contents related to the subject in question, in class, but being recorded, and the video is then made available to them rather than in a face-to-face lesson (the mean value of video/YouTube theoretical lessons is 4.64; and the PowerPoint presentations is 4.56). They also prefer F2F practical lessons (mean value of 4.6) and work in a group rather than individually. Likewise, they positively rated the planning of the subject (4.46) and its development by the teaching staff, as well as having good communication (4.75), thus emphasizing their dependence on the teacher.

5. Discussion

An important component of learning in the classroom is the social and communicative interaction between the student and the teacher, and between students themselves. The students' ability to ask a question, share an opinion, or disagree with a point of view is a fundamental learning activity [30]. Through conversation, speech and debate, a new concept is clarified or a skill is practised. This direct interaction is precisely one of the main demands of the students in this study, the same result found by Johnson et al. [22]. The results show that by not having the opportunity for face-to-face interaction and instruction, most of the students were not satisfied with the EL educational model of online lessons, which affected their motivation and willingness to follow the subjects, preferring the face-to-face ones. This result is consistent with the studies by Altunay [17] and Gunes [19]. In addition, Muzammıl, Sutawıjaya and Harsası [31] conclude that interaction

(between students, or students and tutors) is an important variable and has a positive effect on student satisfaction.

In addition, we can conclude from the results that students demand greater coordination between teachers of different subjects, better communication, and greater sympathy on the part of teachers regarding the situation of stress, overwhelmed-ness and frustration generated by COVID-19. Likewise, they express their dissatisfaction with the excess of tasks and work that the teachers require them to submit, as well as the lack of participation or follow-up or attention on the part of the teacher towards the students. This conclusion is also drawn in the studies by Trujillo et al. [4] and Demuyakor [6]. Similarly, Landrum, Guilbeau and Garza [32] also talk about this teacher–student interaction, where this dialogue "implied a constant tension between the self and the other, the activity and the passivity, giving and receiving, the preparation and the spontaneity, to instruct and learn, to direct and follow, to affirm and withdraw".

In terms of results in favour of the EL educational model, students indicate its time flexibility, meaning they can study in their own time and from their own place, which was also found by Bagrıacık [33], and in the benefits of the EL model by Rosenberg [9] and Area and Adell [10]. The reduction in economic expenses, less noisy lessons and the availability of recorded lessons, are mentioned by the students as advantages of the EL educational model. However, they also focus their attention on the technical problems of the university platform, lack of or bad connectivity to the internet from their homes, or lack of technological gadgets (computers, tablets or mobiles). The same results are shown in the works of Altunay [18], Demuyakor [6], Muthuprasad et al. [7], Noviana, Sukardi and Suryanti [21] and Trujillo et al. [4]. In particular, it is essential to mention the study by Rodicio-García et al. [34], where they carry out a study on the digital divide in university students.

Finally, it should be noted that although students prefer an F2FL model (49%), there is a high percentage (44%) of students who, in order to continue with their training process, would be in favour of a BL model, and only 7% would be happy to continue their education with a fully remote EL model. Almost the same percentage of students would prefer to continue their training in the next academic year with an F2FL or BL model. However, we want to emphasize that their answers to the questionnaire are conditioned by the pandemic, in the sense that they and the teaching staff thought that the international COVID-19 situation would not be under control, and that in the next academic year all of us would have to make further adaptations. The authors believe that this is the real reason why the second option of educational model for the students was the BL model. For them, the BL model is understood as having access to theoretical lessons recorded or synchronous online, and to other documents or material available online, and more hours of face-to-face practical lessons to be able to have access to manipulative materials, to interact with the teacher and the rest of the classmates. This is the same conclusion that Gunes [19] and Chandra and Fisher [15] make in their studies. Hussein et al. [35] state that many students still prefer the traditional learning approach, but the number of students in the e-learning field is increasing and that an adaptive e-learning approach does not only enhance content construction but also domain knowledge and pedagogy.

Finally, we would like to highlight the aspect of subjectivity that emerged from the analysis of the original fragments of the questionnaire answered by the students. From their own answers, the main idea is the lack of empathy and adaptability of teachers to the new pandemic situation. Almost half (46%) of the students complain about the lack of attention received from their teachers, who only upload documents and set new assignments (not planned at the beginning of the course), but do not give online classes. This causes demotivation and negative emotions. Thirteen per cent of the students say that they feel overwhelmed due to home confinement, isolation, or having family problems. A further 11% of them express feelings or emotions of stress and anxiety with constant fatigue and the impossibility of concentrating on their studies. They are worried about their training and education, as well as the global pandemic situation. In this sense, we

wish to highlight the study by Valero et al. [36], in which they compile studies that analyse how the global pandemic has affected the mental and emotional health of individuals, as well as self-care strategies in home isolation. That is why it is understandable that the surveyed students show these feelings, in the same way as any other individual who is suffering a similar situation, since they also want to achieve academic success, which in itself creates anxiety and even more if we relate it to mathematics. As Tuncer and Yilmaz [37] show that there is a positive relationship between achievement and success in the mathematics class and the attitude of students, with the relationship with anxiety being negative, as well as the relationship between anxiety and attitude being negative and significant. We should also mention the study by Zang et al. [38], who assess the adverse impact of the COVID-19 outbreak on Chinese college students' mental health, seek to understand the underlying mechanisms, and explore feasible mitigation strategies. Their results show that 85% of respondents reported their worries about COVID-19, and over 20% reported at least one form of mental distress, and the prevalence of negative emotions was higher than in previous studies. Moreover, they say that the isolated home situation and social distancing for a long time might cause irregular lifestyles with poor sleep quality, stress and anxiety over their academic or future career. It is therefore normal that our students feel these emotions of stress, anxiety, overwhelmed-ness, and the need to share them with other people—in this case with the teachers—and they complain when the teaching staff do not pay attention to them.

6. Conclusions

The COVID-19 pandemic situation has affected many areas of life, including education at all levels. Universities and other institutions were forced to close and change their way of teaching from an F2FL model to an EL model. We consider that it is important to discover the perceptions and opinions that students have of their training process if we want this process to be effective and meaningful, both in a pandemic situation and simply as a future learning model. In summary, our research, a survey about the perceptions and opinions of university students, produces the following main ideas.

Firstly, in favour of the F2FL model, the students demand social interaction with the teacher and with each other, to ask questions or voice doubts directly in class, or to have the possibility to manipulate physical material and work in groups with collaborative learning. As many as 88% of the students say that the F2FL model was effective and 49% of them would like to continue their training with this model. Negative aspects of F2FL model were that the F2F lessons are not recorded, and that the classes could be noisy and have interruptions.

Secondly, in favour of the EL model, the students note the idea of timetable flexibility, more silence during the class (the teacher's explanations can be heard perfectly), economic aspects, recorded lessons and more time to study at home. Their negative ideas focus on technical problems, excessive assignments and the lack of teacher attention. Of the students, 68% say that the EL model was effective, but only 7% would continue their learning process using it.

A further 44% of the scholars would carry on their teaching/learning process with a BL model. This consists of a mixed model between F2FL and EL, with synchronous or recorded theoretical lessons, and F2F practical classes to socialize, work in groups and manipulate materials.

The last idea we wish to highlight concerns subjectivity. A fourth open question was included in the questionnaire where the students could express what they wanted. In this question, 46% of them mention the lack of empathy and adaptability shown by teachers of other subjects, and the excess of assigned work. Additionally, 13% of them say they feel overwhelmed and 11% mention stress and anxiety.

The COVID-19 pandemic is still present today and education institutions or specific classes could be closed or isolated due to positive infection cases. Performing research on how to increase the quality of the teaching/learning process and how a dramatic situation

emotionally affects students is paramount. We are aware of the limitations of our research and that additional studies on students' preferences are important and need to be carried out.

References

1. Osses, S.; Sánchez, I.; Ibáñez, F. Investigación Cualitativa en Educación. Hacia la Generación de Teoría a Través del Proceso Analítico. *Estudios Pedagógicos* **2018**, *32*, 119–133.
2. BOE. 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. 2020, Num. 67, de 14 de Marzo de 2020, Páginas 25390 a 25400. Available online: https://www.boe.es/eli/es/rd/2020/03/14/463 (accessed on 15 July 2020).
3. Álvarez, D. *Lecturas recomendadas*. E-Aprendizaje. Available online: https://e-aprendizaje.es/category/recursos/lecturas-recomendadas/ (accessed on 7 June 2020).
4. Trujillo-Sáez, F.; Fernández-Navas, M.; Montes-Rodríguez, M.; Segura-Robles, A.; Alaminos-Romero, F.J.; Postigo-Fuentes, A.Y. *Panorama de la Educación en España Tras la Pandemia de COVID-19: La Opinión de la Comunidad Educativa*; FAD: Madrid, Spain, 2020. Available online: https://observatoriofiex.es/panorama-de-la-educacion-en-espana-tras-la-pandemia-de-covid-19-la-opinion-de-la-comunidad-educativa/ (accessed on 10 May 2021).
5. Diez-Gutierrez, E.; Gajardo-Espinoza, K. Educar y Evaluar en Tiempos de Coronavirus: La Situación en España. *Multidiscip. J. Educ. Res.* **2020**, *10*, 102–134. [CrossRef]
6. Demuyakor, J. Coronavirus (COVID-19) and Online Learning in Higher Institutions of Education: A Survey of the Perceptions of Ghanaian International Students in China. *Online J. Commun. Media Technol.* **2020**, *10*, e202018. [CrossRef]
7. Muthuprasad, T.; Aiswarya, S.; Aditya, K.S.; Girish, K.J. Students' Perception and Preference for Online Education in India during COVID-19 Pandemic. *Soc. Sci. Humanit. Open* **2020**. Available online: https://papers.ssrn.com/sol3/papers.cfm$\backslash$?abstract$\backslash$_id=3596056 (accessed on 13 June 2020).
8. Nguyen, D.V.; Pham, G.H.; Nguyen, D.N. Impact of the Covid-19 Pandemic on Perceptions and Behaviors of University Students in Vietnam. *Data Brief.* **2020**, *31*, 105880. [CrossRef]
9. Rosenberg, M.J. e-Learning. In *Strategies for Delivering Knowledge in the Digital Age*; McGraw-Hill: New York, NY, USA, 2001.
10. Area, M.; Adell, J. e-Learning: Enseñar y Aprender en Espacios Virtuales. En J. De Pablos (Coord): Tecnología Educativa. La Formación del Profesorado en la era de Internet Aljibe, Málaga. 2009, pp. 391–424. Available online: https://cmapspublic.ihmc.us/rid=1Q09K8F68-1CNL3W8-2LF1/e-Learning.pdf (accessed on 10 May 2021).
11. Salinas, J.; de Benito, B.; Lizana, A. Competencias docentes para los nuevos escenarios de aprendizaje. *Rev. Interuniv. Form. Profr.* **2014**, *28*, 145–163. Available online: https://www.redalyc.org/pdf/274/27431190010.pdf (accessed on 10 May 2021).
12. Mital, D.; Dupláková, D.; Duplák, J.; Mitalová, Z.; Radchenko, S. Implementation of Industry 4.0 Using E-Learning and M-Learning Approaches in Technicaclly-Oriented Education. *TEM J.* **2020**, *10*, 368–375.
13. Casales, R.; Rojas, J.; Paulí, G. Algunas experiencias didácticas en el entorno de la plataforma Moodle. *Rev. Inf. Educ. Medios Audiov.* **2008**, *5*, 1–10. Available online: http://laboratorios.fi.uba.ar/lie/Revista/Articulos/050510/A1mar2008.pdf (accessed on 10 May 2021).
14. Piñero Charlo, J.C.; Canto López, M.C. Eficacia comparativa de métodos de aprendizaje mixto en la enseñanza de nuevos algoritmos a maestros en formación: Estudio de un caso para la elaboración de directrices de diseño. *Braz. J. Dev.* **2019**, *5*, 7431–7444. [CrossRef]
15. Chandra, V.; Ficher, D.L. Students' Perceptions of a Blended Web-Based Learning Environment. *Learning Environ. Res.* **2009**, *12*, 31–44. Available online: https://link.springer.com/article/10.1007/s10984-008-9051-6 (accessed on 10 May 2021). [CrossRef]
16. Piñero Charlo, J.C.; Costado Dios, M.T. Codiseño de problemas geométricos apoyados en TICs: Estudio de un caso con estudiantes de maestros bajo un modelo de aprendizaje mixto. *Edutec. Revista Electrónica De Tecnología Educ.* **2020**, *74*, 94–113. [CrossRef]

17. Altunay, D. Language Learning Activities of Distance EFL Learners in the Turkish Open Education System as the Indicator of Their Learner Autonomy. *Turk. Online J. Distance Educ.* **2013**, *14*, 296–307.

18. Altunay, D. EFL Students' Views on Distance English Language Learning in a Public University in Turkey. *Stud. Engl. Lang. Teach.* **2019**, *7*, 121–134.

19. Gunes, S. What Are the Perceptions of the Students about Asynchronous Distance Learning and Blended Learning? *World J. Educ. Technol. Curr. Issues* **2019**, *11*, 230–237.

20. Lizzio, A.; Wilson, K.; Simons, R. University Students' Perceptions of the Learning Environment and Academic Outcomes: Implications for theory and practice. *Stud. High. Educ.* **2002**, *27*, 27–52.

21. Noviana, M.; Sukardi, S.; Suryanti, N.M.N. Learning Process during Covid-19 Pandemic from Various Variables in Senior High School. *SAR J.* **2020**, *3*, 160–165.

22. Johnson, S.D.; Aragon, S.R.; Shaik, N.; Palma-Rivas, N. Comparative Analysis of Leaner Satisfaction and Learning Outcomes in Online and Face-to-Face Learning Environments. *Jl. Interact. Learn. Res.* **2000**, *11*, 29–49.

23. Rodríguez, G.; Gil, J.; García, E. Metodología de la Investigación Cualitativa; Archidona: Aljibe. 1996. Available online: https://cesaraguilar.weebly.com/uploads/2/7/7/5/2775690/rodriguez$\backslash$_gil$\backslash$_01.pdf (accessed on 20 May 2020).

24. Jansen, H. La lógica de la investigación por encuesta cualitativa y su posición en el campo de los métodos de investigación social. *Paradigmas* **2012**, *4*, 39–72.

25. Hernández Carrera, R.M. La investigación cualitativa a través de entrevistas: Su análisis mediante la teoría fundamentada. *Cuest. Pedagógicas* **2014**, *23*, 187–210.

26. Alarcón Lora, A.A.; Munera Cavadias, L.; Montes Miranda, A.J. La teoría fundamentada en el marco de la investigación educativa. *Saber Ciencia Libertad* **2017**, *12*, 236–245. [CrossRef]

27. Aguilar, D.H.; Reyes, R. La investigación biográfico-narrativa, una alternativa para el estudio de los docentes. *Rev. Actual. Investig. Educ.* **2013**, *13*, 3. Available online: https://www.scielo.sa.cr/scielo.php$\backslash$?pid=S1409-47032013000300017$\backslash$backslash$&script=sci$\backslash$_arttext (accessed on 10 May 2021).

28. Packer-Muti, B. A Review of Corbin and Strauss' Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory. *Qual. Rep.* **2009**, *14*, 140–143. [CrossRef]

29. Khan, S.N. Qualitative research method: Grounded theory. *Int. J. Bus. Manag.* **2014**, *9*, 224–233. [CrossRef]

30. Medina, M.B.E. Influencia de la interacción alumno-docente en el proceso enseñanza-aprendizaje. *Paakat: Rev. Tecnol. Soc.* **2015**, *8*. Available online: http://www.udgvirtual.udg.mx/paakat/index.php/paakat/article/view/230/347 (accessed on 20 August 2020).

31. Muzammıl, M.; Sutawıjaya, A.; Harsası, M. Investigating Student Satisfaction in Online Learning: The Role of Student Interaction and Engagement in Distance Learning University. *Turk. Online J. Distance Educ.* **2020**, *21*, 88–96.

32. Landrum, B.; Guilbeau, C.; Garza, G. Why Teach? A Project-ive Life-world Approach to Understanding What Teaching Means for Teachers. *Qual. Res. Educ.* **2017**, *6*, 327–351. [CrossRef]

33. Bagrıacık Yılmaz, A. Distance and Face-To-Face Students' Perceptions towards Distance Education: A Comparative Metaphorical Study. *Turk. Online J. Distance Educ.* **2019**, *20*, 191–207.

34. Rodicio-García, M.L.; Ríos-de-Deus, M.P.; Mosquera-González, M.J.; Penado Abilleira, M. La Brecha Digital en Estudiantes Españoles ante la Crisis de la Covid-19. *Rev. Int. Educ. Para La Justicia Soc.* **2020**, *9*. Available online: https://revistas.uam.es/riejs/article/view/12571 (accessed on 7 February 2021). [CrossRef]

35. Hussein, A.M.; Al-Chalabi, H.K.M. Pedagogical Agents in an Adaptive E-Learning System. *SAR J.* **2020**, *3*, 24–30.

36. Valero, N.; Vélez, M.; Durán, A.; Portillo, M. Afrontamiento del COVID-19: Estrés, miedo, ansiedad y depresión? *Enfermería Investig. Investig. Vinculación Docencia Gestión* **2020**, *5*, 63–70.

37. Tuncer, M.; Yilmaz, Ö. Relations Attitude towards Mathematics Lessons: Anxiety and Academic Success. *J. Res. Math. Educ.* **2020**, *9*, 173–195. [CrossRef]

38. Zhang, Y.; Zhang, H.; Ma, X.; Di, Q. Mental Health Problems during the COVID-19 Pandemics and the Mitigation Effects of Exercise: A Longitudinal Study of College Students in China. *Int. J. Environ. Res. Public Health* **2020**, *17*, 3722. [CrossRef] [PubMed]