

Promoting Pedagogical Innovation for Student Success in Higher Education: Evaluating the Impact of Faculty Training at UPT

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Abstract

Pedagogical innovation is key to improving teaching and learning in higher education. As part of the +Sucesso@UPortucalense project—funded by DGES and the PRR—a teacher training program was implemented at Portucalense University (2024–2026) to support academic success and reduce student dropout. One of the components of the program was teacher training in pedagogic innovation. Therefore, a training program was developed including five training courses focused on active learning methods: Project-Based Learning, Gamification, Assessment and Feedback, Online Learning, and Curriculum Planning. Faculty participated in hands-on sessions aimed at developing innovative teaching practices. Their satisfaction was assessed at the end of each training, through online surveys combining quantitative and qualitative data. Results showed positive satisfaction in using active learning strategies. The initiative proved effective in supporting faculty development and enhancing student engagement through innovative pedagogy.

Keywords: Pedagogical Innovation, Active Learning, Pedagogic Training, Higher Education, Student Success

1 Introduction

Pedagogical innovation plays a crucial role in enhancing the quality of teaching and learning in higher education. Current research highlights that innovative teaching practices—such as flipped classrooms, problem-based learning, and blended learning—significantly increase student engagement, motivation, and critical thinking skills (Alves & Fernandes, 2021; Bhuttah et al., 2024; Kaynaradağ, 2017). These methods promote deeper learning by encouraging active participation and reflective thinking, shifting the focus from traditional, teacher-centered instruction to more dynamic, student-centered learning environments (Bonwell & Eison, 1991; Prince, 2004).

To effectively implement these innovative strategies, comprehensive pedagogical training for faculty members is essential. Pedagogic training provides the opportunity for faculty to engage with the tools necessary to create more motivating and effective learning environments. This training equips educators with the skills needed to integrate technology effectively and design inclusive, student-centered curricula (Muammar & Alkathiri, 2021; Stentiford & Koutsouris, 2020). When faculty members are proficient in innovative teaching methods and supported by inclusive leadership, students' critical thinking abilities and overall academic performance improve (Fernandes et al., 2023).

Moreover, pedagogical innovation helps create more motivating and effective learning environments. By adopting active learning methodologies and utilizing technological advancements, educators can develop flexible and engaging classrooms that accommodate diverse learning needs (Ödalen et al., 2018; Stentiford & Koutsouris, 2020). This adaptability not only enhances student academic success and satisfaction but also prepares learners to meet the evolving demands of the modern workforce (World Economic Forum, 2025).

This is one of the main goals of the +Sucesso@UPortucalense project, an institutional project implemented at Portucalense University, Porto, Portugal within the sub-measure of the “Program for Promoting Success and Reducing Dropout in Higher Education”, funded by the General Directorate for Higher Education (DGES) and the Recovery and Resilience Plan (PRR). The main objective of this program is to develop initiatives to promote academic success and prevent retention and dropout of first year students, including the development of innovative teaching and learning practices. The project has the duration of two years (2024-2026). Within the scope of this project, a teacher training program was developed and implemented in the academic year of 2024/2025, under the coordination of the Pedagogic Innovation Office at Portucalense University. The training focused on active learning methodologies and aimed to develop innovative teaching competencies among of faculty members. The five courses covered were: 1) Team-based learning – TBL (4h); 2) Project-based Learning – PBL (4h); 3) Gamification in the Classroom (5h); 4) Assessment and Feedback in Active Methodologies (6h); and 5) Design, Facilitation, and Assessment of Online Learning (20h). By exploring active learning principles, teachers reflected about their teaching strategies to better engage students and enhance academic outcomes.

2 Methods

The main objective of this paper is to present the results of the evaluation of teachers’ satisfaction with the pedagogical training courses carried out during the academic year of 2024/2025. The following research questions were defined to guide the study:

- To what extent are teachers at Portucalense University satisfied with the pedagogical training courses conducted during the academic year 2024/2025?
- What are the most positive and least positive aspects of the pedagogical training courses as perceived by the participating teachers?
- How do teachers plan to apply the knowledge and skills gained from the training sessions to their teaching practices within their curricular units?

Portucalense University is a private higher education institution located in Porto, Portugal. The teaching staff is distributed across six Departments: Architecture and Multimedia Gallaecia; Law; Psychology and Education; Economics and Management; Science and Technology; and Tourism, Heritage and Culture. It offers 15 different bachelor degrees, 19 masters and 3 PhD degrees. In terms of teachers and staff, it has about 250 professionals and more than 4100 students enrolled in the university programmes.

A mixed-methods approach was used, combining quantitative and qualitative data using online surveys at the end of each training course. The survey was applied at the end of the training sessions, with the aim of evaluating the satisfaction of the participants in regard to each of the five training courses. The questionnaire was created through the *Google Forms* tool. The structure of the questionnaire is presented in Table 1.

Table 1. Items in the Online Survey

Items	Type of Questions
1. The training session met my expectations.	Closed Response (Likert scale, 1 to 5)
2. The topics addressed in the training session were relevant.	
3. The training strategy used was adequate.	
4. I actively participated in the training activities.	
5. The trainer motivated the participants.	
8. In general, indicate your degree of satisfaction with the training session.	Open Response
6. What are the most positive and less positive aspects?	
7. How do you plan to transfer the knowledge and skills developed to your curricular units?	
Observations/Comments	

3 Results

In this section, the results from the five training courses are presented and discussed based on the quantitative data analyses, complemented with the qualitative findings from the open-ended questions. Table 2 presents the number of participants in the training courses and respondents.

Table 2. Participants in the Training Courses

Training courses	Nº. participants	Nº. responses to survey
Team-Based Learning (TBL)	13	6
Project-Based Learning (PBL)	21	7
Gamification in the Classroom	39	10
Assessment and Feedback in Active Learning	24	5
Design, Facilitation and Assessment of Online Learning	32	17

3.1 Team-Based Learning - TBL (3h)

The results suggest a high level of satisfaction with the training sessions, particularly in terms of content relevance, trainer effectiveness, and participant engagement. There is a slight variation, with participants scoring the general satisfaction and training strategy just below the perfect mark, indicating room for minor improvements, though overall satisfaction remains very high.

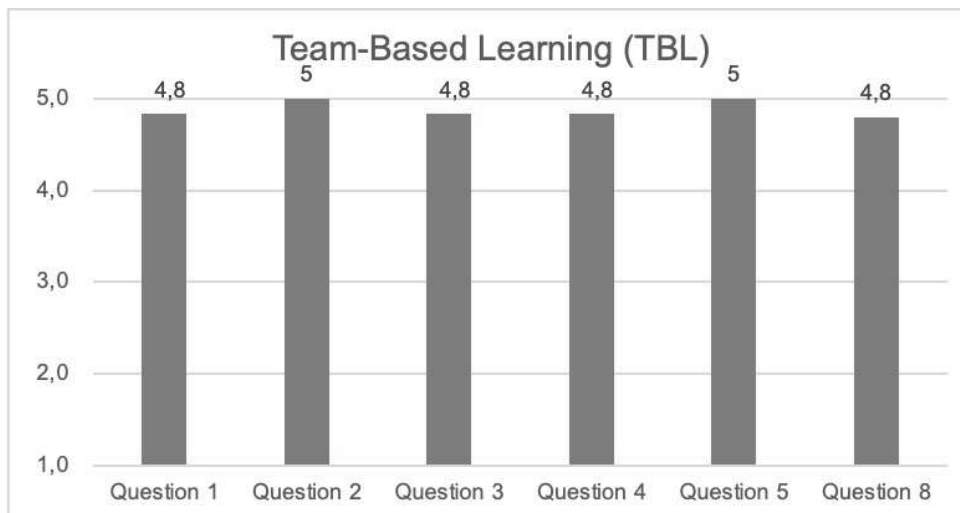


Figure 1. Results from participants in the training session “Team-based learning”

In the open ended-questions, the participants expressed the intention to apply the knowledge and skills gained in their teaching practices in practical applications in the classroom, enhancing student collaboration, improving lesson planning and facilitating theoretical content understating. Overall, the knowledge gained from the training will be applied to improve teaching strategies, foster collaboration, and enhance student learning outcomes through active participation and practical application of TBL. Some of the participants quotes confirm this:

"Apply TBL directly in the classroom context through practical activities."

"For more demanding courses, use TBL to motivate students and encourage team learning, fostering healthy competition."

"Adjust and improve the planning of future lessons using the methods learned."

3.2 Project-Based Learning - PBL (4h)

The results reflect generally positive feedback, particularly in terms of the trainer's ability to motivate participants and the relevance of the topics covered. However, there are areas, such as the adequacy of the training strategy and the level of active participation, where improvements could be made. The overall satisfaction is still strong, but there is room to further align the training strategy and increase engagement during the sessions.

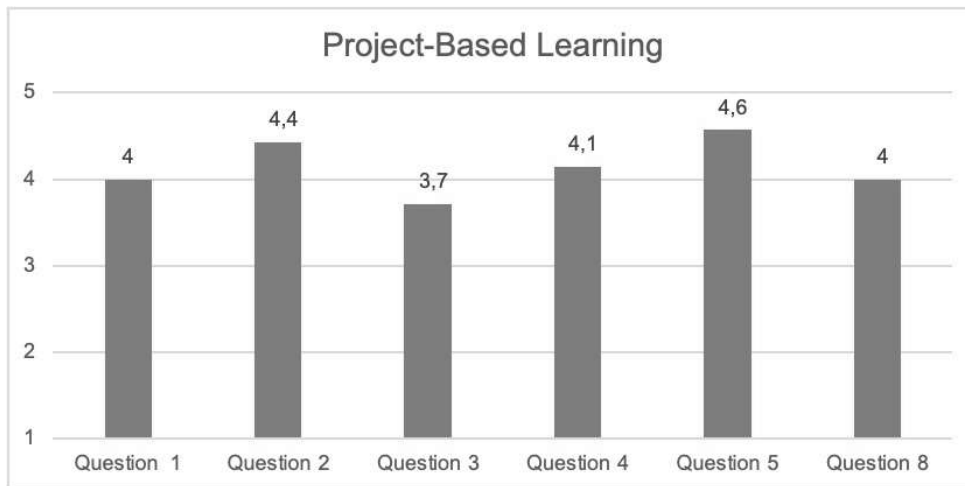


Figure 2. Results from participants in the training session "Project-based learning"

Participants plan to transfer the knowledge gained into their teaching environments, particularly through the implementation of projects, application of group management techniques, and adaptation of methods for the curricular unit. However, there is a perception that more time would have been necessary to explore all concepts and techniques in greater depth, with suggestions for adjustments to the format and the trainer's approach to enrich the learning experience. The following quotes from participants confirm this:

Strengths: Getting a good connection with the trainees. Improvement points: More time was needed to develop some aspects.

Strengths: the skills-based approach and the realization of the project as a team; Less strong points: in some situations, exposure could be reduced allowing more time to "do", more application.

3.3 Gamification in the Classroom (5h)

The "Gamification in the Classroom" training session received generally positive feedback, particularly in terms of the relevance of the topics and the motivation provided by the trainer. However, the training strategy could

benefit from refinement, as indicated by the relatively lower score of 3.8. While participants were actively engaged and satisfied with the session overall, there is room to enhance both the interactivity of the activities and the alignment of the training methods with the participants' needs to improve the experience further.

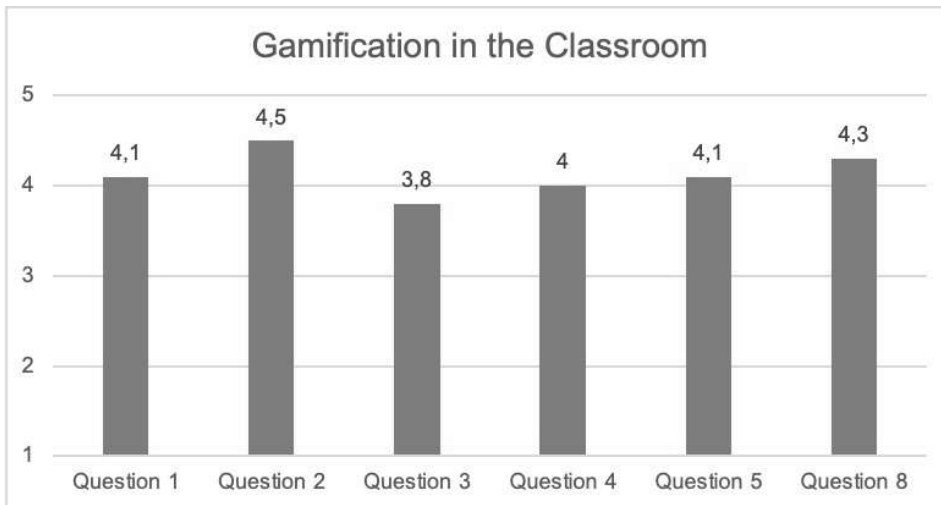


Figure 3. Results from participants in the training session "Gamification in the Classroom"

In the open-ended questions, participants indicated that the main strengths of the training were its innovative and relevant topic, practical examples of tools, the engaging approach of the trainer, and the availability of resources for adaptation to the participants' teaching needs. Several participants expressed an interest in applying the escape room method in their classrooms, with plans to implement it at the end of each topic or within specific curricular units. This will provide an engaging way to reinforce learning. The following quotes confirm this:

Very interesting and innovative topic for preparing some challenges in the classroom.

Strong points: Current and relevant topic. Knowing practical examples of tools we can use.

Continue to develop gamification-based activities in curricular units where students show greater resistance (e.g., Statistics). [I already use these strategies].

At the end of each topic, I would like to implement an escape room."

3.4 Assessment and Feedback in Active Learning (6h)

The "Assessment and Feedback in Active Learning" training session received strong feedback, particularly in terms of the trainer's effectiveness and the relevance of the topics covered. The high participation score also indicates that the session was interactive and engaging. While the overall satisfaction was positive, some minor improvements could be made in refining the training strategy and ensuring the session fully aligns with participants' expectations. Nonetheless, the session appears to have been a success, with room for slight enhancements to further elevate the experience.

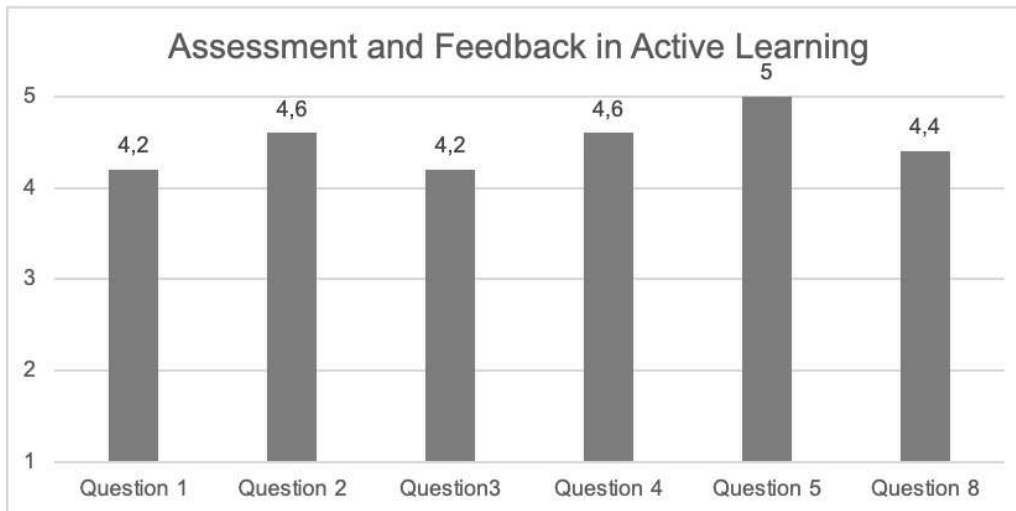


Figure 4. Results from participants in the training session "Assessment and Feedback in Active Learning"

Findings from the qualitative data indicate that the training's main strengths included the focus on competency-based assessment, the practical examples of assessment rubrics, and the clear and interactive teaching approach. Participants plan to revise their curricular units, focusing on competencies and evaluation methods, and will apply these strategies to improve their evaluation grids and teaching methods, ensuring that the learning and assessment process is more effective and transparent. The following quotes from participants confirm this:

Strong points: the approach to assessment with a focus on competencies and the exemplification of assessment rubrics.

I will redo the FUC of the course I will teach in the second semester, focusing on competencies and their assessment, using rubrics.

Improve the evaluation grid for interdisciplinary projects.

3.5 Design, Facilitation and Assessment of Online Learning (20h)

The "Design, Facilitation, and Assessment of Online Learning" training session was well-received, particularly in terms of the relevance of the content, the trainer's ability to motivate participants, and overall satisfaction. While most participants were actively engaged, there is room to improve the interactivity of the training activities and the alignment of the training strategy with participants' learning preferences. The high relevance of the topics indicates that the session addressed important issues, but there may be opportunities to enhance the delivery to increase both participation and engagement.

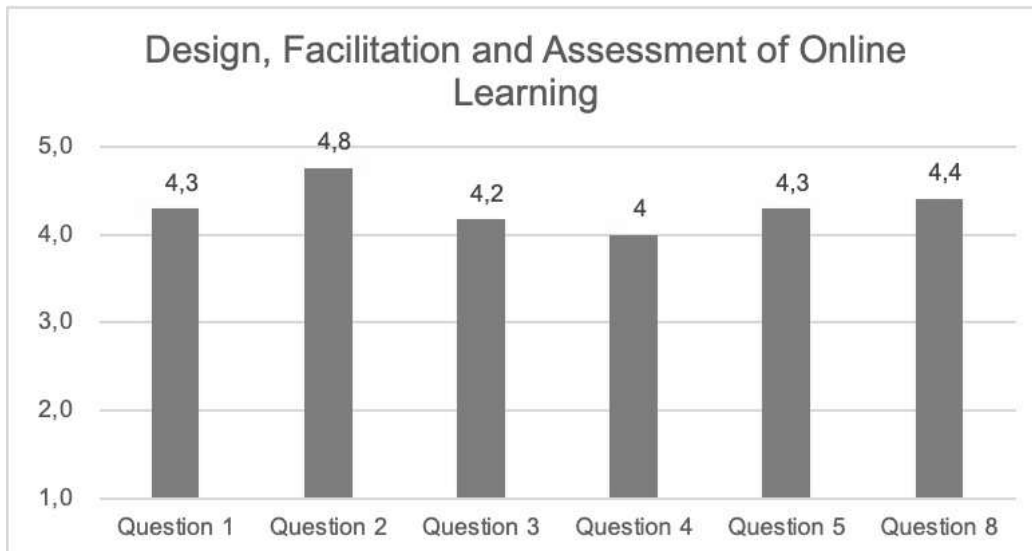


Figure 5. Results from participants in the training session "Assessment and Feedback in Active Learning"

The qualitative data highlighted the trainer's knowledge and ability to motivate participants as key strengths. Participants appreciated the trainer's availability to clarify doubts and the dynamism in the sessions. In terms of the knowledge transfer and skills developed, participants refer that they plan to improve the use of Moodle by applying their knowledge to create more interactive and dynamic materials, such as tests, videos, and quizzes. On the one hand, the practical component of the course was noted as a strength, with participants enjoying the hands-on exercises and the opportunity to practice what was presented during the sessions. On the other hand, participants noted that time constraints and the overload of activities made it difficult to fully engage with and complete all tasks. These quotes reflect the participants' plans to enhance Moodle usage, incorporate interactive and dynamic tools, and gradually implement these strategies into their teaching practices.

Strong points: Trainer's competence and availability; approach to innovative teaching strategies very useful for teaching; dynamism of activities/tasks proposed.

Use tools to improve the structure/presentation of theoretical content, creating interactive instruments (videos with questions/challenges, educational games).

Weak points: Too many requests/formulations of exercises within exercises.

Weak points: limited personal availability, due to the accumulation of other professional tasks, for completing all the proposed asynchronous activities.

4 Discussion and Conclusion

The evaluation of the five pedagogical training sessions conducted at Portucalense University during the 2024/2025 academic year revealed a consistently high level of satisfaction among participating faculty members. Quantitative data indicated particularly strong ratings for the relevance of the content, the effectiveness and engagement of the trainers, and the practical applicability of the methodologies introduced. These results suggest that the training sessions were well-aligned with the professional development needs and teaching contexts of the participants. Among the sessions offered, "Gamification in the Classroom" and "Design, Facilitation, and Assessment of Online Learning" stood out not only for their high satisfaction ratings but also for attracting the highest number of participants. This trend underscores a growing institutional and

pedagogical interest in innovative teaching strategies that promote active student engagement and digital pedagogical competence. The attractiveness of these themes reflects a broader shift in higher education toward learner-centered approaches and the strategic use of educational technologies, especially in response to evolving student expectations and post-pandemic digital transformation in teaching practices. Moreover, the strong interest in these sessions may indicate that faculty members are seeking more flexible, interactive, and technology-enhanced teaching models to better support diverse learning styles and improve learning outcomes. This demand could guide future staff development initiatives, emphasizing continued support for digital pedagogy, student motivation techniques, and the design of hybrid or fully online learning experiences. The findings not only contribute to validate the current training approach but also provide direction for targeted future offerings that align with both institutional goals and faculty needs.

Qualitative feedback provided by the participants further reinforced the positive outcomes of the training sessions, revealing a clear and purposeful intention among faculty members to implement the acquired pedagogical strategies in their teaching practices. Many respondents described specific plans to integrate active learning methodologies such as gamification, project-based learning, collaborative activities, and the strategic use of digital tools into their curricular design. This perspective suggests that the training not only increased awareness of innovative approaches but also inspired actionable changes in teaching methods (Fernandes et al, 2023). The references to concrete classroom applications indicate that participants viewed the training as both relevant and immediately applicable. These intentions reflect a growing alignment between individual teaching practices and broader institutional priorities, particularly those related to enhancing student engagement, improving learning outcomes, and reducing dropout rates. The emphasis on methodologies that promote active participation and continuous assessment demonstrates a commitment to pedagogical innovation grounded in student-centered learning (ESG, 2015).

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