

Flipped Classroom and student engagement: a qualitative exploration of perceptions and experiences in a university Department of Education

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ABSTRACT

The purpose of this qualitative study was to investigate students' perceptions and experiences regarding the flipped classroom (FC) in a fourth-year course on Lifelong Learning and Education (N=87). Data were collected through individual reflective journals, group collaborative journals, and four focus groups, and were analysed using thematic analysis. The findings highlighted five themes: (1) initial expectations, (2) motivation and engagement, (3) autonomy and collaboration, (4) instructor's role and feedback, and (5) challenges and suggestions. Overall, the FC enhanced active participation and self-regulated learning, though its effective implementation requires clear guidance, appropriate materials, and gradual familiarization.

KEYWORDS

Flipped Classroom, higher education, student engagement, self-regulated learning, qualitative research

RÉSUMÉ

L'objectif de cette étude qualitative était d'examiner les perceptions et les expériences des étudiants concernant la classe inversée (CI) dans le cadre d'un cours de quatrième année sur l'apprentissage et l'éducation tout au long de la vie (N=87). Les données ont été recueillies à travers des journaux réflexifs individuels, des journaux collaboratifs de groupe et quatre groupes de discussion, puis analysées au moyen d'une analyse thématique. Les résultats ont mis en évidence cinq thèmes principaux : (1) les attentes initiales, (2) la motivation et l'engagement, (3) l'autonomie et la collaboration, (4) le rôle de l'enseignant et la rétroaction, et (5) les défis et les suggestions. Dans l'ensemble, la CI a favorisé la participation active et l'apprentissage autorégulé, bien que sa mise en œuvre efficace nécessite des directives claires, des supports appropriés et une familiarisation progressive.

MOTS-CLÉS

Classe inversée, enseignement supérieur, engagement des étudiants, apprentissage autorégulé, recherche qualitative

THEORETICAL FRAMEWORK

The Fourth Industrial Revolution has brought new challenges to education, requiring universities to cultivate digital skills and redesign curricula in line with social needs (Karanikola & Panagiotopoulos, 2018). Among the innovative pedagogical approaches that have attracted significant attention is the flipped classroom (FC), which reverses the traditional sequence of instruction: students engage with the core material before class through videos or other digital resources, while in-class time is devoted to collaborative and experiential activities (Bergmann & Sams, 2012; Bishop & Verleger, 2013). This model fosters autonomy, reflection, and active participation, consistent with learner-centered pedagogical approaches (Hamdan et al., 2013), and has been associated with improved academic performance, self-regulation, and critical thinking (Akçayır & Akçayır, 2018).

This model enhances active learning and the development of critical thinking, offering more opportunities for feedback and reflection (Chen et al., 2014; Hamdan et al., 2013). The FC is grounded in a range of theoretical perspectives. Constructivism emphasizes the active role of learners in constructing knowledge through experience and dialogue (Fosnot & Perry, 2005), while self-regulated learning theory highlights the importance of planning, monitoring, and evaluating one's own learning process (Zimmerman, 2002). Its collaborative dimension can be understood through social interdependence theory, which underlines how cooperation and shared goals promote both individual and collective achievement (Johnson & Johnson, 2009). Furthermore, transformative learning theory stresses the capacity of the FC to encourage critical reflection and reassessment of assumptions, fostering deeper understanding and personal change (Liodaki & Karalis, 2013; Mezirow, 1991; Raikou & Karalis, 2016).

In higher education specifically, research on classroom interaction has shown that dialogue and collaborative learning are central to students' academic persistence and development (Brookfield & Preskill, 2005; Garrison et al., 2000; Tinto, 1997).

International studies consistently demonstrate that the FC enhances autonomy, motivation, and collaboration skills, while offering opportunities for reflection and feedback (O'Flaherty & Phillips, 2015; Zainuddin & Halili, 2016). At the same time, certain challenges have been reported, including increased workload, technological demands, and the need for instructors to adapt to a new role (Abeysekera & Dawson, 2015; Findlay-Thompson & Mombourquette, 2014). Student engagement, which is widely recognized as a central indicator of quality in higher education, encompasses cognitive, emotional, and social dimensions (Fredricks et al., 2004; Kuh, 2009). Tools such as the National Survey of Student Engagement (NSSE) and the UK Engagement Survey (UKES) have demonstrated that engagement is strongly linked to academic success and the development of life skills (Coates, 2010). Within the FC framework, engagement extends beyond physical presence to include preparation, collaboration, and active contribution to the learning community (Gilboy et al., 2015).

In Greece, the adoption of the FC is still at an early stage. While earlier studies emphasized the importance of ICT and active learning in higher education (Karalis & Koutsonikos, 2003), more recent research during and after the pandemic has highlighted the need for interactivity, differentiated teaching methods, and new forms of participation (Kedra & Kaltsidis, 2020; Sidiropoulou & Botsoglou, 2024). Evidence suggests that the FC can enhance student interest, adaptability, and participation, particularly in courses with a strong theoretical and experiential orientation.

Despite these developments, research remains limited concerning the emotional, social, and cognitive dimensions of students' experiences in such contexts (Lo & Hew, 2017). Understanding how students perceive, accept, and respond to the FC is essential for evaluating its effectiveness and improving its pedagogical design. This study contributes to this discussion by examining students' perceptions and experiences of the flipped classroom in the course Lifelong Learning and Education at the Department of Educational Sciences and Early Childhood Education (University of Patras). Drawing on reflective journals, collaborative group diaries, and focus groups, the research investigates aspects of engagement, motivation, and metacognitive development, with the aim of highlighting both the opportunities and the challenges of implementing this model in higher education (Raikou, 2012; Raikou & Karalis, 2016).

METHODOLOGY

This study adopted a qualitative research design in order to investigate students' perceptions and experiences regarding the flipped classroom (FC). The qualitative approach was deemed appropriate, as it enables an in-depth understanding of the meaning's students attribute to their engagement within the flipped classroom, highlighting how they experienced the learning process, their perceptions of their role, as well as the challenges and opportunities that emerged from the implementation of the method (Creswell & Poth, 2018; Denzin & Lincoln, 2018). The overall purpose was to examine the extent to which the FC model fosters engagement and learning in higher education. To this end, the research was guided by three questions.

- RQ1: Does the flipped classroom intervention improve students' engagement in the educational process;
- RQ2: Which factors facilitate or hinder the acceptance of the model
- RQ3: What are students view of the method in terms of satisfaction and what suggestions they propose for future implementation;

The intervention was carried out in the course Lifelong Learning and Education at the Department of Educational Sciences and Early Childhood Education, University of Patras. All students enrolled in the course were invited to participate, with twelve students (all female, aged 21-23) ultimately contributing data through individual and group journals. Additionally, a focus group was organized at the end of the course, including nine of the students, the researcher, and the instructor. This composition provided valuable insights not only into peer-to-peer interactions but also into the dynamics of the student-instructor relationship.

The three instruments used in this study were designed to capture complementary dimensions of students' experiences and to address the research questions in a systematic way. The individual reflective journals encouraged students to record their preparation, emotions, difficulties, and overall impressions after each session. These reflections were directly linked to RQ1, as they illuminated students' engagement in learning, and to RQ2, by highlighting the factors that facilitated or hindered their acceptance of the flipped classroom model.

The collaborative group journals provided a collective perspective on learning and interaction. Small groups documented how pre-class materials supported in-class activities, how collaboration unfolded, and how difficulties were managed. These accounts reflected the social and collaborative aspects of engagement (RQ1) and shed light on facilitators and barriers to the acceptance of the model (RQ2).

Finally, the focus group conducted at the end of the course offered a comprehensive discussion of students' overall views. The semi-structured prompts addressed initial expectations, experiences of autonomy and collaboration, evaluations of the model's strengths

and weaknesses compared to traditional teaching, and suggestions for improvement. These data responded primarily to RQ3, which explored students' overall views and satisfaction with the method, while at the same time reinforcing insights related to RQ1 and RQ2.

Each instrument contributed unique insights to the research questions, while their integration provided a holistic and credible understanding of students' engagement, the factors influencing the acceptance of the flipped classroom, and their evaluations of the method. This triangulation of data sources ensured a holistic and multi-layered understanding of the phenomenon (Flick, 2018).

RESULTS

Thematic analysis of the data revealed five main categories, each linked to the research questions, together with an additional section summarizing students' comparative evaluations and overall impressions.

Initial expectations and emotions (linked to RQ2)

For many students, the FC was a new experience associated both with curiosity and with anxiety about the preparation demands. One student noted: *"At the beginning I didn't know what to expect... but I felt I was coming to class better prepared."* Despite the initial awkwardness caused by the transition from passive attendance to self-regulated learning, students gradually developed confidence and a sense of responsibility. This finding is consistent with previous studies indicating that innovative methods may generate insecurity if sufficient guidance is not provided (Lo & Hew, 2017; O'Flaherty & Phillips, 2015). The emotional dimension thus emerges as pivotal for the acceptance of new pedagogical approaches (Braun & Clarke, 2006; Fredricks et al., 2004).

Active engagement and self-regulation (linked to RQ1)

Students particularly valued the autonomy to manage the pace, time, and mode of study. As one participant explained: *"I could study whenever and however I wanted. I wasn't a passive listener."* The ability to revisit and adapt the material strengthened their metacognitive skills, in line with international research findings (Akçayır & Akçayır, 2018). This outcome resonates with the theory of self-regulated learning (Zimmerman, 2002) and the principles of self-directed learning (Garrison, 1997; Knowles, 1975).

Collaborative learning and social interaction (linked to RQ1)

Group activities contributed both to a deeper understanding of concepts and to a stronger sense of belonging. One student emphasized: *"Working in groups helped me understand the concepts better. I liked hearing others' opinions"*. Collaboration and dialogue enhanced confidence and mutual support, aligning with sociocultural theory (Vygotsky, 1978) and social interdependence theory (Johnson & Johnson, 2009), both of which highlight dialogue and cooperation as fundamental elements of learning (Dillenbourg, 1999).

The guiding and supportive role of the instructor (linked to RQ2)

The instructor was perceived as a facilitator of learning, encouraging reflection and participation. As one student put it: *"The professor didn't just tell us what was right. He asked questions and encouraged us to think."* Feedback was considered timely and supportive, in accordance with the principles of social constructivism (Vygotsky, 1978), adult learning theory (Knowles, 1984), and research underlining the importance of formative feedback (Hattie & Timperley, 2007).

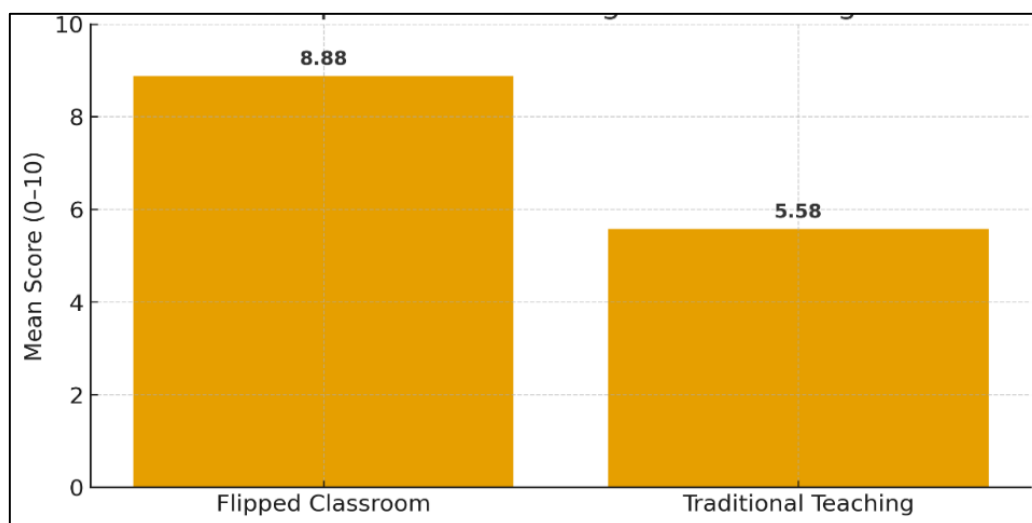
Challenges and support needs (linked to RQ2)

Students identified difficulties such as language barriers, increased workload (e.g., due to practicum commitments), and limited familiarity with technology. One student commented: “*Sometimes the videos in English confused me... I had to watch them two or three times.*” Another noted: “*Because I had a heavy workload with my practicum, I couldn’t fully keep up.*” These issues highlight the need for accessible, multimedia-based material and gradual familiarization with the method. International literature confirms that while the FC promotes flexibility, it may create barriers without clear guidance and adequate infrastructure (Akçayır & Akçayır, 2018; Bishop & Verleger, 2013; O’Flaherty & Phillips, 2015). Balancing autonomy and guidance thus emerges as a critical factor for success (Garrison, 1997; Kedraka & Kaltsidis, 2020).

Comparative evaluations and overall impressions (linked to RQ3)

In addition to the thematic categories, two specific focus group questions offered a direct assessment of students’ attitudes. Students were asked to comparatively evaluate their experience of the FC versus traditional teaching on a scale of 0–10. The average rating for the FC was 8.88, compared with 5.58 for traditional instruction, indicating a clear preference for the innovative model. Most students reported that the FC enhanced participation and preparedness, in contrast to the traditional method, which was perceived as restrictive and passive.

CHART 1



Comparison of teaching method ratings

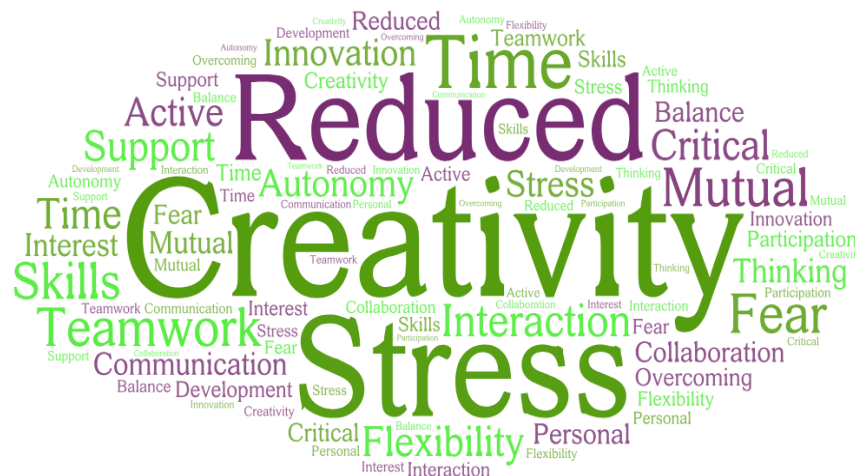
Students were also invited to provide one-word descriptions of their overall experience with the flipped classroom. Their responses, grouped into thematic categories, predominantly reflected positive connotations such as *pleasant*, *creative*, *effective*, *enjoyable*, *unique*, and *wonderful*, while a few noted more challenging aspects, including *different* and *demanding*. These findings portray the flipped classroom as an enjoyable, innovative, and pedagogically valuable approach. Figures 1 and 2 present word clouds that visualize students’ descriptions and the key concepts and perceived benefits of the model, while chart 2 illustrates the frequency distribution of the individual words, highlighting that the majority of students associated the FC with positive and enjoyable experiences.

FIGURE 1



Word cloud of students' one-word descriptions of their flipped classroom experience

FIGURE 2

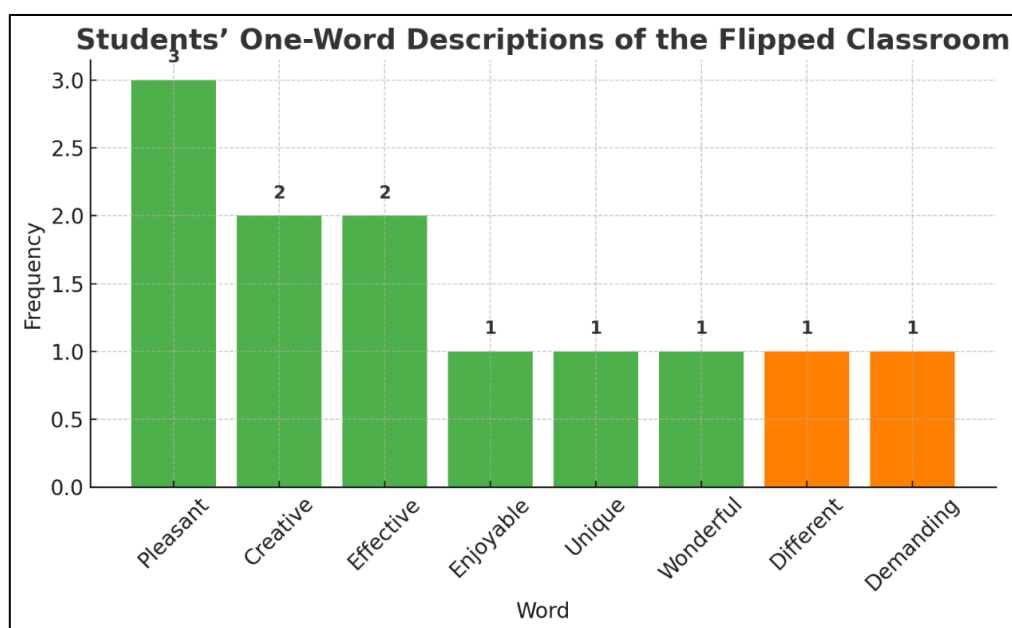


Word cloud of key concepts and perceived benefits of the flipped classroom.

Summary of findings

Overall, the findings demonstrated that the flipped classroom intervention effectively addressed the study's research questions. With regard to RQ1, evidence pointed to students' active participation, autonomy, metacognitive awareness, and collaboration, all of which reflected meaningful engagement in the learning process. In relation to RQ2, the data highlighted both facilitators and barriers, including students' initial emotions, the supportive role of the instructor, and the challenges they encountered throughout the course. Finally, RQ3 was directly addressed through students' comparative evaluations of the model, their reported levels of satisfaction, and their proposals for future implementation expressed during the focus groups. Collectively, the results suggest that the flipped classroom promoted engagement, self-regulation, and collaboration, while at the same time enhancing students' overall sense of satisfaction. Nevertheless, the challenges identified underline the importance of providing appropriate support and thoughtful adaptation when applying the model in higher education contexts.

CHART 2



Frequency distribution of one-word responses describing students' overall experience with the

DISCUSSION

The findings of this study provide strong evidence that the flipped classroom (FC) can enhance students' engagement and promote self-regulated learning in higher education, directly addressing RQ1. Students emphasized that the model encouraged them to assume greater responsibility for their preparation and to manage their own study time and pace. This sense of autonomy and flexibility increased their confidence, aligning with theoretical models of self-directed and self-regulated learning (Garrison, 1997; Knowles, 1975; Zimmerman, 2002). Similar to previous international research (Akçayır & Akçayır, 2018; Lo & Hew, 2017), the present study shows that when learners are provided with the opportunity to take control of their learning, they not only become more actively engaged but also develop critical metacognitive skills.

Another central finding relates to the role of social interaction and collaboration. Group activities and reflective discussions fostered a stronger sense of belonging and supported the development of communication and problem-solving skills. Students described how exchanging ideas with peers helped them to better understand course concepts, while the supportive atmosphere cultivated by teamwork reinforced their willingness to participate. These outcomes correspond with the principles of sociocultural theory (Vygotsky, 1978), which highlights the importance of dialogue and interaction in cognitive development, and with social interdependence theory (Johnson & Johnson, 2009), which demonstrates that cooperation and shared goals strengthen both individual and collective achievement. By foregrounding collaboration, the FC moves beyond traditional forms of passive learning and creates communities of inquiry where knowledge is constructed collectively (Dillenbourg, 1999; Garrison et al., 2000).

The study also underscores the pivotal role of the instructor, particularly in relation to RQ2. Students viewed the professor less as a transmitter of information and more as a facilitator who encouraged reflection, posed questions, and provided timely feedback. This facilitator stance created an open classroom climate where students felt free to express their thoughts and

evaluate their own learning progress. The importance of formative feedback, highlighted in both students' accounts and the literature (Hattie & Timperley, 2007), indicates that the instructor's interventions are crucial not only for scaffolding learning but also for cultivating trust and motivation. In this sense, the FC requires a redefinition of the teacher's role towards a more dialogic and participatory pedagogy, consistent with adult learning theory (Knowles, 1984) and constructivist perspectives (Fosnot & Perry, 2005).

Despite these positive outcomes, the study also revealed several challenges that shaped students' experiences of the FC, thereby addressing RQ2 more comprehensively. Language barriers were particularly evident in relation to English-language video materials, which some students found difficult to follow. The increased workload associated with both the FC and concurrent commitments such as teaching practice further complicated engagement for some participants. Technological barriers, including limited familiarity with digital tools, were also mentioned. These findings resonate with international studies emphasizing that while the FC promotes flexibility, it may create barriers unless sufficient support structures are in place (Alsobaie, 2018; Bishop & Verleger, 2013; O'Flaherty & Phillips, 2015). The evidence from this study thus suggests that balancing autonomy with clear guidance, providing accessible multimodal resources, and offering systematic technical support are essential for effective implementation.

Reflection emerged as a mechanism for deeper learning, especially through the use of journals and focus group discussions. Students reported that reflecting on their experiences helped them identify difficulties, evaluate their progress, and reassess their assumptions. This finding directly connects to transformative learning theory (Mezirow, 1991; Raikou & Karalis, 2016), which emphasizes critical reflection as a central pathway to personal and academic development. The reflective component of the FC, therefore, should not be considered an optional supplement but rather a key pedagogical element that enhances metacognitive growth and fosters long-term learning.

With regard to RQ3, students' overall evaluations of the FC were overwhelmingly positive. The quantitative comparison between the two models, where the FC received an average score of 8.88 compared to 5.58 for traditional instruction, clearly illustrates the perceived superiority of the innovative approach. The one-word descriptions provided by students further reinforce this point, with the majority of responses being positive (e.g., pleasant, creative, effective, enjoyable, unique, wonderful). Such evaluations suggest that students not only adapted to but also appreciated the participatory and interactive nature of the FC. At the same time, the presence of descriptors such as "different" and "demanding" indicates that students were aware of the additional effort required, which is consistent with the dual nature of the FC as both an empowering and challenging approach.

Overall, the findings confirm that the FC is not simply a technological adjustment but a pedagogical innovation that has the potential to reshape higher education practices. It supports students' engagement, autonomy, collaboration, and reflection, while simultaneously highlighting the conditions and supports necessary for its successful implementation. In this sense, the FC aligns with broader educational objectives, including the cultivation of 21st-century skills such as digital competence, adaptability, and collaborative problem-solving—skills that are increasingly vital in the era of the Fourth Industrial Revolution (Karanikola & Panagiotopoulos, 2018).

CONCLUSIONS AND PEDAGOGICAL IMPLICATIONS

This study provides evidence that the flipped classroom (FC) can serve as a transformative learning experience for higher education students, addressing all three research questions.

Specifically, it demonstrated that the FC fosters active engagement and self-regulation (RQ1), that its effectiveness is influenced by both facilitating and hindering factors such as emotions, workload, and technological barriers (RQ2), and that it is positively evaluated by students, who offered constructive suggestions for its improvement (RQ3). These findings are consistent with prior research highlighting the FC's potential to strengthen metacognitive skills and learner autonomy when adequately supported (Akçayır & Akçayır, 2018; Lo & Hew, 2017).

From a pedagogical perspective, several implications emerge. First, the gradual introduction of the method, accompanied by clear guidelines and pilot stages, appears necessary to reduce initial uncertainty and to facilitate adaptation, particularly among students unfamiliar with participatory learning approaches (O'Flaherty & Phillips, 2015). Second, workload management and accessibility of resources are critical. Designing multimedia materials that are linguistically and culturally adapted—for instance, by providing Greek translations where appropriate—can prevent comprehension difficulties and ensure inclusivity. Third, the role of the instructor must be reconceptualized as that of a facilitator who guides collaboration, fosters reflection, and provides timely and meaningful feedback, a point widely emphasized in studies on formative assessment and peer learning (Hattie & Timperley, 2007; Topping, 1998). Fourth, systematic integration of collaborative and reflective activities into the course design is essential for strengthening engagement, critical thinking, and a sense of community, aligning with findings from both international and Greek research (Kedra & Rotidi, 2017). Fifth, aligning the FC with broader educational objectives is crucial, as it can cultivate autonomy, adaptability, and digital competence—skills required for academic success and professional development in contemporary society (Karanikola & Panagiotopoulos, 2018).

At the institutional level, the challenges identified in this study highlight the importance of technological infrastructure, ongoing professional development for instructors, and policies that support and reward pedagogical innovation. Without such structural support, the sustainability of the FC model may be compromised, as also observed in broader reviews of the literature (Abeysekera & Dawson, 2015).

Future research could build on this study by exploring the long-term impact of the FC on students' academic trajectories and professional skills, by examining its implementation across diverse disciplines and student populations, and by integrating mixed-methods approaches that combine qualitative insights with quantitative measures of learning outcomes. Moreover, the investigation of hybrid models that combine the FC with distance or experiential learning could reveal new opportunities for higher education, particularly in contexts such as Greece where traditional, lecture-based instruction continues to dominate.

The contribution of this study lies in its focus on a course with both theoretical and experiential components, thereby adding new dimensions to international and Greek literature. By foregrounding students' voices and emphasizing the role of reflection, the research highlights the FC's potential to foster participatory, differentiated, and reflective practices in higher education. Ultimately, the findings demonstrate that, when carefully designed and adequately supported, the FC represents a powerful pedagogical shift capable of bridging traditional academic culture with the evolving demands of contemporary society.

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