

PEER LEARNING IN A FLIPPED CLASSROOM: EVIDENCE FROM THE BMA403 COURSE IN GREECE

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Abstract

This study investigates the academic outcomes associated with a Peer Learning–Flipped Classroom (PL-FC) model implemented in a university-level quantitative business course (BMA403) during the spring semester of the 2020–2021 academic year. Implemented amid the constraints of remote teaching, the PL-FC model required small student groups to prepare and deliver weekly presentations on course material, alternating between tutor and tutee roles. Participation was voluntary, resulting in two distinct student populations: those who actively participated in PL-FC tutorial groups ($n = 189$) and those who engaged passively with the course content ($n = 132$). All students were evaluated through the same formative assessments (nine in total) and a final examination. Data were analysed in R using Welch’s t -test and Pearson correlation, with figures produced using ggplot2 and ggpubr. To aid interpretability, raw scores were standardised (z -scores) and then mapped to a 0–100 scale using the standard normal cumulative distribution function; values therefore represent percentile ranks within the analysed sample rather than percent correct. Results indicated that PL-FC participation was associated with higher standardised final-examination scores ($M = 50.12$ on the 0–100 percentile scale) compared to non-participation ($M = 41.31$), with $p = 0.0196$. Submodule analysis suggested topic-specific differences, although multiple comparisons were considered in interpretation. Instructor-assigned peer evaluation scores showed no statistically significant correlation with final grades ($r = 0.078$, $p = 0.287$). Overall, the findings support an association between PL-FC participation and higher academic performance in this course, while recognising limitations due to self-selection and the absence of baseline equivalence measures.

Keywords: *flipped classroom, peer learning, collaborative learning, higher education, quantitative courses, academic performance, remote teaching, active learning*

1. INTRODUCTION

In recent years, higher education has undergone substantial changes. Learning environments need to adapt to the digital era and to the needs of twenty-first-century students. This change in teaching methods is marked by a shift away from passive, teacher-centered methods and toward models that stress student agency, teamwork, and critical engagement with information. One of the most important changes in this sector is the Flipped Classroom (FC) model, which changes the order in which students learn by allowing them to work with the materials before class and giving them time in class to work on group projects, solve problems, and talk. Researchers across disciplines are interested in the FC model because it can make people more involved, help them comprehend things better, and teach them skills that can be used in other academic settings, especially when traditional lectures have not worked well [3, 4].

The main idea behind the flipped classroom is to change the way teachers teach. Before class, students read, watch videos, and go over concepts to understand the basics. Then, in class, they apply what they've learned to actively learn. In this context, students use information by applying it, evaluating it, and putting it together through activities including group projects, peer education, and guided practice [5]. The pedagogical rationale is based on well-known learning theories, such as Vygotskian principles of social constructivism, which say that people learn by interacting with others and that working with peers may be very helpful in building on what they already know [6].

Using FC approaches in quantitative fields like economics, business analytics, and mathematics addresses long-standing limitations of the traditional lecture format. Previous research has shown that

students in lecture-based classes often focus more on writing down notes than on understanding them. This can lead to issues with memory and grasping concepts [7, 8]. This can make it harder for students to go from high school to college, especially in the first few years of college when they are learning very abstract things and don't have many chances to learn through interaction [9].

The Peer Learning Flipped Classroom (PL-FC) is a more advanced version of the FC that was developed to address these shortcomings. This method combines the FC model with the ideas of peer tutoring and cooperative learning to make the learning settings before and during class better [10]. With the PL-FC framework, students work together in small groups to be ready for class on a specific topic. Then, the subgroups take turns being tutors and tutees, leading class discussions and giving presentations based on how well-prepared they are. This two-part system, which combines peer tutoring in class with cooperative study outside of class, has been found to help students become more conscious of their own thinking, learn on their own, and be responsible for both their social and academic lives [11,12].

The PL-FC paradigm that is unique because it emphasizes role switching and giving students more control over their own learning. The strategy draws on the teaching principle "to teach is to learn twice" [13] by including students in the learning process. Students who are getting ready to deliver the subject need to not only comprehend it conceptually, but also be able to predict inquiries, logically organize their answers, and critically assess the data that supports their claims. This encourages deeper cognitive engagement than passive attendance. Students are also encouraged to split up duties in a smart way, talk about what they mean, and practice as a group throughout the collaborative preparation process. Online technologies like Microsoft Teams typically help with this. These activities help students learn about specific subjects as well as general academic abilities that may be used in other areas, such as communication, leadership, and time management [14].

This study examines how the PL-FC model was implemented and its outcomes in the undergraduate course BMA403 during the spring semester of the 2020–2021 school year. Of the 321 students enrolled in the course, 189 actively took part in PL-FC group tutorials, while 132 used a more traditional, passive learning technique. The study aimed to examine how active engagement in PL-FC structures affects final academic achievement, with an emphasis on finding statistically significant variations in performance between the two groups. The study also looks at possible links between how well students do in different submodules and the peer assessment scores given by the teacher and the students' grades.

The concept of the study is based on what other studies have shown about how cooperative learning and peer tutoring might help students in school. Past research has shown that peer learning leads to greater involvement, higher grades, and more positive changes in attitudes toward learning [15,16]. This is especially true in places that stress structured student cooperation and reciprocal instruction. But research also shows that FC methods don't always work out well. Several studies have reported limited differences in student resistance, performance, or methodological inconsistencies when compared to traditional approaches [17, 18]. So, it's clear that we need a thorough, context-sensitive review of FC implementations that looks at both theoretical and methodological difficulties.

The study relies on prior empirical research that implies students' active engagement in teaching roles may have a long-term influence on learning trajectories. In addition to being associated to better immediate academic achievements, the study also shows that this is the case. Past uses of the PL-FC model have indicated that students who do group peer tutoring do better in the main course and in later modules, especially those that need arithmetic or analytical skills [10]. These results support the idea that the advantages of PL-FC go beyond only higher test scores and lead to more important and lasting academic growth.

The fact that this study was conducted during the COVID-19 pandemic makes it especially relevant. The sudden switch to online and hybrid learning during this time showed how traditional teaching methods fall short and how important it is to have flexible, student-centered learning solutions. The PL-FC model appeared to work well for distance learning because it combined synchronous,

interactive sessions with asynchronous preparation. This may give students structure, peer support, and a stronger sense of belonging [19].

In short, our study aims to add to the larger conversation around flipped learning in college and employ statistical analysis to examine whether the PL-FC paradigm is associated with improved outcomes in the classroom. The study's goal is to make the pros and cons of peer-augmented flipped learning in a university-level quantitative course clearer by looking at performance results, submodule-specific impacts, and instructor-peer assessment measures.

2. MATERIALS AND METHODS

2.1. Research Context and Study Design

This study was conducted within the framework of the undergraduate course BMA403: Quantitative Business Tools, offered during the spring semester of the 2020–2021 academic year. Due to COVID-19 restrictions, the course was delivered entirely online using Microsoft Teams, offering a natural opportunity to implement a digital variant of the Peer Learning–Flipped Classroom (PL-FC) model, previously conceptualised in empirical literature as a dual-layered approach that integrates cooperative learning outside the classroom with peer tutoring during synchronous class time [10].

2.2. Methods

The methodological design of the present research is grounded in a quantitative, quasi-experimental approach. The sample comprised 321 undergraduate students enrolled in the course. Students were informed at the beginning of the semester about the opportunity to participate in small peer-led tutorial groups that would operate under the PL-FC framework. Participation in this model was entirely voluntary. Out of the full cohort, 189 students elected to participate in the PL-FC tutorial groups (Flipped = 1), while 132 opted for traditional, lecture-based passive attendance (Flipped = 0). This self-selection yielded two naturally occurring groups, which allowed comparative statistical analysis based on the degree of active engagement. No pre-intervention equivalence measures (e.g., prior GPA, diagnostic pre-test, or early-course benchmark assessment) were available, so between-group comparisons should be interpreted as associations rather than causal effects.

2.2.1. Implementation of the PL-FC Model

Students who chose to participate in the PL-FC model were organised into tutorial groups of three to four individuals. Each group was assigned responsibility for preparing and presenting a segment of the course content during weekly synchronous sessions. Preparation occurred asynchronously and collaboratively, with students using a combination of tools—including PowerPoint, embedded video, interactive quizzes, and discussion prompts—to develop original teaching material. These preparatory processes are reflected the principles of cooperative learning as they are discussed by Johnson and Johnson [15] and Kaufman et al. [16], while the act of presentation and discussion within class embodied the peer tutoring typology is also described by Topping [11].

Each weekly session featured one or more groups acting as “tutors” while the remainder of the class attended as “tutees.” During these sessions, the presenting group was responsible not only for conveying the targeted content but also for engaging their peers in interpretive tasks, clarifying difficult concepts, and facilitating interactive discussion. The course instructor attended all sessions, acting primarily as a facilitator and academic moderator rather than as a primary source of information, consistent with flipped pedagogy principles outlined in [2] and [3]. In contrast, the 132 students in the control group attended the same weekly sessions but did not contribute any material nor participate in the preparation or delivery of content. They assumed a passive observational role and were included in the sessions solely as attendees, mirroring the conditions of traditional lecture consumption.

2.2.2. *Assessment Framework*

Both groups—Flipped and Non-Flipped—were evaluated through identical formal assessments. These included nine formative assessments distributed across the semester (coded as YA1–YA9) and a final summative examination. Each of these assessments was designed to evaluate higher-order cognitive abilities, including quantitative reasoning, analytical problem solving, and conceptual interpretation, aligning with Bloom’s revised taxonomy as applied to STEM education [4,5]. Additionally, for students in the Flipped group, instructors also rated tutorial performance based on a structured rubric with five criteria: (1) quality of educational material, (2) depth of content understanding, (3) level of preparation, (4) intra-group coordination, and (5) engagement during the presentation. These ratings were expressed on a five-point Likert scale and used to examine possible correlations between teaching performance and final examination outcomes, as per methodologies employed in similar studies of peer instruction and student-led teaching [13,14].

2.2.3. *Data Normalisation and Statistical Processing*

Data analysis was conducted using the statistical programming language R (version 4.0.3). Raw performance scores were first standardised to z-scores ($z = (x - \mu)/\sigma$) within each assessment. For presentation only, z-scores were then mapped to a 0–100 scale using the standard normal cumulative distribution function (percentile = $\Phi(z) \times 100$). Consequently, reported values on the 0–100 scale represent percentile ranks within the analysed sample and should not be interpreted as percentages of items answered correctly. Missing values (NA) were excluded on a per-analysis basis.

The statistical techniques used were selected based on the nature of the research questions and the structure of the data. Specifically:

- Welch’s t-test was employed to evaluate differences in mean final examination scores between the Flipped and Non-Flipped groups. This test was chosen over the traditional Student’s t-test due to unequal group sizes and the potential for heteroscedasticity [10].
- Independent-sample t-tests were conducted for each of the nine formative assessments (YA1–YA9) as secondary, exploratory outcomes. To reduce false-positive findings from multiple testing, we interpreted these nine tests using a Bonferroni-adjusted significance threshold ($\alpha = 0.05/9 \approx 0.0056$), while the final examination was treated as the primary outcome.
- Pearson’s correlation coefficient (r) was used to measure the strength and direction of the linear relationship between peer evaluation ratings (assigned to presenting students) and their final examination performance. A significance threshold of $p < 0.05$ was used throughout to determine statistical reliability.
- Graphical representations, including boxplots, bar plots, and scatterplots, were generated using the `ggplot2` and `ggpubr` packages in R [20,21].

2.2.4. *Ethical Considerations*

The study adhered to ethical guidelines governing educational research at the University of Patras. Participants were informed of the nature of the study at the beginning of the semester and were given the option to opt out of data inclusion without penalty. All data were anonymised prior to analysis, and results were presented in aggregate form to prevent individual identification. Given that the intervention involved pedagogical strategies falling within the normal scope of university instruction and was voluntary, no further institutional review was deemed necessary under prevailing national guidelines.

3. RESULTS

3.1. Comparison of Performance in the Final Exam (Flipped vs. Non-Flipped)

```
> print(t_test_result)
```

```
welch Two sample t-test  
  
data: percentage by Flipped  
t = -2.3653, df = 121.1, p-value = 0.0196  
alternative hypothesis: true difference in means between group 0 and group 1 is not equal to 0  
95 percent confidence interval:  
-16.191611 -1.436778  
sample estimates:  
mean in group 0 mean in group 1  
41.30889 50.12308
```

Image 1. T-Test

The statistical analysis performed with Welch Two Sample t- test aims to compare the performance on the final exam, which were transformed into percentile ranks using a z-score to percentile transformation (0–100), between the students who participated in the flipped classroom (Flipped = 1) and those who did not participate (Flipped = 0). The results showed that there is a statistically significant difference between the two groups ($t = -2.3653$, p - value = 0.0196 , i.e. < 0.05), which allows us to reject the null hypothesis of equality of means. The average standardised percentile score on the final exam for the students who did not participate in the flipped classroom was approximately 41.31, while for the students who participated, the corresponding average was 50.12. The difference in means ranges from -16.19 to -1.44 points (95 confidence interval), which means that participation in the flipped classroom was associated with higher performance on the final exam. Given the voluntary (self-selected) participation and the absence of baseline equivalence measures, the result should be interpreted as an association rather than a causal effect.

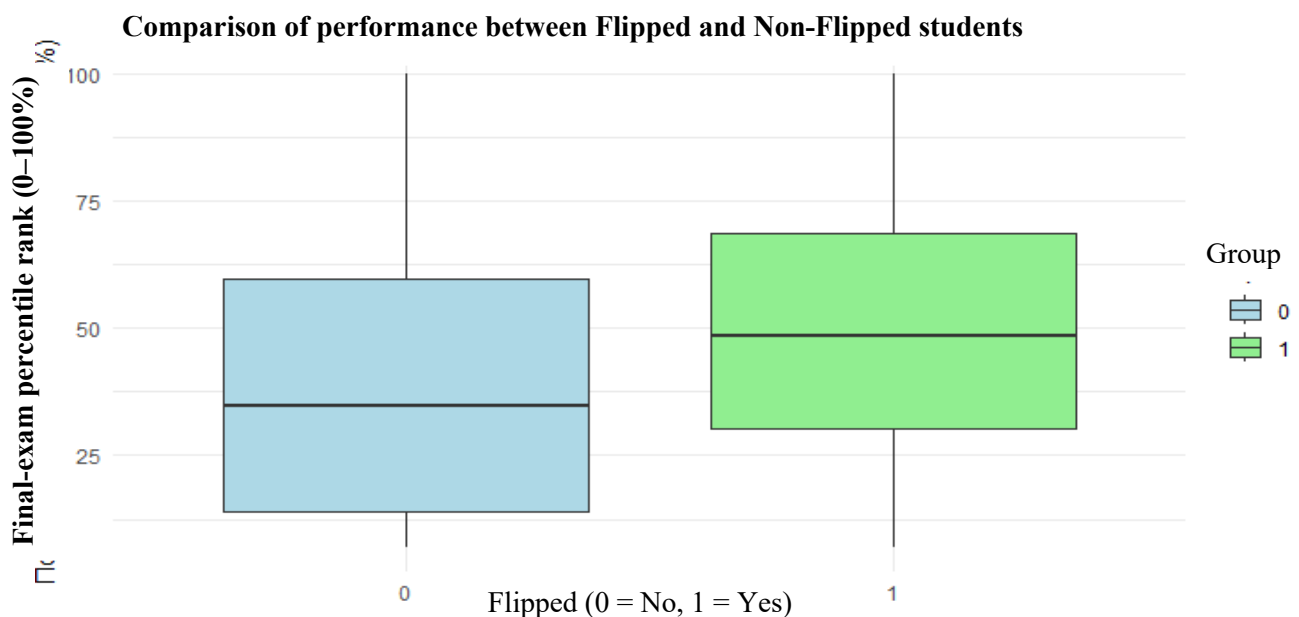


Fig. 1. Distribution of standardised final-examination percentile scores (0–100) by participation group.

The boxplot illustrates the comparison of students' performance on the final exam between those who participated in the Flipped Classroom (Flipped = 1) and those who did not participate (Flipped = 0). A difference in median performance is observed between the two groups, with the Flipped group presenting a higher median value. Because the reported values are percentile ranks on a 0–100 scale (derived from z-scores), they summarise relative standing within the analysed sample rather than percent correct. The Welch t-test indicates that the between-group difference in mean percentile score is statistically significant ($p = 0.0196$). Given self-selection into the intervention, this finding supports an association between PL-FC participation and higher final-exam performance, not a causal claim.

3.2. Analysis Per Subsection (YA1–YA9)

```
results <- results %>% arrange(p_value)
print(results)
```

	t_value	p_value	mean_flipped	mean_non_flipped
YA9	5.1584632117	1.024115e-05	5.356875	2.242000
YA4	2.9734247259	4.429796e-03	4.427317	3.181579
YA8	2.6402616275	1.387575e-02	3.206585	1.793478
YA2	1.8523721328	6.952200e-02	3.382891	2.777179
YA1	0.9444266953	3.496886e-01	3.037489	2.786486
YA6	0.7163979297	4.770595e-01	2.664898	2.405625
YA7	-0.7138321153	4.793058e-01	2.162062	2.415625
YA5	0.4767369679	6.357569e-01	3.455102	3.245278
YA3	-0.0006265673	9.995025e-01	1.550667	1.550811

Image 2. Results

The per-submodule analysis (YA1–YA9) suggests that students who participated in the flipped classroom tended to have higher mean scores across several units, although statistically reliable differences were concentrated in a subset of topics. In unadjusted tests, YA9 showed the largest difference ($p < 0.001$), and YA4 ($p = 0.004$) and YA8 ($p = 0.014$) also differed between groups. Because nine separate tests increase the likelihood of chance findings, we interpreted these results using a Bonferroni-adjusted threshold ($\alpha \approx 0.0056$). Under this criterion, the differences for YA9 and YA4 remain statistically significant, whereas YA8 does not meet the corrected threshold. The remaining submodules (YA1, YA2, YA3, YA5, YA6, YA7) did not show statistically significant differences.

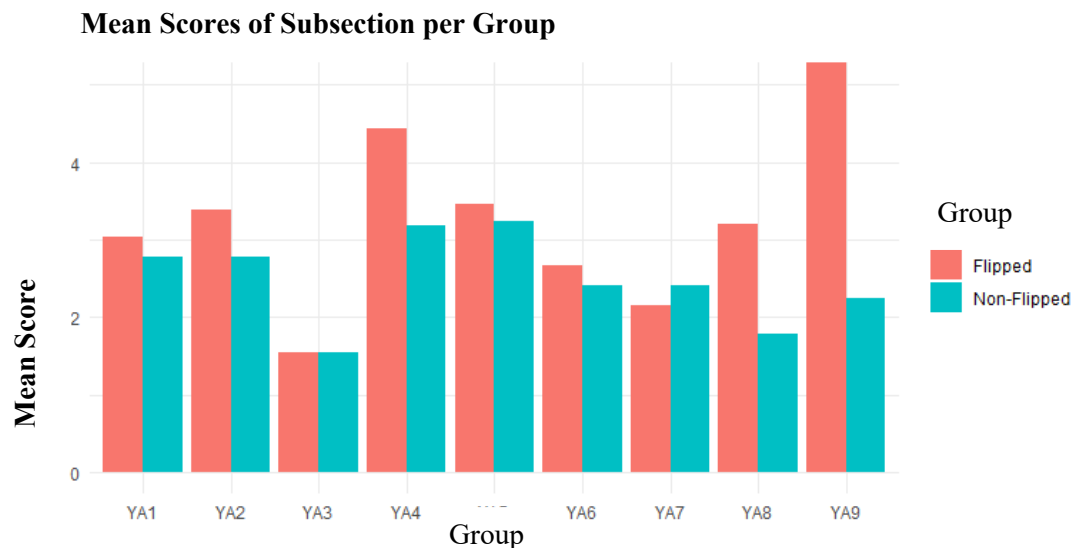


Fig. 2. Average bar chart

3.3. Correlation Performance with Evaluation Instructor

```
> print(cor_test)

Pearson's product-moment correlation

data: df_instructors$Instructor and df_instructors$FinalExam
t = 1.067, df = 187, p-value = 0.2873
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 -0.06566594  0.21810205
sample estimates:
      cor
0.07779346
```

Image 3. Correlation

Statistical analysis using Pearson's r was used to investigate whether there is a linear correlation between instructor evaluation and student performance on the final exam. The results showed a correlation value of $r = 0.078$, which is positive but very weak, while because $p\text{-value} = 0.2873 > 0.05$ the correlation is not statistically significant. Based on the above, no significant linear relationship is found between instructor evaluation and student performance, at least based on the available data. This interpretation is also supported by the scatter plot (plot) which presents a relatively uniform distribution without a strong trend.

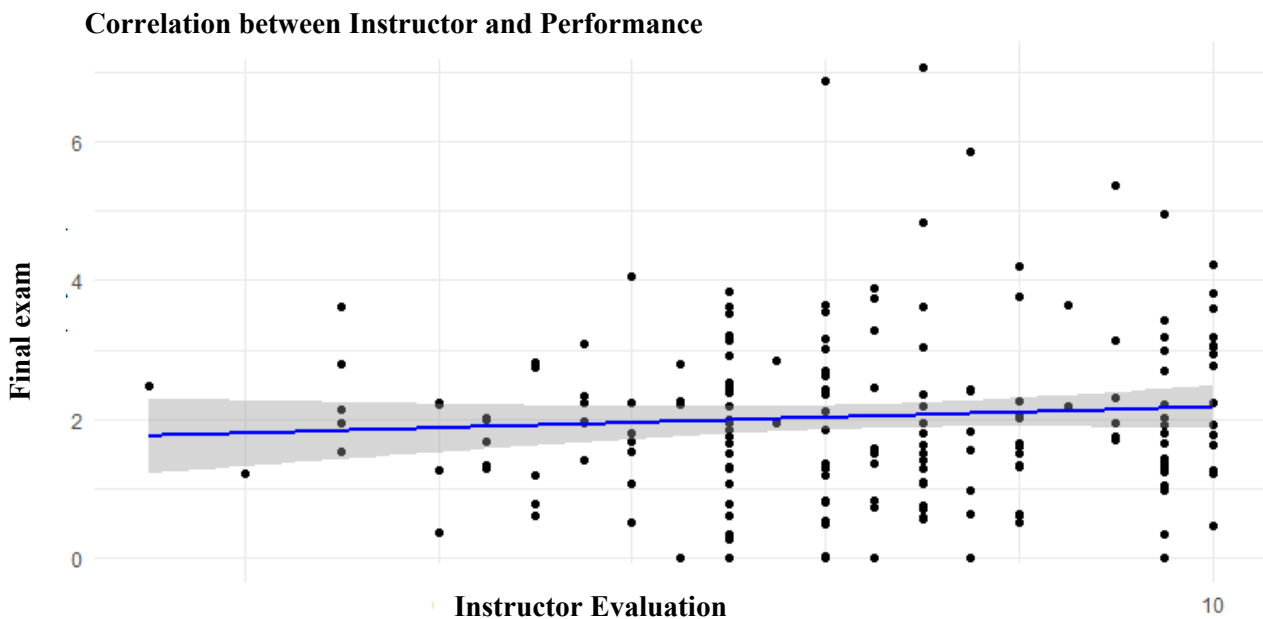


Fig 3. Scatterplot

The diagram depicts the relationship between the instructor rating (x-axis) and the students' performance on the final exam (y-axis). The blue line represents the regression line, while the shaded area corresponds to the confidence interval. It is observed that the line has a positive slope, which indicates a tendency for correlation: the higher the instructor rating, the slightly higher the performance on the final exam. However, the slope is extremely gentle and the points are widely

scattered. This means that the correlation is very weak. Statistical analysis confirms the visual observation: the Pearson correlation coefficient is 0.078, with a p-value of 0.287, which indicates that the correlation is not statistically significant. Therefore, no significant linear relationship is found between the instructor's evaluation and the final student performance.

The results of this study suggest that participation in the Flipped Classroom (FC) format was associated with higher academic performance in the BMA403 course. Students who actively participated through preparation, presentation, and interaction recorded higher final-exam percentile scores compared to non-participants (Welch t-test $p = 0.0196$; means 50.12 vs 41.31 on the 0–100 percentile scale). Because participation was voluntary and no baseline equivalence measures were available, the findings should be interpreted as associative rather than causal. Across YA1–YA9, unadjusted differences were most pronounced in YA9 and YA4, and these two remained statistically significant under a Bonferroni correction; no statistically significant correlation was observed between instructor evaluation and final-exam performance ($r = 0.078$, $p = 0.287$).

In summary, this study provides evidence consistent with the effectiveness of the FC model in specific cognitive contexts, indicating that active and experiential student engagement may contribute to improved performance. The findings add to the theoretical discussion on the flipped classroom and provide important perspectives for future adaptations and improvements in educational design. Finally, further investigation is recommended with a combination of quantitative and qualitative data, as well as the development of individualized profiles of students who benefit most from this specific teaching approach.

4. DISCUSSION

The results of this study suggest that the Peer Learning–Flipped Classroom (PL-FC) approach is associated with improved performance in a university-level quantitative business course. The statistically significant difference observed in final-exam percentile scores between students who engaged actively in PL-FC ($M = 50.12$) and those who followed a standard, passive format ($M = 41.31$) [Section 2.1] aligns with the flipped classroom rationale that structured preparation and active, collaborative engagement can support deeper processing of course material [1,2,10]. However, because participation was voluntary and baseline equivalence was not established, the result should not be interpreted as evidence of causality.

This result is in line with what other researchers in the area have found. For example, Bergmann and Sams [1] first said that moving the place of teaching outside of the classroom made it easier to differentiate, give students more control, and provide in-class support. O'Flaherty and Phillips [2] have noted that students in FC settings gain not just from being exposed to information, but also from having more chances to interact with it in a meaningful way. Our results support this approach and add a peer-led aspect that may further support decentralized, student-led education [11,13].

Both social constructivist theory and cognitive load theory can help us understand how these advances are made in the classroom. When students work together to make instructional materials, they have to deal with extra load, organize their knowledge schemata, and think about how hard it will be to understand the concepts. This process naturally makes metacognitive control stronger [6,12,16]. Also, switching positions between tutor and tutee stimulates two processing pathways: students have to learn to understand and explain, decode and encode, and do all of this in the same cognitive frame. This fits with Topping's classification of peer-assisted learning, which stresses the benefits of alternating roles and working together [11].

But not all areas of content get the same benefits from PL-FC. The study of the submodules (Section 2.2) showed that some units, such as YA4, YA8, and YA9, had statistically significant variations in performance. However, in other units, like YA1, YA3, and YA5, the difference between the Flipped and Non-Flipped groups was not significant. This variability calls for a more detailed analysis. It is possible that some forms of information, especially those that require procedural fluency, algorithmic reasoning, or organized issue decomposition, are easier to explore with peers. On the other hand,

subjects that are more abstract or technical may need help from the teacher or may not be simple to talk about with other students [4,8,18]. These various impacts are comparable to what has been seen in real-life studies of flipped education in STEM fields. Morton and Colbert-Getz [17] looked studied flipped anatomy classrooms and found that although though students were overall happier and more confident, their performance improvements were only in some areas of material. Lape et al. [18] have warned against making generalizations about the effectiveness of flipped classrooms, saying that the success of these kinds of interventions typically depends on the structure of the material, the dynamics of the group, and the accuracy of the instructional design.

Another important finding is that there is a weak and statistically insignificant link between how well students did on their final exams and how well their instructors rated their tutorials ($r = 0.078$, $p = 0.287$) [Section 2.3]. At first, this conclusion may seem strange: you might think that students who did better in their teaching positions would also do better on formal tests of their understanding. But this gap makes us think about how academic success is not just one thing. Instructor ratings may include things like how well a student speaks, how well they work with others, or how well they present their work, which may not have anything to do with how well they perform on their final exams. Or, students may have shown that they understood the material well during group work, but not been able to demonstrate that understanding when working alone, such as on an exam. The fact that there is no association does not mean that the model is wrong; instead, it is a call to look again at how formative and summative assessments are aligned [14,19].

The fact that the study was conducted entirely online during the COVID-19 lockdowns also gives us important information about how well PL-FC methods work in digital settings and how well they can adapt. Not only did Microsoft Teams serve as a way to teach, but it also functioned as a place to work together, practice, and execute peer-led knowledge development [14]. The fact that the PL-FC approach appeared to work well in these situations implies that its teaching core—working together to prepare, becoming involved socially, and switching roles—is not limited to the physical classroom. This is consistent with prior work suggesting that FC techniques may work well in hybrid or remote settings if digital platforms are used wisely and students get enough help with digital literacy and group coordination [19].

The implications for lesson planning are substantial. First, the results of this study show that peer learning structures should be intentionally included in flipped pedagogies. Instead of seeing peer participation as extra or side, teachers should think about making it a part of the course's epistemic core. This means having clear scaffolding, rubrics that appreciate both content and process, and a grading system that gives credit for peer-led contributions without mixing up performance with charm or being outgoing.

Second, the results show that it's important to educate students not just how to master the material, but also how to teach. Androulakis et al. [10] and Boud [12] have both said that peer teaching works best when students are taught specific teaching methods, such as how to ask questions, how to pace themselves, and how to organize ideas. In our study, students made presentations with little help from the teacher. However, we informally noticed certain differences in the quality of the tutorials, which may have affected the group's results. Putting a short module on teaching skills at the beginning of the semester might help reduce this difference and improve the quality of peer-led education.

Third, the fact that there is no link between teacher ratings and test achievement makes it necessary to rethink how peer evaluation and formative feedback are set up. To make the link between teaching and individual cognitive consolidation stronger, future versions of this paradigm may include reflective elements like post-presentation debriefs, peer feedback cycles, or student-written teaching logs [13].

Lastly, the PL-FC paradigm may have implications beyond academic performance. This research did not assess student confidence, group cohesion, or digital fluency, although informal observations suggested possible improvement. These broader outcomes are consistent with the findings of Farren [13] and De Backer et al. [16], who argue that student-centered, peer-driven models help students build the skills they need for lifetime learning.

Limitations and Future Research

While the present study provides evidence of an association between PL-FC participation and higher performance, several limitations must be acknowledged. First, participation in the intervention was voluntary, introducing self-selection bias: students who opted into PL-FC may differ systematically from non-participants in motivation, time availability, prior preparation, and baseline ability. Second, no pre-intervention equivalence checks were available (e.g., diagnostic pre-test scores, prior GPA, or early-course benchmarks), so group comparability before the intervention cannot be verified. These features of the design mean that the observed differences should be interpreted as associative rather than causal. Future studies should aim to employ randomised designs, matched-group methods (e.g., propensity score matching), or baseline measures to strengthen causal inference.

Additionally, the study did not capture qualitative data, such as student reflections, group dynamics, or longitudinal effects. Future research would benefit from a mixed-methods design, combining statistical outcomes with ethnographic observation, discourse analysis, or longitudinal tracking across multiple semesters and modules.

Finally, while the PL-FC model appeared effective in an online environment, its generalisability to face-to-face or hybrid contexts remains to be fully tested. Similarly, differences across disciplines may modulate the model's effectiveness; what works in a quantitative business course may not translate seamlessly to theoretical humanities or experimental sciences.

5. CONCLUSION

We conclude that this discussion supports the pedagogical potential of the PL-FC model while also identifying the contextual and theoretical boundaries of its application. The results are consistent with earlier claims regarding the value of peer-led flipped instruction. They also extend the literature by suggesting its potential applicability in remote settings and its differentiated impact across content domains. As higher education continues to evolve in response to technological and epistemological pressures, models like PL-FC offer a potentially useful and adaptable framework for student-centred learning that integrates collaboration, autonomy, and intellectual agency.

ACKNOWLEDGMENTS

The authors wish to acknowledge the support of the University of Patras and the voluntary participation of the students enrolled in the BMA403 course during the 2020–2021 academic year.

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