The flipped classroom in higher education: pedagogical innovation in a master's degree module

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***Abstract* — The introduction of the flipped classroom methodology stemmed from recurring difficulties identified by students, particularly in the theoretical component, where lessons were predominantly lecture-based, resulting in low student participation and a lack of motivation.**
The proposal focused on the systematic adoption of the flipped classroom methodology, combined with peer-to-peer learning, to explore theoretical content and research practical case studies. In groups of three, students investigated topics guided by the teacher, produced summaries in digital formats (e.g., PowerPoint/Canva) and delivered oral presentations that took on the role of a 'lesson', complemented by learning assessment activities (e.g., quizzes) and a final discussion/reflection.

The observed results point to greater participation and motivation, evidence of knowledge acquisition and improved academic performance. Among the challenges, the following stand out: initial resistance from some students, the management of collaborative work in classes with international students, the need to redefine the teacher's role as a facilitator, and the misuse of AI (mitigated by requiring references). It is concluded that the flipped classroom, integrated with active strategies, contributes to more participatory, applied and meaningful learning in this course unit, justifying the continuation and refinement of the model.

***Keywords* — pedagogical innovation; flipped classroom; peer instruction; higher education.**

I. INTRODUCTION

The introduction of the flipped classroom methodology stemmed from recurring difficulties identified by students, particularly in the theoretical component, where lessons were predominantly lecture-based, resulting in low student participation and a lack of motivation.

The main complaint regarding this course module concerned the theoretical component, specifically in relation to content on protocols and the different types of protocols. Furthermore, students find it somewhat difficult to grasp the practical application of all the theoretical concepts. At the same time, the theoretical classes have become too lecture-based, and the theoretical-practical sessions suffer from a lack of motivation on the part of the students. Consequently, as a general rule, students participate little in class and often seem 'disengaged' from the lessons.

In this context, over the past two years, efforts have been made to innovate, or rather, to address the over-reliance on lecture-style teaching and student demotivation, aiming to make the teaching-learning process student-centred. Consequently, efforts have been made to implement strategies that actively involve students in the teaching-learning process, developing their autonomy and critical thinking, as well as a spirit of collaboration among peers and within the class.

So, the adoption of the flipped classroom methodology, combined with peer-to-peer learning, was used to explore theoretical contents and research practical case studies. In groups of three, students investigated topics guided by the teacher, produced summaries in digital formats (e.g., PowerPoint/Canva) and delivered oral presentations that took on the role of a 'lesson', complemented by learning assessment activities (e.g., quizzes) and a final discussion/reflection.

II. LITERATURE REVIEW

The flipped classroom (or flipped learning) is a teaching methodology or strategy that reverses the traditional dynamics of the classroom. Essentially, it aims to foster autonomy and collaboration among students, with the teacher acting as a facilitator in the teaching and learning process. Adopting this methodology brings several advantages:

1) it allows students to participate more actively in lessons, as they have prior knowledge of the content;

2) it gives teachers more time to address students' individual needs;

3) it creates more flexible learning pathways, as students can progress through the learning process at their own pace [10].

According to the Flipped Classroom Field Guide [5], the main activities characteristic of the flipped classroom strategy are:

1) Classroom activities involve questioning, problem-solving and other active learning activities, requiring students to seek out and research knowledge;

2) Students receive feedback during classroom activities;

3) Students are encouraged to participate in various activities, whether in the classroom or outside it, and these should count towards students' formal assessment, i.e. they are graded;

4) Both the material to be used in the classroom and outside must be properly structured and well planned under the teacher's guidance.

The way in which the flipped classroom was implemented also drew on another methodology – peer instruction [4] [9] – making students key active participants in the teaching-learning process, thereby contributing to a greater understanding of the subject matter and among peers.

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Furthermore, according to the Flipped Classroom Field Guide [5], we should use this flipped classroom methodology because it leads to:

1) better educational outcomes;
2) efficiency and effectiveness in lessons;
3) more interactive lessons;
4) more opportunities to collect and use data and analysis;
5) more personalised teaching;
6) greater mastery of the content.

Recent studies suggest that the use of the flipped classroom enhances critical thinking and a deeper understanding of complex topics in higher education [2] [8]. Furthermore, in keeping with the cooperative nature of teaching and learning, collaborative projects promote teamwork and the sharing of knowledge [2].

III. Materials and Methods

The flipped classroom methodology was used in most lessons: the teacher set the research topics, defined the objectives and guided the different groups in their research, which was carried out both in the classroom and outside it. All groups and their respective research projects were closely monitored by the teacher. Following the research, the students produced a summary in a format of their choice (PowerPoint, Canva, etc.) and then shared it with their classmates; that is, they gave an oral presentation, in the style of a lesson, to explain the content to their classmates. This oral presentation was to be followed by an exercise to assess understanding of the shared content (also created by the classmates, such as Kawoots). Finally, there was to be a concluding reflection on the understanding of the content and a discussion of ideas and/or queries.

This research is the result of an experimental study conducted during the 2023/2024 and 2024/2025 academic years as part of the Curricular Unit 'Institutional Communication, Protocol and Events, in the 1st year of the Master's Degree in Communication Sciences – Public Relations and Advertising specialisation, worth 6 ECTS credits, comprising 14 hours of theory and 28 hours of theory and practice, totalling 42 contact hours throughout the 2nd semester of the aforementioned academic years. Consequently, we can state that we had two focus groups for the study, namely the two classes from each year, with 24 and 26 students respectively.

The results of this experimental study were analysed based on the students' results, teacher's participant observation and a questionnaire completed by the students at the end of the semester, in which they provided feedback on the running of the course module and the teaching and learning methods employed.

IV. Results and Discussion

The implementation of this student-centred methodology, which give students a more active and participatory role in the teaching-learning and assessment process, has brought about some changes in the way the course module operates and is viewed overall.

Regarding the teacher's participant observation, we can state that, from the outset, students proved to be more engaged in lessons and more motivated.

As for academic performance, this improved significantly, with the average final marks increasing significantly between the academic year in which these methodologies were not applied and the years in which they were applied (see Figure 1). As shown in the graph in Figure 1, the average marks of pupils rose by almost two points over the two years in which this teaching and learning methodology was used. In other words, they rose from 13.4 points in 2022–2023 to 15.1 points in 2024–2025.

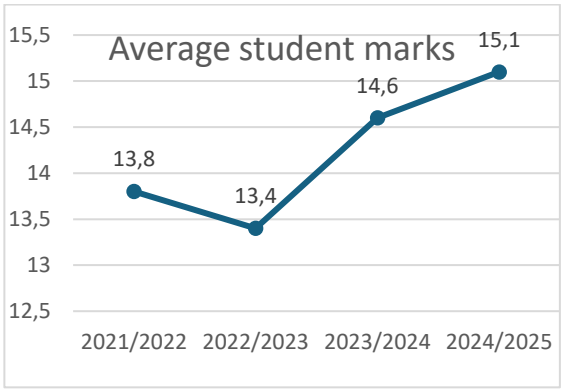


Fig. 1. Average student marks per academic year.

Regarding student feedback, obtained via a questionnaire administered at the end of the semester, it was first noted that, over the two academic years, only three students were familiar with this teaching and learning methodology.

As regards students' satisfaction with the use of these methodologies, the results were very positive. Thus, in terms of motivation and participation in class, most students demonstrated motivation and active participation (see Figure 2). As can be seen in Figure 2, on a scale of 1 to 5, where 1 means 'completely disagree' and 5 means 'completely agree', it is clear most students selected options 4 and 5, that is to say, they demonstrated motivation and active participation in lessons.

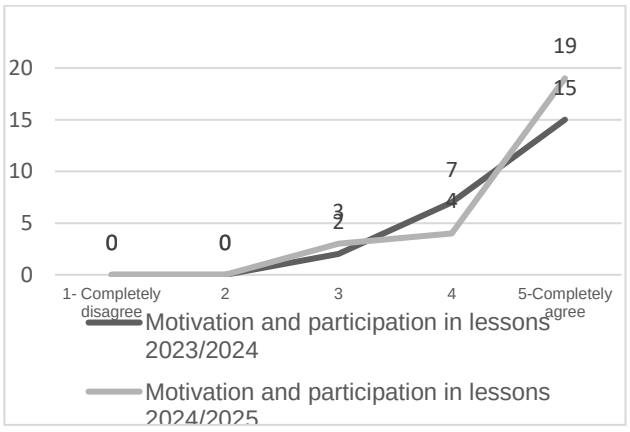


Fig. 2. Students' feedback on their motivation and participation in classes.

Similarly, regarding overall satisfaction with the running of the course module, the feedback was very positive (see Figure 3). Figure 3 shows that most students agree or strongly

agree with the way the lessons are run and with the teaching methodology, resulting in very positive feedback.

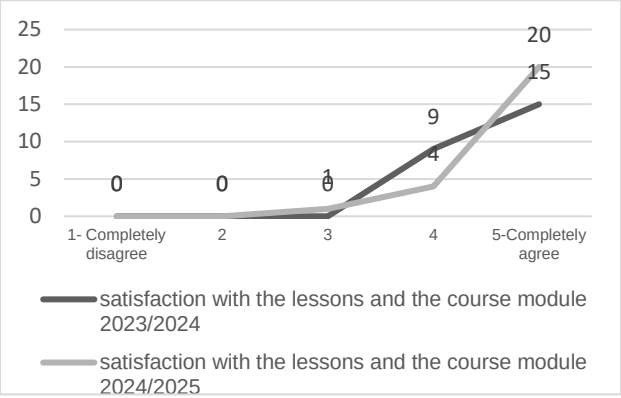


Fig. 3. Students' feedback on their level of satisfaction with the course module.

As for their level of satisfaction with the results achieved, students were generally satisfied with the results (see Figure 4). As shown in Figure 4, the level of satisfaction with the results obtained is also quite high, as most students agreed or completely agreed with the results achieved.

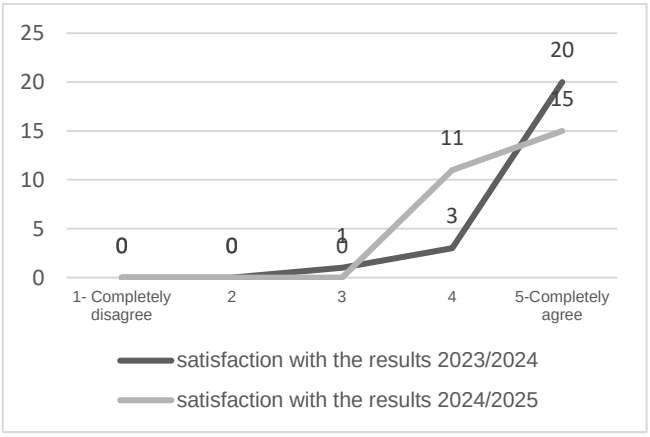


Fig. 4. Students' feedback on assessment results.

Finally, when asked to describe the course module and its operation in few words, the words that emerged were: autonomy, success, commitment, responsibility, learning, innovation and attendance (see Figure 5). This choice of words is consistent with what the literature review says about the impact of adopting this active teaching and learning methodology [5] [9].



Fig. 5. A one-word description of the course module.

The adoption of this methodology has given students a more active and participatory role in the teaching-learning and assessment process [4] [5] [9]. The main results were:

1) Firstly, students proved to be more engaged in class and more motivated.

2) Students demonstrated knowledge acquisition, evidenced by their autonomy in organising the event.

3) Academic performance improved significantly, with average final marks rising considerably.

4) Finally, feedback from the students themselves has been very positive and rewarding, encouraging us to continue and refine the application of this type of methodology.

V. Conclusion

The implementation of this methodology also involved formative assessment, in which not only the teacher but also peers contribute to the continuous improvement of the group's assessment and that of each individual student. It should also be emphasised that the final assessment of students is not carried out solely by the teacher, but also by the students themselves, who assess their own work and that of their classmates.

The application of these more student-centred methodologies, giving students a more active and participatory role in the teaching-learning process, has led to an improvement in academic success.

However, among the main challenges that have arisen in implementing this methodology, we can highlight the following:

1) Resistance from some students: some prefer to take a passive role and wait for the teacher to present the content without any effort on their part; others find it difficult to adapt to group work (especially when there are many international students, who often exclude themselves). Nevertheless, after a few lessons, everyone adapts to the change and the new methodologies and, generally, everyone provides positive feedback in the end.

2) A shift in the teacher's role, which should grant students greater autonomy, with the focus on providing guidance and support.

3) The use of Artificial Intelligence: many students are tempted to use AI to carry out their research, and for this reason, the teacher has made it compulsory to provide a list of the references used.

In short, the implementation of these active learning methodologies has proved to be highly motivating, enriching and fruitful, not only from the teacher's perspective but also from that of the students. Indeed, from academic results to increased student participation and motivation, there are numerous indicators that attest to the teacher's satisfaction with the approach she has been adopting.

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