

Article

Flipped Classroom in the Context of Higher Education: Learning, Satisfaction and Interaction

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Abstract: Educational governmental institutions have recommended implementing blended learning in higher education to respond to the “new educational normality” caused by the COVID-19 pandemic, although this is not a new challenge. Over the last few decades, higher education institutions have tried to incorporate the use of technological devices to university teaching, by redesigning and optimizing the learning experiences through a mixed teaching model. In this context, the Flipped Classroom (FC) model is one of the pedagogical models that is revolutionizing the scope of education. However, there is still not enough evidence of its advantages and disadvantages in the university stage. Therefore, it is important to analyze the impact of the FC on the learning, satisfaction and interaction of the different agents of the university community. Due to the idiosyncrasy of the present study, an exclusively qualitative and longitudinal methodology was selected; thus, 266 interviews based on open questions were conducted throughout the last five years. The results show that students value the FC model positively and corroborate its great potential from academic, competence, personal and social perspectives. Nevertheless, a small group of students are still very critical about the model and would prefer to keep using a traditional methodology, mainly due to the lack of habit using active methodologies and establishing the learning commitment required by such methodologies.

Keywords: Flipped Classroom; blended learning; higher education; information communication technologies; teaching methodology; educational innovation



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1. Introduction

In 2020, due to the COVID-19 pandemic, governments throughout the world had to enforce long periods of lockdown, forcing people to stay home, with very limited personal contact [1]. This unusual fact had a great impact on the educational scope, due to the closing of centers and the need of educators to adapt their teaching to online models in a record time [1–4]. Remote learning has become a life jacket for education [1], although the opportunities offered by digital technologies go far beyond a provisional solution to a crisis [3–5]. Thus, once the hardest period was over, and being eager to face the academic year 2020–2021 as positively as possible, educational governmental institutions recommended the combination of face-to-face lectures with online teaching [1,6].

However, although this is not new, the challenge of assuming the development of blended learning (B-learning) in HE is not unknown to the university educational community. During the last few decades, higher education (HE) institutions tried, with varied degrees of success, to incorporate the use of technological devices to university teaching, by redesigning and optimizing the learning experiences through a mixed teaching model [3,7–10]. In this sense, the COVID-19 crisis revealed many weaknesses, deficiencies, omissions and vulnerabilities that the educational scope faces [11], such as the need of training in the use of ICT for teaching and for the total availability of and access to technological resources for both teachers and students [1,2,5].

In this sense, from its presence in the educational context, B-learning emerges as a modality with its own identity [12]. In a flexible, balanced and integrated manner,

B-learning combines face-to-face and online teaching using the greatest potential of each of them [13]. B-learning is recognized by the research community as an educational modality that: (1) represents a change from passive to active learning; (2) enhances the acquisition of knowledge through the use of technology; (3) improves the individualization and personalization of teaching; (4) favors the development of autonomous working and learning skills; and (5) characterizes the role of the teacher as a guide in the creation of new knowledge [8,10,13–15]. Therefore, it enables new learning spaces, greater access to education and new teaching and evaluation strategies for teachers adapted to the “new normality” [8,16,17].

However, the B-learning modality is very wide, and it does not establish a specific strategy or model for its development [18]. Thus, nowadays, within the B-learning modality, new teaching models are emerging, such as the Flipped Classroom (FC) [19–21], which can be the key to implement the use of technologies in the classroom and truly develop B-learning in a structured manner [16,18,22]. In this sense, the attractive aspect of the Flipped Classroom (FC) has grown, becoming increasingly more frequently used [23], especially lately, due to the COVID-19 situation, since it allows the teaching model to be changed quickly [24]. The term refers to a new teaching model that reverses the traditional class model [25]. This model moves the content transmission processes outside of the classroom, turning the students into the ones in charge of acquiring the content before attending the lecture and using the class time to work on practical and applied aspects, in which they need more detailed guidance from the teacher [19,26–29]. The latter provides the content and the learning material to the students before the lecture, allowing them to study at their own pace at home and in their free time [20,30]. In this way, the class time is cleared to create active and meaningful learning situations [23,31–34], such as facilitating the participation of the students, asking questions and discussing actively, problem solving, the application of ideas, experiments and evidence-based learning, among others, thus ensuring that the lecture is more entertaining and interactive [18,20,28,29,35,36].

A literature review on FC showed numerous studies and experiences reporting on the use of this model in HE [7,9,16,18,26,29,31,35,37–50]. It has been reported that FC has positive effects on the educational process [43]. However, there are different opinions and results among the reviewed studies, which are analyzed below [21,50].

A large number of studies assert that FC allows the increase in academic performance, improving the understanding of the content of the subject and reducing the failure rate in comparison to fully online teaching and traditional teaching [9,16,18,24,35,38,43,46,48,51–59]. In this respect, the results derived from these studies show that FC adapts to the learning needs and promotes the personalization of teaching [29,51,60]. Moreover, it also fosters autonomous learning, facilitating the acquisition of strategies to learn to learn [24,30,38,47,60], thus favoring commitment and motivation toward learning [49,58,61,62].

Other studies consider that FC exerts an indirect influence on the improvement of the academic performance of the students [35,63] and that its benefits on learning are rather related to the fact that students learn through models focused on active learning and methodologies [21,64]. Therefore, in this learning model, students leave their eminently passive role and assume a mainly active role [65]. In this sense, their new leading and active role in the implementation of FC is an element that has been widely studied by different authors, who highlight a strong component of the responsibility, motivation and participation of the students in their learning experiences, through which they learn to learn [28,35,57,62,66–68]. However, these active pedagogies are not always welcomed by the students, who point out their lack of inclination for active learning and performing tasks outside of the classroom, admitting that they are not used to taking control of their own learning [31,35,39,69]. Therefore, some studies state that, although the general experience was good, not all students agreed that FC contributed to improving their learning results [29,70].

In this sense, Refs. [47,48] described that the results do not explicitly demonstrate an agreement among the students regarding FC, and that there are two well-defined

antagonistic groups. On the one hand, the global results about FC reflect that students consider that the implementation of this model is positive and they feel satisfied with it [16, 29,35,36,43,53,58,59,63,71], favoring positive attitudes among them, and thereby promoting their participation and motivation toward learning [20,43,51,53,54,62,63,72]. On the other hand, different studies state that FC reduces the motivation of the students [73], even reporting resistance to the FC approach [74]. Students require a high level of self-motivation and organizational skills, since learning in FC involves a more proactive effort than the traditional model; therefore, these studies also point out that students often find it hard to adapt to this change [29,62,63].

It is worth highlighting that those studies that analyze the emotions felt during FC [18,35,39,75] reveal that the students who performed the FC experienced positive emotions toward this model, perceiving it as fun, interesting and practical [35,75], although, in other studies, students have also described negative emotions, as they felt confused, insecure or disoriented [18,39]. Among the causes of these negative perceptions, the development of FC depends on the characteristics of the students, since some of them do not have the necessary academic training, scientific reasoning, self-directed learning skills or commitment to assume the active role required to adapt to FC [19,31,50,70].

Time is also a controversial aspect [34], although it is often described as satisfactory, since it adjusts to the needs of the students, and it is dedicated to understanding the content of the subject and performing motivating tasks [45]. Students state that carrying out FC takes a lot of time at home and requires more time for learning compared to traditional teaching models [33,34,38,53], along with the time spent learning to organize their schedule and acquiring self-regulation skills [24,76]. It would be very difficult to carry out FC in all the subjects due to the timetables and time required to conduct autonomous learning [18,29,39].

To minimize any negative impact on the students, it is necessary for the FC model to be adequately planned [27], paying special attention to establishing a strong link between the tasks and resources used inside and outside of the classroom [9,29,36,77] and including evaluation tools based on such a model [74]. Moreover, in order for FC to be effective, studies suggest that the teacher should present the model in a clear and concise manner, incorporating a theoretical perspective of the methodology [74]. In this regard, other studies assert that students need well-defined and well-structured guides and supports [22,78], as well as a bidirectional source of feedback between the students and the teacher, and vice versa [9].

Furthermore, some studies show that the implementation of this model can have limitations as a consequence of the change of roles experienced by educators. Regarding the role of the teacher, this is crucial in the FC model, since he/she is no longer «a sage on the stage» but a «guide on the side» [29,42], thereby becoming a mediator between the knowledge and the student [68,75,79]. The teachers assume an active but cooperative role during the entire teaching process by providing counseling, guidance, scaffolding and feedback to the students and trying to satisfy the needs of the latter [28,79,80]. To sum up, teachers quit individual leadership to adopt the role of transformational leaders [68]. Therefore, FC poses a new idea of the teaching role [80].

However, this change of role involves some negative elements. On the one hand, the implementation of the role of the teacher in FC involves great dedication. Secondly, it requires teachers to change their mentality and adapt to a new dynamic, as well as to develop a more student-centered educational practice [27,29,54]. Thirdly, teachers must select or design quality didactic materials before carrying out a session [9,24,77], which requires the former to be technologically competent in order to efficiently use and manage technology for teaching [76]. In this sense, teachers request greater institutional support that fosters the necessary training to carry out FC in their classrooms, as well as more time for the creation of didactic materials [18,24,29,76]. Lastly, some studies reveal that some students do not perceive this change in the teaching role positively and demand greater presence of the teacher during the educational process [9].

Regarding the interpersonal relationships that are established under the FC model, the literature highlights that such relationships are more fruitful and useful than those established in the traditional methodology. Firstly, FC increases the student–teacher interactions and creates more opportunities to provide the students with feedback, which can improve learning [28,45,54,64]. Secondly, some studies also state that FC creates a collaborative learning environment in the classroom, since the students interact with their peers more effectively [50,54,67,72]. Other studies show that the discussions in small groups provided more opportunities to the students to clarify doubts and establish interactions, favoring a more meaningful learning and the development of critical thinking, which occurs to a lesser extent in the conventional methodology [18,49,81]. Different authors obtained positive results regarding the development of critical thinking and creativity [38,82].

Thus, considering the diversity of the results reported in the studies about FC, it is difficult to identify under which conditions and in which way the FC approach can be valuable as a pedagogic alternative. The aim of the present study was to know and understand the experiences described by students throughout the implementation of this model in the classroom, in order to verify whether it has a positive impact on the teaching–learning process, and to analyze the essential design aspects for the adequate development of this method. Considering that most of the studies conducted on Flipped Classroom are focused on an element or aspect about the FC model, the aim of the present study was to analyze the phenomenon from a holistic approach, in order to consider all the possible variables and aspects that influence this phenomenon, as well as the relationships between them.

2. Materials and Methods

2.1. Research Methodology

Based on the idiosyncrasy of the present study, an exclusively qualitative methodology was selected, framed within the interpretative paradigm, since it allows social and educational phenomena to be understood and interpreted from a comprehensive, holistic and thorough analysis [83]. Therefore, an interpretation process was selected with the aim of discovering concepts and relationships in the raw data and then organizing them in a theoretical explanatory scheme [83]. In this sense, there is a preference for observation strategies and open interviews, thereby discarding the search for causal relationships, which can be done with quantitative methodologies. Thus, researchers prefer to establish global relationships, aiming to preserve the complexity of the phenomenon and the direct applicability in the context.

To this end, we gathered the opinions of students about their experience in a subject with the FC model. Referring to the procedure, at the beginning of the subject, the fundamentals of the FC model were explained to the students, providing them with information about the schedule of the course. At the end of the academic semester and after experimenting this pedagogic model, the students were interviewed, with the aim of obtaining information for the realization of the present study.

To conclude and respect the holistic approach of the study, we decided to analyze the data from a Grounded Theory approach or method. Although a literature review of the phenomenon was initially carried out in order to create the corresponding dimensions and elaborate the interview protocol, the study is eminently inductive. This way, there are more probabilities of generating a theoretical model that contemplates all the possible variables and aspects, improving the understanding of the phenomenon [83]. Moreover, the Grounded Theory provides a significant guide for the analysis of the data through procedures such as the Constant Comparison Method, which is described in a further section of this article [84].

2.2. Sample

The sample, which was purposeful and non-probabilistic, was constituted by the 1st-year students of the degree of Early Childhood and Primary Education of the University of Extremadura (Spain), who had received lectures in one of their subjects with the FC model. As can be observed in Table 1, this is a longitudinal study that collected data through different groups of students who undertook the different subjects between the years 2016 and 2021. It is important to indicate that all students registered in the different subjects participated in the study; thus, the sample is the study population/universe, i.e., an unusual aspect in qualitative studies, which usually have much lower percentages. The population consisted of a total of 266 students, distributed into 7 groups, who participated in the study from different subjects and different academic years.

Table 1. Sample distribution.

Participants	Group	Subject	Year	N° by Group
From P1 to P27	Group A (GA)	ODAECH ¹	2016	27
From P28 to P34	Group B (GB)	DTRR ²	2017	7
From P35 to P80	Group C (GC)	ECO ³	2017	46
From P81 to P139	Group D (GD)	ECO	2018	59
From P40 to p186	Group E (GE)	ECO	2019	47
From P187 to P226	Group F (GF)	ODAECH	2020	40
From P227 to P266	Group G (GG)	ODAECH	2021	40

Notes: ¹ Subject: Organizational Didactic Aspects of Early Childhood Education (ODAECH); ² Subject: Didactic Technological and Research Resources (DTRR); ³ Subject: Educational Center Organization (ECO).

The sample consisted of 37% men and 63% women between the ages of 17 and 38, with 50% of the participants being 18 years old. (Figure 1)

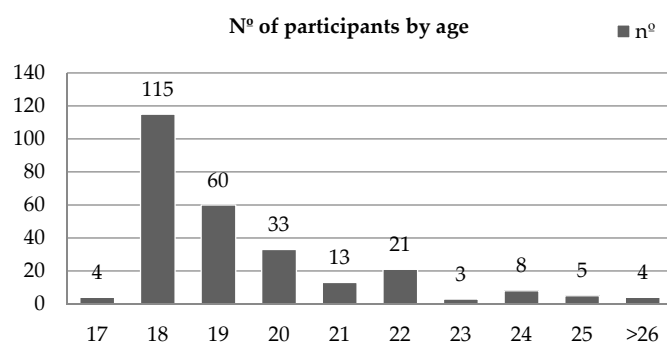


Figure 1. N° of participants by age.

2.3. Data Gathering Instrument

To gather information related to the perception of the students toward FC, a structured interview was conducted, with 40 short open questions, with the aim of obtaining data about the feelings of the participants [85]. Thus, the script of the interviews had a predetermined structure that was previously designed by the researcher based on the theoretical foundation, specified in three dimensions: (a) methodological design, (b) learning and (c) satisfaction and motivation (Table 2).

Table 2. Structured interview script.

(A) Methodological Design	(B) Learning
<i>(a.1) Methodology</i>	19. Do you think that dedicating time of the classroom to practical activities is more beneficial for your learning? Why?
1. Describe what type of activities you have carried out with FC and which of them were more valuable for your learning.	20. How did you organise your work and learning outside of the classroom?
2. What was your role as a student in the FC model?	21. Did you prepare the class at home as requested by the FC model?
3. What role did the teacher play in the FC model?	22. Do you consider that this methodology is more individualised and has respected your learning pace?
4. What was the role of your classmates in the FC model? How were teamwork and collaboration?	23. Does this way of working better suit your learning needs? Why?
5. What is the most useful characteristic of this methodology?	24. How is your learning influenced by the communication and interaction with the teacher developed in the FC model?
6. Did you have any difficulties to follow the methodology? Which difficulties?	25. How is your learning influenced by the collaboration and teamwork developed in the FC model?
7. What suggestions would you make to improve the activities with FC?	26. Do you think that discussion as a learning activity improves the efficacy of learning? Why?
<i>(a.2) Evaluation</i>	27. Did it improve your learning process? What aspects have improved?
8. How do you value the evaluation process you carried out?	28. Which aspects of this methodology did not help your learning?
9. Do you consider that the evaluation is consistent with the methodology?	29. Did you increase your mark in this subject due to the methodology? Explain your answer.
10. Would you have liked it if a different type of evaluation was used?	(C) Satisfaction and motivation
<i>(a.3) Time</i>	30. Did you find this new methodology interesting? Why?
11. Can you estimate the number of hours you have dedicated to this subject?	31. What general valuation would you make of the FC model?
12. Have you increased the learning time with this methodology with respect to other subjects? Is it an advantage or a disadvantage for you? Why?	32. Would you register in another class with the FC methodology? Why?
<i>(a.4) Digital tools and digital didactic materials</i>	33. Did you like this methodology better than the traditional methodology? Why?
13. What types of materials have you used?	34. Did the FC model make you have a more positive attitude toward learning? Why?
14. Were the digital materials accessible at all times? Have you read or visualised the material more than once?	35. Are you happy or enthusiastic about learning this way? Why?
15. Were you able to choose other digital materials from the Internet that better adjusted to your learning style?	36. Have you felt motivated for exploring and learning with this methodology? Why?
16. How would you have liked the materials to be?	37. What other emotions have you experienced during your learning with the FC model?
17. Did you use the digital tools proposed by the teacher to perform the activities in the classroom? Which ones and how did you use them?	38. Briefly list the advantages of the FC model.
18. Did you use other additional digital tools that the teacher had not proposed and which helped you in the learning of the subject matter? Which ones and how did you use them?	39. Briefly list the disadvantages of the FC model.
	40. Provide any additional comment about your experience with FC.

2.4. Analytical Strategy

Grounded Theory was the key to interpret the qualitative results of the present study, since it specifies the procedures of qualitative analysis with the aim of generating the theory in a systematic manner [83,86]. This data interpretation procedure can be divided into four stages [83]:

1. Open coding, data comparison: the categorization and comparison process was conducted in summary matrices.
2. Axial coding, integration of each category with its properties: the process of synthesizing and selecting the important information is reflected in the creation of memorandums, which point out the first impressions of the gathered data.
3. Selective coding, delimiting the theory that begins to develop: this process was conducted through the creation of an emerging scheme that narrates the relationships between the categories, describing the process or phenomenon.
4. Theoretical saturation of the incidents of each category: the data gathering is terminated, as no further ideas or relationships emerge to expand the investigation, thereby proceeding with the description of the results of the present study.

2.5. Elaboration of Results

As a result of the constant comparison of the categories, the theory is fed or modified and becomes more consistent. For the development of the theoretical writing, which narrates the relationships between the categories from central concepts, regarding the number of students that agree in the same idea in a sub-category, these numbers appear in brackets, e.g., (12), (35), (7). Moreover, to gain credibility and clarity in the narration, literal quotes of the participants are used. With the aim of ensuring the fluidity of the reading, these quotes are accompanied by the reference of the sub-category code (e.g., MET_ANT), the code of the group which the participant belongs to (e.g., GE) and the code of the participant (P141).

3. Results

3.1. Methodological Design

3.1.1. Methodology

The students defined FC as a methodology founded on home studying (29) and performing tasks in the classroom (51), both theoretical and practical or content-application tasks. Among the theoretical activities, the most valued activity was completing the "Kahoot!" questionnaires (101), which were conducted once per week and helped in the followup of the subject. The most frequently mentioned practical application activities were the experimentation workshops: drawing workshop (28), teaching role workshop (17), cardboard and plasticine workshop (12), dressing-up workshop (11), games workshop (10), debate workshop (6) and stands workshop (5). The participants also pointed out those activities related to the creation of didactic materials, such as audiovisual materials (29), storytelling (16), concept maps (11) and infographics (4). Similarly, 80 participants stated that all the activities were valuable for the obtained learning.

"The activities were both didactic and theoretical. It was wonderful because most of these activities were a combination of the two types. I love game-based learning; I think it is something that should be taught almost "mandatorily" in the classrooms" (MET_ACT, GE, p141).

3.1.2. Materials Used

The participants had a positive view of the digital tools used in FC, considering them as *"innovating and far from the past"* (MAT_DESEO, GA, p1). Most of the students used electronic devices (174) with Internet connection (22). There was a high tendency toward the use of mobile devices, such as laptops, smartphones and tablets (147) to surf the Internet (12) in the search for information (26). They also used applications (29), such as "Creately",

“Genially” and “Kahoot” (22) to prepare the theory, create the activities and manage the evaluation.

“Yes. For instance, Creately, which is a very useful application to create concept maps. Another digital tool I used was GoAnimate, which allows creating digital animations and facilitates the process of storytelling” (MAT_UTILI, GA, p26).

These digital tools were complemented with the use of didactic materials proposed by the teacher, and were used both analogically (24) and digitally (9) to visualize the contents both during the class and at home. Based on the availability of the didactic materials, most of the participants highlighted that the materials used *“were easy to download, use and understand” (MAT_ACE, GA, p24)*, thus they were totally accessible (259). However, there were some access problems related to the low digital competence of some students (4) or to the connection itself (3), and thus the participants decided to use alternative materials and resources with which they were more familiar (91). Nevertheless, a large portion of the students did not need complementary and/or alternative materials (184), and the materials used were the most suitable (206), since they thought *“the materials were good, and would not change them” (MAT_DESEO, GD, p121)*.

3.1.3. Evaluation

Regarding the evaluation process, most of the participants perceived it positively, based on the continuous evaluation and in agreement with the methodology (94), and stated that such a process is good and that they would not change anything from it (130). Thus, for instance, a participant pointed out: *“I consider it important to evaluate everything, including the work carried out in the classroom and in the workshops, that is, valuing the practical aspects instead of having mainly exams, since, in the end, we worry more about the marks than about learning” (MET_VAL, GG, p260)*. Only seven students preferred the conventional system and be evaluated through an objective test about the content of the subject.

3.2. Interaction and Collaboration among the Different Agents

3.2.1. Group Cohesion and Teamwork

By working in groups in the classroom, the FC model improved the competences to work cooperatively and coordinately (57). Thus, the participants considered that the collaborative work performed in FC promoted group dynamics to unite the role of each participant, structure the work and discuss the ideas (49). Firstly, the students involved in the present study valued the teamwork in FC positively, asserting that this type of model contributes to group cohesion, as two students stated: *“we were all as one; thus, we all played a very important role” (AL_GRUP, GD, p110)* and *“they were a great support and help in certain situations, since we worked as a group at all times, which favoured our relationship and our performance” (AL_GRUP, GG, p250)*.

Moreover, the participants showed that FC favoured good organizational skills and teamwork (37). They asserted that collective work in the classroom was conducted through *“Google Drive” (78)*, *“since all the members of the group could edit it at the same time” (COM_CAS, GC, p56)*, which facilitated the effective realization of the activities. Furthermore, most of the students highlighted the existence of some type of communication beyond the academic context (238) with the use of electronic devices such as smartphones and laptops (91), through *“social networks, to communicate better” (COM_CAS, GC, p79)*. Similarly, *“to finish a task that was initiated in class” (COM_CAS, GC, p56)*, the groups were organized to meet up face-to-face, e.g., *“the entire group met in the library and prepared the class” (ORG_TRA, GF, p205)* or online, e.g., *“each of us at home from a Drive” (ORG_TRA, P93)*.

Lastly, some students (59) pointed out that, through the proposed discussion strategies, the FC model favoured the development of an active and/or participatory role within the groups, promoting the contribution, creation and continuous discussion of ideas. The most frequently mentioned strategies to reach agreements and establish intermediate points of view were related to listening to and sharing different opinions (26), which served to unite

ideas (122), combine learnings (83), to reason and ponder (8), to empathize (3) and to learn from mistakes (9).

“However, sometimes there were disagreements. In the end, we managed to solve our differences” (AL_COM, GD, p135).

Nevertheless, other students considered that discussion was not productive for learning (35), *“since many people prolonged it and created tension” or “bad vibes” with the others (AL_DIS, GF, p202)*. In some groups, there were cohesion problems related to the difficulty of reaching agreements due to the fact that they had different perspective about the study topic (4). Moreover, *“the involvement of the group members was never the same” (MET_DIF, GE, p147)*, or the effort was not enough (4), thus some students preferred to work individually and did not value the teamwork conducted in the FC model in a positive manner.

“It helps when considering other opinions and other ways of working, but in terms of pace or dependence, I prefer individual work” (APRE_GRUP, GA, p24).

3.2.2. The Role of the Teacher

According to the students, the role of the teacher was characterized by its active and participatory nature (58), acting as a guide of learning (46), as a participant stated: *“they played a guiding role for our learning” (PROF_PAPEL, GG, p261)*. The interaction between the teacher and the students was greater with the FC model than with other methodologies (135). Furthermore, communication was good (141) or very good (65), providing clear instructions of how the tasks had to be solved (252), e.g., *“we always knew what to do and she solved our doubts” (PROF_INSTR, GG, p264)*. Teachers constantly showed themselves as eager and available to help (40), offering the necessary support for learning (250). Therefore, 126 students stated that they would not change anything from the role of the teacher.

“Communication with the teacher was very good and, largely due to the type of methodology, he interacted more with us” (PROF_COM, GD, p138).

However, not all students agreed with that, and some did not see this new teaching role in a positive manner. A group of students considered that the teacher did not worry about the process or did not attend to the needs of the students as he/she should. Thus, they demanded an increase in the attention to the students (44), more interaction and support and guidance actions (23) and to have more doubts solved (14), that is, as a participant pointed out, *“to help us more frequently and show more interest for us” (PROF_NED, GC, p40)*, and to spend more time transmitting the content (32), *“explaining some difficult parts of the theory” (PROF_NED, GG, p230).*

3.3. Learning and Motivation

In the analysis performed by the students on their learning, they recognized that the role they played was *“active, very active” (AL_PAPEL, GE, p140)*, being the leaders of their learning (161). Thus, they consider the FC model to be better and more effective than the traditional methodology (126), with a more meaningful learning. In this sense, 216 students improved the final mark of the subject, and only 6 who maintained their mark with respect to the subjects with traditional methodologies.

“Yes, since the traditional methodology is based on routines, memorizing and studying to pass, not to learn. On the other hand, this methodology gives us the opportunity to learn by experimenting through seminars, which help to learn knowledge without memorizing” (SAT_TRA, GF, p225).

Likewise, the participants asserted that the experience with the FC model favoured their learning process (245), improving the acquisition of knowledge (17), while they saw that their learning paces were respected and that they received an individualized teaching (187): *“I set my guidelines and pace” (MET_IND, GC, p50)*. Up to 155 students highlighted that FC *“adjusted to [their] learning needs” (APRE_IND, GC, p79)*. However, it is important

to point out that a small group of participants found that the model did not respect their learning pace (21) or needs (18).

Regarding the usefulness of the methodology, the students highlighted that the weekly study scheduled favoured the assimilation of contents and learning, promoting meaningful learning (24). In regard to the organization of the work outside of the classroom, most of them (215) stated that they had prepared the classes at home, e.g., *“studying every week”* (ORG_TRA, GF, p206) for the weekly exams (30). Very few students admitted that they did not prepare anything (12) or had time to prepare it all in class (8). In general, the participants increased the time they dedicated to the subject, thus increasing their learning toward it (84), considering an estimation of 0–2 h per week (34), 2–4 h per week (71), or 4–8 h per week (41). Only eight students pointed out that they did not increase the time they dedicated to the subject.

“I believe that, approximately, I dedicated an average of 5 to 10 h per week to the subject. I did increase the time. I think it was the subject in which I learned the most” (MET_DEDIC, GE, p140).

The general valuation of the practical lectures was also positive, as a student stated: *“for two reasons. Firstly, it is more entertaining to work in that way; and, secondly, we get to know the materials better”* (PRAC_CLAS, GG p250). In this sense, there was almost full consensus when asserting that the practical lectures were beneficial for the learning (261), emphasizing that: *“with the practical lectures, [they] internalized to a greater extent”* (PRAC_CLAS, GA, p2), the content (30); it was easier (64) and more entertaining (28) to learn; the theory was connected to the practice (28); time in class was optimized (7); and doubts could be solved while performing the tasks (33): *“correcting the mistakes on the fly”* (PRAC_CLAS, GG, p246).

“The most useful characteristic of this methodology is that, after studying the handouts freely at home, we reinforced such knowledge in the classroom through activities, which allows internalizing the new knowledge in a more effective and long-lasting manner” (MET_UTIL, GG, p253).

Furthermore, the FC model made the students *“feel like [they] were participating and in charge from the first minute. It develops the sense of responsibility and leadership”* (ACTI_APRN, GE, 140). Therefore, they felt they were in charge of their learning (19), facilitating autonomous learning (12) and the management of learning (24), thus improving their organizational skills (45) and their capacity to learn to learn (2).

“When you are given so much freedom, you have to be responsible and know how to organize yourself” (MET_UTIL, GD, p105).

Regarding the attitude of the students toward the learning experienced during the FC, 150 students were happy or enthusiastic about learning with this model, stating that it promoted learning (31) and increased the involvement for the subject (21). Moreover, the participants asserted that they felt motivated (191) to explore and learn about the content, since *“it was fun and every week it motivated [them] to improve their mark and to know how [they] were doing in the subject”* (MOT_CONTE, GD, p94), in addition to the practical part of the subject *“due to the motivation from working with such practical new methods”* (MOT_CONTE, GG, p64). However, other students pointed out that they were not motivated (20), or were only motivated sometimes (7).

In this way, the students had a very positive or good perception toward the subject thanks to the FC model carried out (176), emphasizing that *“[they] did not miss a single lecture, since [they] liked them and helped [them] to learn a lot”* (MOT_APRN, GF, p193). Nevertheless, as in the case of the other aspects, there was a group of participants who did not have a positive attitude, at least from the beginning. It is worth highlighting that the change of methodology is a disturbing issue for students, who face it from a skeptical perspective, since *“[they] were not used to such a methodology, but shortly began to appreciate it”* (MOT_APRN, GG, p246). Therefore, a small group of students considered that the traditional methodology was better than this new model (7), mainly because it is more useful to have the handouts

explained (4), as was stated by one participant: *“no, because I see it is more useful for the teacher to explain the handouts in the class, and then I can use my free time for the practical activities, and not the other way around”* (SAT_TRA, GC, p68).

3.4. Satisfaction and Difficulties

3.4.1. Satisfaction

According to what was reflected about the satisfaction of the students with FC, 235 of them found it interesting, whereas only 6 participants did not find it interesting. Furthermore, 228 students would register in another subject in which they implemented this model, and explained that *“[they] would like it to be carried out often with other subjects”* (SAT_VAL, GG, p252). On the other hand, 26 of them would not register in a subject with FC, and 11 showed doubts.

“I think this was a very interesting methodology to be applied in a classroom; I also think it was effective and innovating, and that, with good management and accompaniment from the teacher, it can improve the academic results” (MAT_PRO, GC, p63).

As can be observed, the participants had a quite positive perception toward the FC model and pointed out concepts to define it, such as: innovating (43), entertaining (30), dynamic (67), positive (32), surprising (133), different (54), creative (2), productive (16), practical (61), interactive (10), novel (39), interesting (38), attractive (7) and motivating (33). On the other hand, there were also negative concepts, such as improvable (11) and negative (6), and some students preferred other methods (2).

“It was very surprising how we could learn much more in a fun way than with a master class, which is more boring and tiresome” (MAT_PRO, GD, p112).

Following this pattern, the participants who had experienced the FC model stated, in a general manner, that they had felt positive emotions (79), among which they highlighted, to a greater extent, happiness (61), enthusiasm (37), motivation (40), satisfaction (19), empathy (7), calmness (5), excitement (2), fun (13), interest (5), responsibility (2), gratitude (2), freedom (2) and curiosity (3).

“Happiness. It was one of the few, or perhaps the only one, that I attended with eagerness...” (EMO, GE, p164).

However, there were also some negative emotions, such as effort (24), intrigue (13), nervousness (11), frustration (8), confusion (1) risk (1), patience (1), sadness (3), distress (1), desperation (2), disappointment (2), irritation (6), laziness (2) and anxiety (6), due to the lack of knowledge about this methodology.

“A bit of everything. Fun with the activities, nervousness and distress with the “Kahoots”. Sometimes frustration from my team” (EMO, GE, p183).

3.4.2. Difficulties

Regarding the difficulties perceived by the students in the development of FC, most of the students claimed that they did not have any difficulties (224 people). Thus, generally, the students did not find any negative factor in the development of FC, since all its elements had helped in their learning (165).

Among those who had found difficulties, 10 students mentioned that they found not too many difficulties, 5 students found difficulties only at the beginning of the subject, caused mainly by the change of methodology (16), as was stated by one participant: *“at the beginning, I was not used to work this way. I thought it was strange to watch videos at home and then comment them in the class and do the tasks”* (MET_DIF, GA, p12). These different opinions highlighted that the main difficulties they found were related to the expansion of the content (7), problems with “Kahoot” (6), negative involvement of some classmate (7), or the way of learning the subject matter (11) and having to study it without receiving a previous explanation (14). Thus, some of them preferred a traditional teaching method and a theoretical explanation in the classroom (9): *“I think that it would have been better to have a*

normal lecture and then do the activities at home, because they were not difficult activities, and we could have completed them without much explanation” (PRAC_CLAS, GC, p68).

Some of the propositions for improvement provided by the participants to favor their learning process were related to the methodological design and the role of the teacher, such as: more active participation from the teacher (10), increasing the explanations of the teacher with the most important aspects of each topic (11), more feedback and doubt-solving (10), greater involvement in the management of the groups (16), improving the content of the activities and the theory (30) and expanding the time to perform the activities in the classroom (10).

However, as was analyzed throughout this study, most of the participants were very happy with the methodological design of FC carried out and they considered that nothing should be changed in it (132), since, as was stated by one of the students: *“I had never had such an innovating and entertaining class like this in which I learned so much” (MET_PRO, GD, p115).* Thus, when comparing this subject with others developed in the same academic year, one student concluded that:

“Actually, I think this was one of the most interesting subjects of the entire degree. It is the one I liked the most, in every aspect. The contents are dynamic, clear and correct. The classes are fun and there was a good and relaxed environment. It promoted team spirit and allowed us to get to know classmates with whom we never interacted before, and, regarding oneself, it motivated me; it made me more autonomous and confident toward applying what was learned” (MAT_PRO, GF, p202).

4. Discussion

The participants had a positive view of the effects of FC on learning [45,57,59,71], considering that it provides beneficial learning experiences to them [52]. A student-centered learning is generated, given that they are the leaders of the didactic process, creating their own learning through the work performed both outside and inside the classroom [9,49].

The results of the interviews show that FC favors the motivation and attitude toward the subject [43,51,53,54,62,63,72,73]. Thanks to the practical activities carried out in the class [60], meaningful learning is promoted, as well as the practical application of the theoretical contents [65], which is related to an increase in the academic performance and results [9,16,18,24,34,35,43,51,52,55–57]. It is also reflected that, according to students, the type of teaching experienced with FC was individualized and respected their own learning paces [29,30,38,51,60,78,87]. Similarly, this pedagogical model potentiates the responsibility and autonomy of the students toward the learning process [49], with the classroom being the place where the meaning of learning resides and where they ask the teacher for help, who acts as a mediator between the student and the content [35,68,79].

Among the most useful characteristics of FC, the participants highlighted cooperative work [88]. Great value was given to group activities and teamwork, which favoured peer support in difficult moments [28,46,47]. Likewise, they considered that the FC model promotes discussion as a booster of learning. Discussion allowed and encouraged everyone to contribute and listen to other opinions. This aspect helped the students to reason and reflect on different matters [29,82]. Moreover, communication in the classroom with the teacher was very positive, generating a good climate of support and guidance to learning [42,72,81]; thus, the students considered that the relationships with the teacher were better in this model than in the traditional model [28,45,64].

Therefore, the participants stated that this model was more productive than the traditional methodology, being satisfied with it and expressing positive emotions throughout the entire process [16,29,34,35,43,58,71,75,89]. However, some students showed resistance to the FC model [47,74], mainly due to the change of roles between the teacher and the student. This group of students found it difficult to adapt to the change and defended a more negative and critical view of the pedagogical model carried out [29,48,63,69,70]. These students asserted that the traditional methodology better adjusted to their learning needs and recognized that they were not used to carrying out student-centered method-

ologies [19,70]. It can be considered that this lack of experience with more active didactic methodologies [31], especially with FC, is the major cause of negative emotions when using a methodology different from the traditional one. Therefore, the main propositions to improve the methodological design developed are mainly related to the preference of students for the traditional methodology. Thus, it is necessary to train and inform the students about more student-centered methodologies, in order to transcend the initial student resistance and achieve its maximum impact on their academic performance and learning, as well as to help them appreciate its value [44].

Limitations and Future Research

From a holistic approach, the present study analyzes the essential aspects of the Flipped Classroom model, in order to consider all the possible variables and aspects that may influence this phenomenon. However, it is important to point out that the research proposition in these terms was very ambitious, due to its complexity and amplitude, and, in some aspects, it does not expand the existing knowledge with respect to other studies. Moreover, although the amplitude and variety of the sample, along with a thorough and rigorous analysis process, allowed highly reliable results to be obtained and the real situation to be visualized in a precise manner, this only explains and describes the reality of a context of higher education in Spain. Therefore, it is necessary to compare these results through the same qualitative study in different international contexts.

5. Conclusions

The pandemic has been a wake-up call for educational institutions [11], on the need to integrate digital technologies in teaching processes and finally develop methods [3,4]. These results allow us to be more optimistic about the possibilities of FC as an opportunity to change the traditional learning model [44], since, as in the case of B-learning, it enables new learning spaces, greater access to education, and new learning strategies adapted to the “new normality” [8,16,17], introducing a more active learning that will help students to acquire better studying habits and develop competences. Moreover, this model will also help educational institutions to face exceptional situations, such as the one lived in the COVID-19 pandemic.

As a final conclusion, we can assert that the FC model within the B-learning modality has great potential from different levels [8,10,13–15]. Firstly, from an academic perspective, the students increased their academic performance and their marks in the subject. Secondly, from a competence perspective, FC contributed to the development of a series of key competences that will be necessary in different aspects of life, such as autonomy, responsibility, organizational skills and teamwork, among others. Thirdly, from a personal perspective, it can be considered that there is a positive correlation between this pedagogical model and positive emotions, as well as with the motivation toward learning. Lastly, from a social perspective, intergroup relationships are fostered among students through cooperative learning, and a closer and more productive relationship is established between the teacher and the students, where the teacher mainly acts as a guide, thus contributing to the significant improvement of the learnings.

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