

DIFFERENT TRAINING OPTIONS IN VIRTUAL LEARNING

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Abstract

Three educational models can be defined in a higher education context: face-to face learning, on-line learning and blended learning.

Face-to face learning is the most common developed and involves a traditional classroom situation. This allows for a live interaction between a learner and an instructor. Learners benefit from a greater level of interaction with their fellow students. On-line learning is the education model that takes place over the Internet and require a greater degree of self-motivation for both the teacher and the student. Instruction may be synchronous or asynchronous and various technologies can be used to mediate the process. This approach empowers students as active learners instead of just passive recipients absorbing information and reproducing it for standardized tests. This type of learning process involves students in the assessment process where they can learn to make judgments concerning their own work. Finally, blended learning is an instructional approach that uses digital strategies in tandem with best practice in the classroom. In some blended classrooms, digital and face-to-face teaching may alternate according to a fixed schedule.

This research aims to analyze how different modalities approach in virtual teaching and learning contexts can be appropriate for higher education.

An educational context of higher education will be analyzed in which the different modalities are implemented in a flexible way. The analysis of the impressions of the students and teachers will be taken into account for the development of the results and the establishment of conclusions.

The study was carried out with first-year students of Nursing Degree in which a specific new learning space was developed. Several teaching scenarios were proposed: face-to-face teaching; on-line teaching and the asynchronous hybrid or blended learning environment in which both on-site and remote students can simultaneously attend learning activities. Students and teachers were surveyed to find out the difficulties and advantages of implementing each of the teaching modalities. The results reveal advantages and disadvantages of the different learning strategies, but in all cases, it is necessary to influence the active participation of students in the development of their own learning.

In this context, in view of the results, digital technologies are often proposed as a possible answer to change the educational landscape and make it more flexible and accessible to a wider group of learners

Keywords: virtual teaching, blended learning, higher education, active learning.

1 INTRODUCTION

The current demand to expand the teaching scenarios in the Spanish University has allowed the development of diverse teaching strategies. It has gone from an eminently face-to-face model to a virtual model in "on line" mode in which the teacher and the student are not physically close. In addition, hybrid methods have also been carried out in which both methodological systems are combined, those hybrid methods are called blended learning.

Face-to-face learning is an instructional method where course content and learning material are taught in person to a group of students. It is the most traditional type of learning instruction and allows a great interaction between professor and student. In the current situation in the European Higher Education Area, the face-to-face model has evolved, giving greater prominence to the student, developing student-based learning [1]. However, this mode of teaching requires a precise physical space and a specific time for its development.

Virtual learning model is a synchronous teaching model, in which the students and the teacher are not in the same physical place. The introduction of a virtual teaching model requires significant motivation

for both the teacher and the student and improves independent learning ability and self-regulating thinking more than the traditional learning modes [2].

And finally, the proposal of a third educational model is investigated that combines face-to-face methodologies within the same subject along with others online asynchronous, the latter being a combined model. This innovation aims at integrating online media with traditional teaching not only to supplement the missing gaps of traditional teaching but also to transform the overall class activities into a pedagogically valuable manner [3].

More and more higher educational institutions invest in technology-enhanced learning spaces, which raises the question of how these environments can be shaped to be as effective as possible [4].

This research aims to analyze how different modalities approach in virtual teaching and learning contexts can be appropriate for higher education, specifically in nursing students.

2 METHODOLOGY

This research is conducted by de GID-Aliment Research group with 66 undergraduates students of Nursing Degree.

The proposed framework is oriented to students in first year. Once the teaching and learning framework was applied in each of the modalities (face-to-face-virtual-combined) in different subjects, a survey was given to the students to evaluate the degree of satisfaction with the different methodologies. Different aspects were analyzed: responsibility in learning - work organization - technological and communication skills - learning modality preference. All questions must be answered on a scale of 1 to 5.

Finally, the student's perception was evaluated, through the design of open questions about the justification of the preferred modality as well as the needs for improvement in each modality.

From the analysis of the results obtained from the student surveys, the main conclusions of the perception of these three teaching modalities will be determined. However, future studies will consider the study of teachers' perception in order to obtain a global vision of the different training options.

3 RESULTS

After developing the three teaching methods, the students answer the questionnaire. The results obtained from the questionnaires planned to the students are presented in four levels: responsibility in learning, work organization, technological and communication skills and learning modality preference.

3.1 Responsibility in Learning

The survey is designed to interpret the degree of responsibility necessary to address each of the learning modalities. Student responsibility becomes central to the methodological approach to teaching and occurs when students take an active role in their learning by recognizing they are accountable for their academic success [5], moreover, autonomy in learning is not an abdication of the teacher's role.

This responsibility is analyzed in terms of regular attendance to classes, in the self-organization of the subject, as well as the adequacy of the material provided by each teacher and the need for tutorials to understand the subject.

Virtual learning in which courses are delivered virtually via the Internet, and blended learning, likewise, is an approach to learning that combines face-to-face and online learning experiences. Ideally, each type will complement the other by using its particular strength [6]. These virtual learning approaches has become crucial during the COVID-19 period since it encourages student-faculty contact, cooperation among students, and active learning. However, students are not prepared for this type of virtual learning and it implies greater effort and a greater development of their responsibility.

Traditional face-to-face learning allows students a better organization of work and they also value more positively the documentation provided in this type of learning (Fig. 1). However, it is in the synchronous virtual model that students have shown a greater need for individual tutoring to expand and improve learning.

An important error found in the virtual model is the inadequacy of the teaching material used by the professor. Virtual environments for learning usually focus on surface characteristics and tend to hold on traditional pedagogy, instead of addressing educational, social, and technological affordances for collaboration, paying more attention to interaction [7].

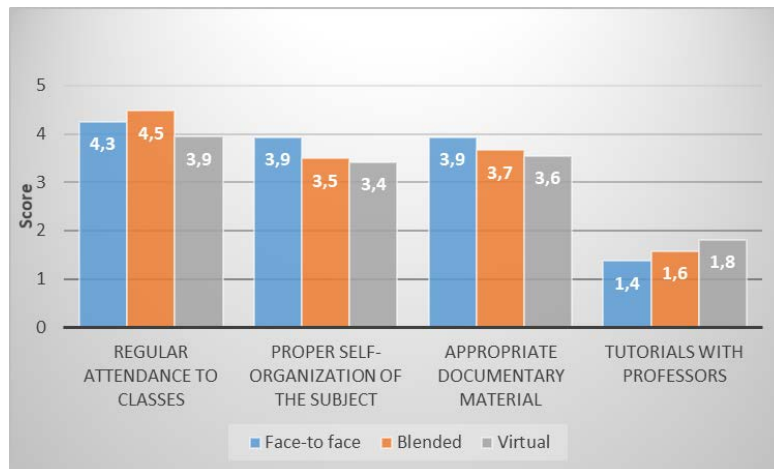


Figure 1. Student responsibility

3.2 Work Organization

Work organization is the role of teachers and students concerning the itinerary, the actions and the flow of learning during the development of the subject and it is indicative of the difficulty derived in each learning modality. Students can manage the task if they can decide on the organization, the depth with which they address the issues, and the time dedicated to each of the challenges they face [7].

The analysis of this aspect makes it possible to evaluate how students are capable of approaching the subject in an active and responsible way. This statement implies encouraging students' autonomy and capacity of self-regulation.

The work organization is evaluated based on the following criteria:

- Global difficulty
- Flexibility (hours, works, etc.)
- Dedication time

Regarding the degree of difficulty, it is observed that it is increasing in virtual teaching models (Fig. 2). This degree of difficulty in the virtual model may be due to the technical difficulties observed by students (wifi, audio, etc.). The students propose to improve the virtual explanations with diagrams or drawings that can facilitate understanding that can facilitate understanding and get out of the monotony of the teacher's lesson in a synchronous way. However, there is also greater flexibility in virtual teaching, both in timetables and in work to be carried out.

In the combined model, they also note a certain degree of difficulty attributed to the greater number of group work.



Figure 2. Work organization

As reflected in the data in Table 1, the application of the three modalities has not implied substantial differences in the dedication of weekly time. A greater dedication to teaching work (assignments) has been observed in the blended model and a slightly greater attendance at forums in the virtual learning. Forums that are considered useful tools for developing the cognitive dimension and the reasoning of the participants. In addition to forums in virtual environments, other tools such as social networks, collaborative annotation, wikis, blogs and e-portfolios [8].

Table 1. Average weekly dedication to each activity on a scale of 1 to 5

	<i>Face-to face</i>	<i>Blended</i>	<i>Virtual</i>
Study	3,5	3,5	3,4
Assignments	3,3	3,6	3,4
Forums	1,4	1,4	1,5

3.3 Technological and communication skills

Technological and Communication skills favour collaboration in a learning situation. They facilitate ubiquitous and asynchronous processes and contribute to guaranteeing access to “learning without discrimination and on equal terms”. Under these premises, collaboration will create links of positive interdependence and responsibility, which in turn encourage greater awareness and greater control of the learning processes [9].

Teaching and learning are explained as complex interactive social phenomena that take place between teachers and students. However, in the virtual learning model, communication between students and with teachers is sometimes weakened. In this study students perceive the highest degree of communication in the face-to-face model (Fig. 3). Instructional design may consider different tools to promote interaction and collaborative learning in all learning models and teachers play a crucial role in supporting interaction between students that stimulate learning.

There are many ways, in design and in teaching, to strengthen this positive interdependence, like sharing resources, roles, a collective identity, a place for the group to meet, or specific goals or challenges [10]. The combination of individual accountability and positive interdependence is designed principally to motivate students not only to work together but also to be concerned about the learning of their group mates.

It has also been observed that students, under their own perception, already had technological skills to develop "online" models, and they have not acquired greater skills in this experience.

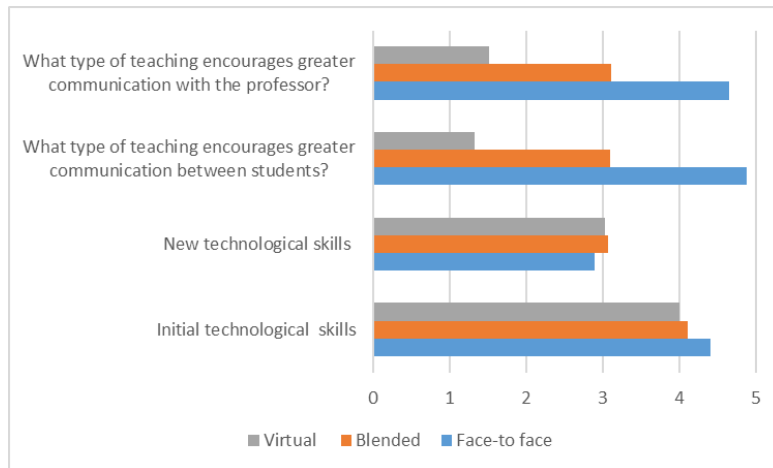


Figure 3. Technological and communication skills

3.4 Learning Modality Preference

Students mostly prefer a face-to-face teaching model (Fig. 4). The reasons for this preference are greater concentration on class attendance, better understanding, and greater interaction between students and with the teacher. The blended model is defined as the most flexible, but it is only preferred by 26% of the students. And the completely virtual model is preferred for a very small number of students to whom it offers greater flexibility for students who live outside the city of the university.

In this scenario and with these results it is difficult to develop a successful virtual model. However, they clash with a teaching system that embraces a traditional teaching culture. In this context, it is observed that a virtual approach in teaching and learning contexts can't be appropriate for higher education. Thus, the cause of this lack of preference for a virtual model could be the proliferation of training proposals that lose the potential of the virtual learning environments and are limited to a repository of teaching resources.

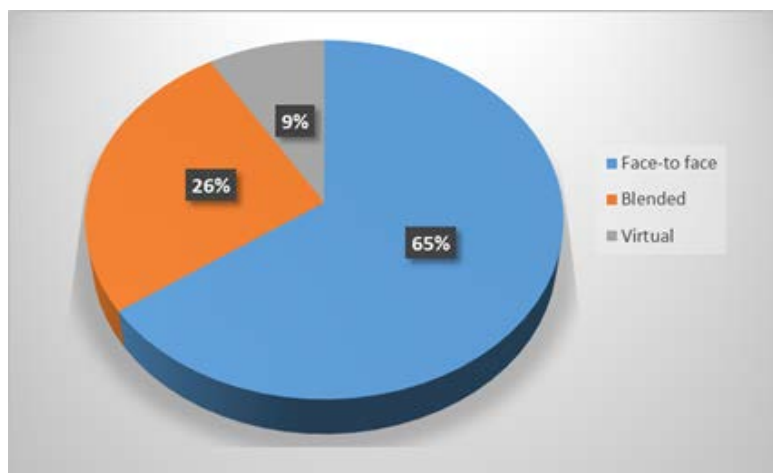


Figure 4. Learning modality preference

Students propose the following actions to improve virtual and blended modalities:

Blended modality improvements

- reduce the number of activities assigned to work in groups
- improve the distribution of class schedules
- increase the coordination with respect to the rest of the subjects that are developed with other modalities

Virtual modality improvements

- improvement of the quality of virtual classrooms (sound and image)
- increase the dynamism of classes
- teacher training in technical aspects
- ability to listen to classmates when they ask

4 CONCLUSIONS

The description of the three learning models after consulting the students experience allows to obtain the following conclusions:

- Students are not prepared for virtual learning and it implies greater effort and a greater development of their responsibility.
- Students show a degree of global difficulty in a virtual teaching model due to the technical difficulties of applying this model.
- An important lack of communication between students and with the teacher is observed in the virtual and blended models.

This experience demonstrates the existing gaps in the implementation of various learning models in virtual mode from the perspective of the students. They continue to prefer more traditional models of face-to-face teaching.

A reflection of the results is necessary in order to improve the experience. First of all, it is necessary to mention that the implementation of virtual teaching in university education is due to the situation derived from COVID-19 and probably all the difficulties expressed by students in virtual models are derived from the lack of planning in the face of a situation of health alarm.

However, this experience has made it possible to detect difficulties and improve aspects of online teaching, such as technological problems and the skills of teachers. Surely this type of teaching will be consolidated and will improve based on the experiences that are being developed.

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