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ASSESSING STUDENTS' PERCEPTIONS OF A NEW PROBLEM-BASED LEARNING CURRICULUM IN MEDICAL EDUCATION

ABSTRACT

This study explores whether students' perceptions of aspects to be improved in pedagogical activities can contribute to understanding their level of adaptation to the Problem-Based Learning (PBL) methodology in Medical Education. A clear understanding of academic tasks is essential for effective learning. The transition from traditional teacher-centered to a student-centered active learning model requires students to adjust their perceptions to new ways of learning to maximize their learning experiences. However, assessing students' adaptation to the new method through purpose-designed instruments and sessions can be extremely demanding and overwhelming for educational researchers, those responsible for curriculum implementation and educational quality assurance, as well as for students themselves. Using content analysis, we evaluated the responses of 56 first-year students of an integrated Master's degree in Medicine to two open-ended questions in a pedagogical evaluation survey, already answered by the students, about suggestions for improvement in lectures and tutorial sessions. The identified categories indicate that responses to the questions in the pedagogical evaluation questionnaires offers valuable insights into students' perceptions of the new PBL educational approach. Regarding students' progressive adaptation to the new method, our findings suggest a gradual adjustment to the new learning model. However, by the end of Year 1, students still offer suggestions that align more with a teacher-centered approach rather than the student-centered philosophy inherent to PBL. Limitations of the study and suggestions for future research are proposed. Capturing students' perceptions of the new learning model and their evolution provides valuable insights for developing strategies to enhance students' learning experiences and achieve better educational outcomes, particularly in contexts where PBL has recently been implemented.

Keywords

Problem-Based Learning; Student perceptions; Medical education; Curriculum implementation.

1. Introduction

Success in task execution is strongly tied to students' perceptions of task requirements, as a clear understanding enhances planning, execution, and self-assessment skills, ultimately improving performance (Entwistle & Ramsden, 1983; Trigwell & Prosser, 1997). In transitioning from teacher-centered approaches to active, student-centered models like Problem-Based Learning (PBL), students must adjust their perceptions of academic tasks to fully engage with the new method and optimize their learning (Biggs & Tang, 2011).

To better understand how students, engage with and adapt to a new pedagogical approach like PBL, it is important to examine their perceptions of the learning process and how these evolve over time. However, using methods like focus groups, interviews, or extra questionnaires can be resource-intensive and increase the burden on students, who already complete several satisfaction surveys. Given this, we questioned whether existing satisfaction questionnaires might already provide insights into students' adaptation to the new method. If so, these could serve as a valuable tool to monitor adaptation without increasing demands on students. In this context, the present study addresses two main research questions:

1. Can students' responses to regularly conducted pedagogical assessment questionnaires be used to evaluate their perceptions of the new educational model, PBL?
2. Do students' perceptions of the educational model evolve and become more aligned with PBL as they progress through their academic journey?

In traditional methods, teachers define and deliver content, leaving students in a passive, directive-following role (Moust et al., 2017). Conversely, PBL places students at the center of learning, requiring them to define objectives, research, select resources, and develop self-directed learning strategies (Trullàs et al., 2022). This approach aligns with the principles of constructivist, contextualized, collaborative, and self-directed learning (CCCS principles).

According to the constructivist principle, students interpret new material by connecting it to their existing cognitive structures (Piaget, 1971). Pedagogical activities, such as the reflection step in PBL's seven-step model, are designed to help students build on prior knowledge (Moust et al., 2017). The contextualized learning principle states that knowledge is more meaningful when tied to practical situations. In PBL, problems contextualize content (Moust et al., 2017). Collaborative learning underscores the role of social interaction in cognitive development (Piaget, 1971; Vygotsky, 1978). Group work, discussions, and peer interactions in PBL foster deeper understanding (Moust et al., 2017; Ghani et al., 2021). The self-regulated learning principle highlights the importance of students directing their learning by setting goals, identifying resources, and using effective strategies (Lopes et al., 2020). Self-reflection and independent study are essential in this process (Moust et al., 2017).

In the PBL model, teachers act as facilitators, encouraging students to engage actively, activate prior knowledge, stimulate discussion, promote self-regulation, and contextualize topics (Dolmans et al., 2005; Schmidt et al., 2011).

For students to benefit from a PBL approach, they must clearly understand their roles, expectations, and how learning activities align with their objectives (Moust et al., 2017). Implementing PBL in medical courses, particularly for students unfamiliar with active learning, requires a shift in perceptions to adapt to this method. Evaluating these perceptions is crucial for understanding their adjustment but can be resource-intensive, involving tools such as questionnaires, interviews, or focus groups.

2. Methodology

2.1 Participants

The study included all 56 first-year medical students enrolled in the integrated Master's program at a private medical school during the 2021/2022 academic year. The program follows a PBL curriculum and comprised 51 females and 5 males aged between 18 and 22 years ($M = 19.3$; $SD = 0.98$).

2.1.1 Students' perceptions of the PBL approach

Students' perceptions were assessed through responses to pedagogical evaluation surveys administered for each course unit (CU) as part of the university's quality assurance system. The survey, developed by Maastricht University, a leader in PBL medical education, is used to evaluate CU quality and aims to: (a) assess student satisfaction with course organization and learning facilitation; (b) identify CUs with lower ratings, understand influencing factors, and implement improvements; and (c) highlight well-rated CUs, recognize successful practices, and encourage their adoption across other CUs.

The survey includes 53 items, with five open-ended questions asking student suggestions for improving various components such as course organization, online activities, lectures, tutorials/problems, and practical sessions. For this study, responses to two questions, suggestions for improving lectures (*What tips do you have to improve the lectures?*) and tutorial sessions/problems (*What tips do you have to improve the tutorials/problems?*) were analyzed.

PBL lectures differ from traditional approaches. They are designed to provide integrative and comprehensive perspectives, encourage independent study, and foster collaborative discussion. Unlike traditional lecture methods, PBL lectures are interactive and aim to build on students' prior knowledge. This question allowed for an evaluation of student adaptation to PBL by examining whether their feedback suggested a preference for more content delivery or for interactive and integrative teaching methods. Tutorial groups, the cornerstone of the PBL curriculum, consist of 10–12 students meeting twice weekly for two hours under a tutor's guidance.

In these sessions, students analyze problems, identify learning objectives, engage in independent study, and reconvene to share and clarify findings.

Tutors act as facilitators, fostering active learning rather than delivering content. The analysis of feedback on tutorials provided insights into students' adjustment to this core element of the PBL method.

2.2 Procedure

As part of the quality assurance system, students were invited to complete online CU evaluation surveys at the end of each CU. These surveys, taking approximately 15 minutes, were completed during the last tutorial session of each CU. Participation was voluntary, anonymous, and confidential.

For the present study, survey responses from the first (Block 1.1, October 2021) and final (Block 1.6, July 2022) CUs of the academic year were analyzed. Between these two points, students completed four additional PBL-based CUs. The response rate for the first survey was 100% (56 students), and 94.6% (53 students) for the latter.

2.3 Data Analysis

To examine students' perceptions of the PBL pedagogical model and its associated activities, a content analysis of responses to the two selected questions was conducted.

Content analysis is a widely used qualitative research method for identifying, organizing, and interpreting meaningful patterns in textual data (Bardin, 2011). An inductive approach was adopted for this study, allowing categories and subcategories to emerge directly from the data without relying on predefined theoretical frameworks (Elo & Kyngäs, 2008; Thomas, 2006). This open-ended method facilitated a contextualized understanding of students' experiences and their evolution over time.

The content analysis followed a systematic approach comprising the following steps:

1. Pre-analysis and data familiarization: all responses were read thoroughly to gain an overview of students' suggestions. This step, crucial for identifying recurring themes and initial patterns, ensured immersion in the data (Bardin, 2011).
2. Coding and category creation: responses were coded into discrete units of meaning, which were then organized into major thematic categories. These categories emerged inductively from the data, consistent with the approach suggested by Elo and Kyngäs (2008).
3. Identification of subcategories: Subcategories were created within each main category for a more detailed analysis. For example, under "time management and class structure" subcategories like "class duration" and "workload" emerged. Each unit of meaning was assigned to only one subcategory. In line with Bardin's (2011) recommendations for rigorous content analysis, the categories and subcategories were developed according to the criteria of exhaustiveness (all relevant data were considered), exclusivity (each response unit was coded into only one category), homogeneity (categories addressed the same thematic dimension), pertinence (categories were directly related to the research questions), and objectivity and relevance (the categorization

process followed explicit and systematic rules). This process, following Mayring's (2014) guidelines, was done by one researcher and later discussed and adjusted by the research team.

4. Comparison across time points: responses from the beginning and end of the academic year were compared. This longitudinal analysis (Miles & Huberman, 1994) identified changes in students' perceptions, showing how their suggestions aligned more with the PBL model over time.
5. Comparison across class types: data were also analyzed to compare students' responses between the two class types (lectures and tutorial sessions). This helped assess whether both formats aligned with PBL principles.

3. Results

A total of 171 units of meaning were identified and analyzed, resulting in seven categories and 19 subcategories. Table 1 shows these categories, subcategories, and the number of units for each class type at both data collection points.

Table 1. Categories, subcategories, and frequency of units of meaning identified from content analysis

Categories	Subcategories	Frequency				Totals
		Lectures Block 1.1	Lectures Block 1.6	Tutorial Sessions Block 1.1	Tutorial Sessions Block 1.6	
Time Management and Class Structure	Class Duration	6	0	0	0	6
	Time Management	5	1	1	0	7
	Class Schedule/Online Classes	9	1	0	0	10
	Workload	1	0	0	0	1
Materials and Didactic Resources	Materials	11	0	0	0	11
	Resources	32	2	3	0	37
Interaction and Communication in Classroom	Teacher Communication	19	5	2	1	27
	Tutor's Role	0	0	7	1	8
	Classroom Interaction	8	1	1	0	10
	Feedback	0	0	1	1	2
Teaching Methods and Dynamics	Classroom Dynamics	4	2	0	0	6
	Pedagogical Techniques / Methodology / Pedagogy	3	1	7	0	11
Content and Curriculum	Curriculum Alignment	3	4	2	0	9
	Content Depth	0	3	1	0	4
	Content Repetition	0	1	0	8	9
	Formulation of PBL Cases	0	0	1	5	6
Evaluation and Consistency of Tutorial Groups	Assessment Processes	0	0	2	0	2
	Consistency Across Tutorial Groups	0	0	3	0	3
Tutor Area of Expertise	Tutor Area of Expertise	0	0	0	2	2
Total		101	21	31	18	171

Students provided more suggestions at the beginning of the year (#132) than at the end (#39). Analysis by class type showed more suggestions for lectures (#120) than tutorial sessions (#49), but this pattern only held at the start of the year (#101 for lectures, #31 for tutorials). By the end, suggestions decreased for both lectures (#21) and tutorials (18) (Fig. 1).

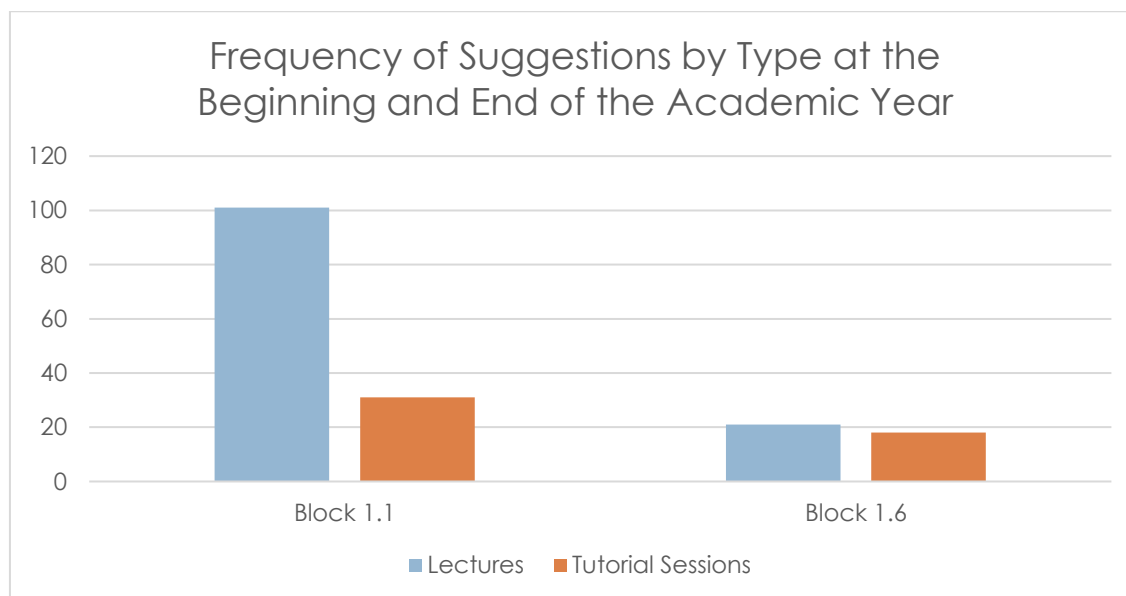


Figure 1. Frequency of suggestions by type at the beginning and end of the academic year

3.1 Time Management and Class Structure

The category *Time Management and Class Structure* includes suggestions for improving *Class duration*, *Time management*, *Class schedule/Online classes*, and *Workload*. A total of 24 suggestions were recorded. Lectures received the most suggestions (#21 at the start of the year, #2 at the end), while tutorial sessions received fewer (#1 at the start) (Fig. 2).

Students found *Lecture durations* excessive, which negatively impacted engagement, motivation, and productivity (e.g., “Lectures of 2 or 3 hours are not efficient”; “Some can be very long and exhausting”). They suggested shortening classes or adding breaks to improve retention. Additionally, students highlighted the need for better *Time management* during lectures, noting that content was presented too quickly, making it hard to follow (e.g., “Too much information for the time of the lecture severely decreases the quality”).

Regarding the *Class schedule/Online classes*, students suggested holding lectures online (e.g., “Do it online also”; “This would avoid time spent on transportation”). They also criticized the *Class schedule*, preferring morning sessions when they were more alert and focused with fewer free hours between classes (e.g., “The lectures are too spaced out, making us start and end study frequently”). By the end of the year, only two suggestions remained for lectures, one about time management and another regarding the schedule of sessions/online classes.

By the end of the year, there were only two improvement suggestions for lectures, one related to *Time management* and the other regarding the *Class schedule/online Classes*.

Regarding *Workload*, students suggested more time between tutorial sessions at the start of the year to better absorb the content (e.g., "More time for each case would be great. I feel like I did not assimilate many concepts").

Students' suggestions reflect a teacher-centered, content-focused approach. More suggestions were made for lectures than tutorials, with fewer lecture suggestions by year-end. These results may indicate a shift in students' focus away from lectures and content-heavy approaches to more self-directed learning processes.

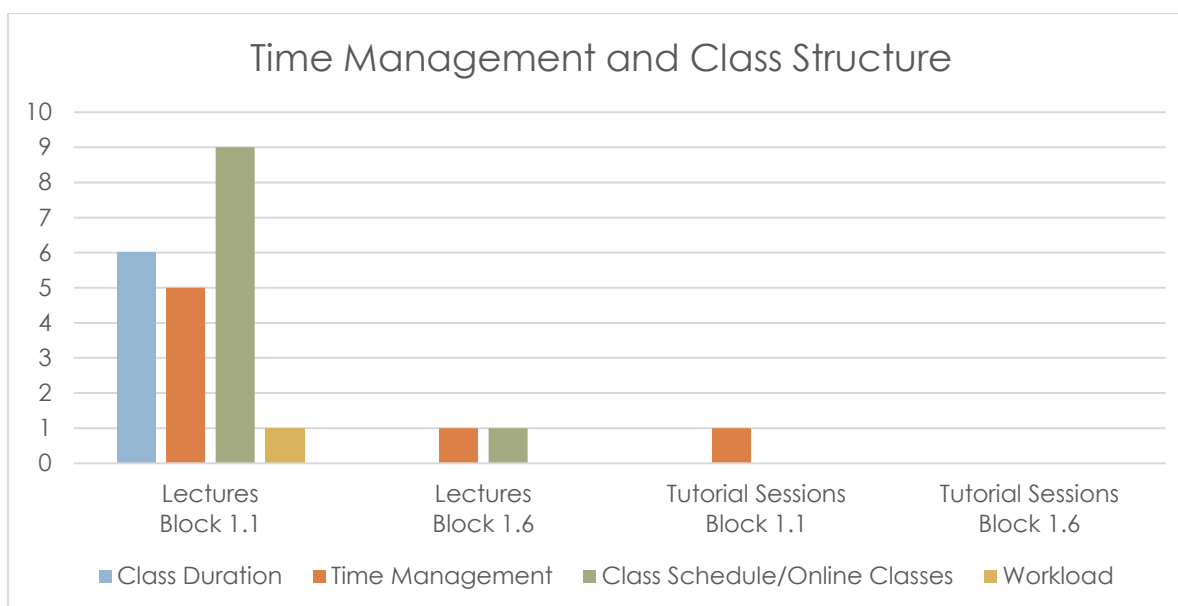


Figure 2. Improvement suggestions per items within the organization of time and structure of the class category

3.2 Materials and Didactic Resources

The category *Materials and Didactic Resources* includes improvement suggestions regarding the *Materials* and *Didactic resources* used in the classroom.

This category recorded a total of 48 units. Most suggestions were made at the beginning of the year (46), primarily focused on lectures (#43) compared to tutorial sessions (#3). By the end of the year, the number of suggestions decreased (#2 for lectures and #0 for tutorial sessions) (Fig. 3).

Suggestions for lectures' *Materials* included the use of microphones by instructors (e.g., "A microphone could be a good idea... it's difficult to listen from the back").

For didactic resources, students suggested more detailed PowerPoint slides available before lectures (e.g., “More information on the PowerPoints”; “PowerPoints should be available before lectures”) and clearer, more accessible materials for tutorials (e.g., “Sources clearer and more accessible”; “Sources should be clear, direct, concise, and summarized”).

Early-year suggestions, mainly for more explicit materials, reflected a traditional approach. The decline in these requests may indicate a gradual adaptation to the new method.

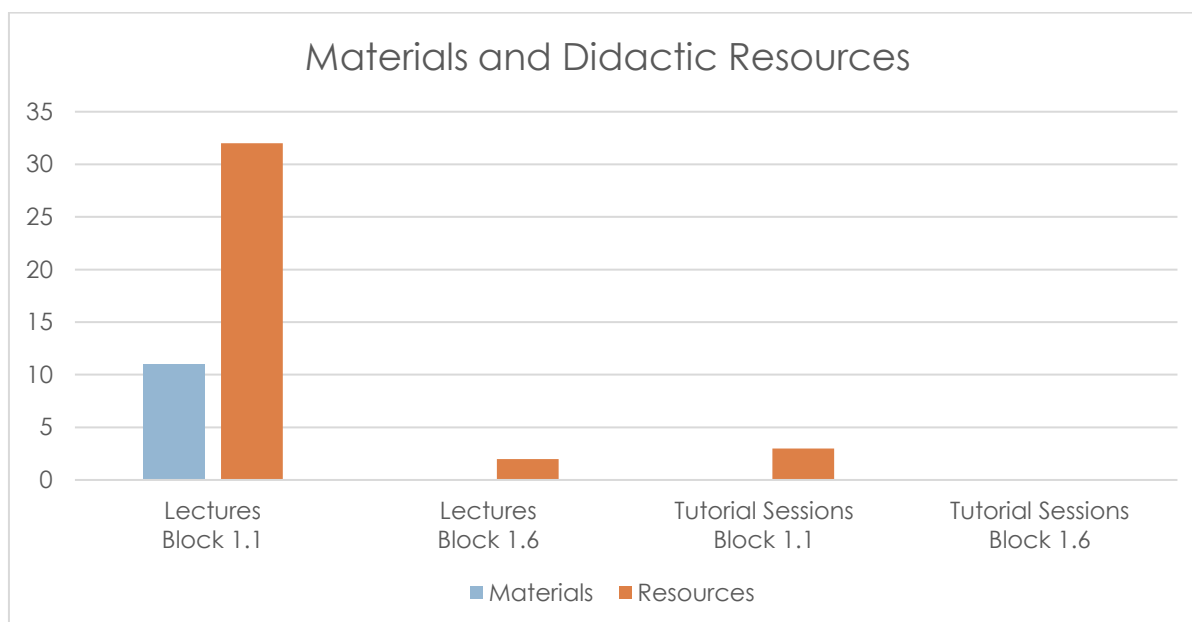


Figure 3. Improvement suggestions per items within the materials and teaching resources category

3.3 Interaction and Communication in the Classroom

The category *Interaction and Communication in the Classroom* includes suggestions on *Teacher’s communication*, *Tutor’s role*, *Classroom interactions*, and *Feedback*. Of 47 total suggestions, most were made earlier in the year (#38) and fewer in the end (#9). Lectures received more suggestions than tutorials (lectures: #27 early, #6 later; tutorials: #11 early, #3 later) (Fig. 4).

For lectures, suggestions about the *Teacher’s communication* were the most common (#19 at the start and #5 at the end), with students mentioning difficulty understanding some lecturers (e.g., “I think the lectures are fine, but sometimes it's hard to understand the professor”; “Some teachers could improve their oral presentation, but otherwise, they were great”).

For tutorial sessions, the most frequent suggestions were about the *Tutor’s role* (#7 at the start and #1 at the end). Students felt that more guidance from tutors was needed (e.g., “It would be helpful if tutors guided us better”) and that a lack of intervention led to confusion about learning objectives (e.g., “More intervention from tutors regarding learning goals in PBL sessions”). At the end of the year, a suggestion was made to increase tutor involvement (e.g., “Have more intervention from tutors”).

Regarding *Classroom interactions*, students suggested making lectures more interactive (e.g., “Try to make the lectures more interactive”), with more comments at the start of the year (#8) compared to the end (#1).

Two feedback suggestions were made, one early in the year and one later, both in the context of tutorials. Students emphasized the need for more feedback, particularly at the end of each session (e.g., “More feedback”; “Provide feedback at the end of each PBL”).

Suggestions on teacher communication and tutors’ roles reflect a teacher-centered, directive approach. Fewer suggestions by year-end may indicate student adaptation to the new pedagogical approach. Interest in interactive lectures suggests students’ desire for engagement, with the decline possibly reflecting teachers’ response to previous feedback.

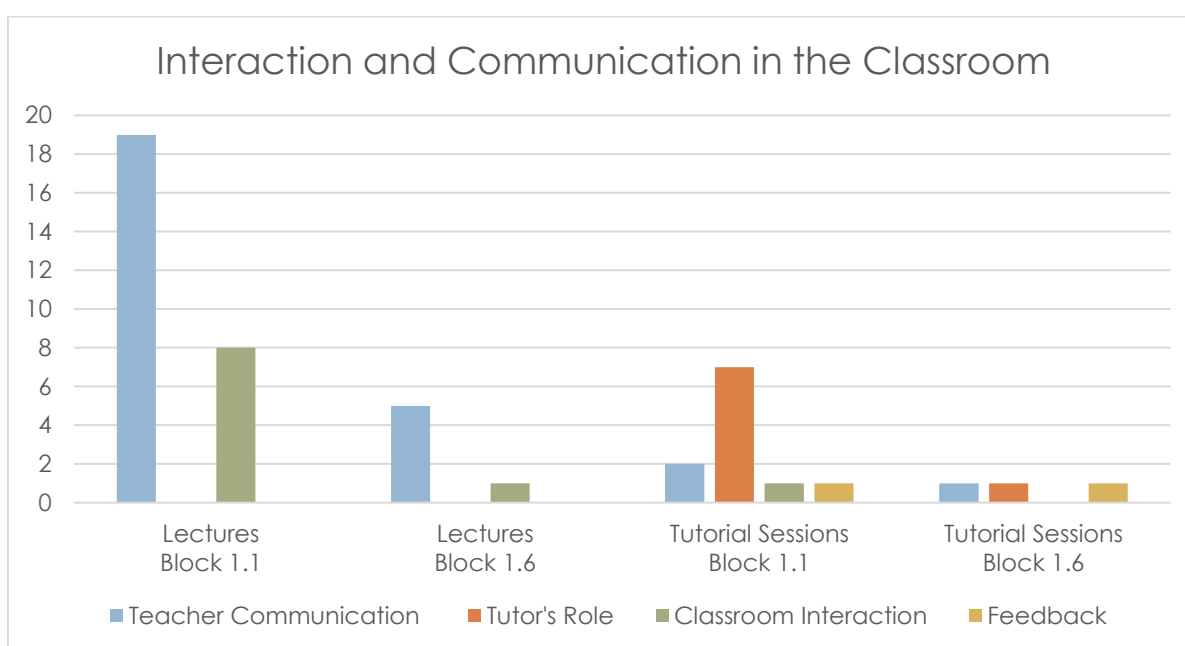


Figure 4. Improvement suggestions per items within the interaction and communication in the classroom category

3.4 Teaching Methods and Dynamics

The *Teaching Methods and Dynamics* category covers *Classroom dynamics*, and *Pedagogical techniques/Methodology/Pedagogy*. Of 17 suggestions, 14 were made early in the year and 3 later (Fig. 5).

Regarding *Classroom dynamics* in lectures, students initially suggested activities involving active participation (e.g., “Some activity/game at the end of the lecture to consolidate information”). The two comments at the end of the year reflected greater satisfaction with lecture organization (e.g., “I think the lectures were good and relatively easy to follow”).

Regarding the *Pedagogical techniques /Methodology/Pedagogy*, at the start of the year, students suggested clearer guidance on learning objectives for tutorials (e.g., “It should be more explicit how deep we should go on the learning goals”), reflecting a teacher-centered approach. By year-end, such suggestions ceased (0), indicating student adaptation to the new teaching method.

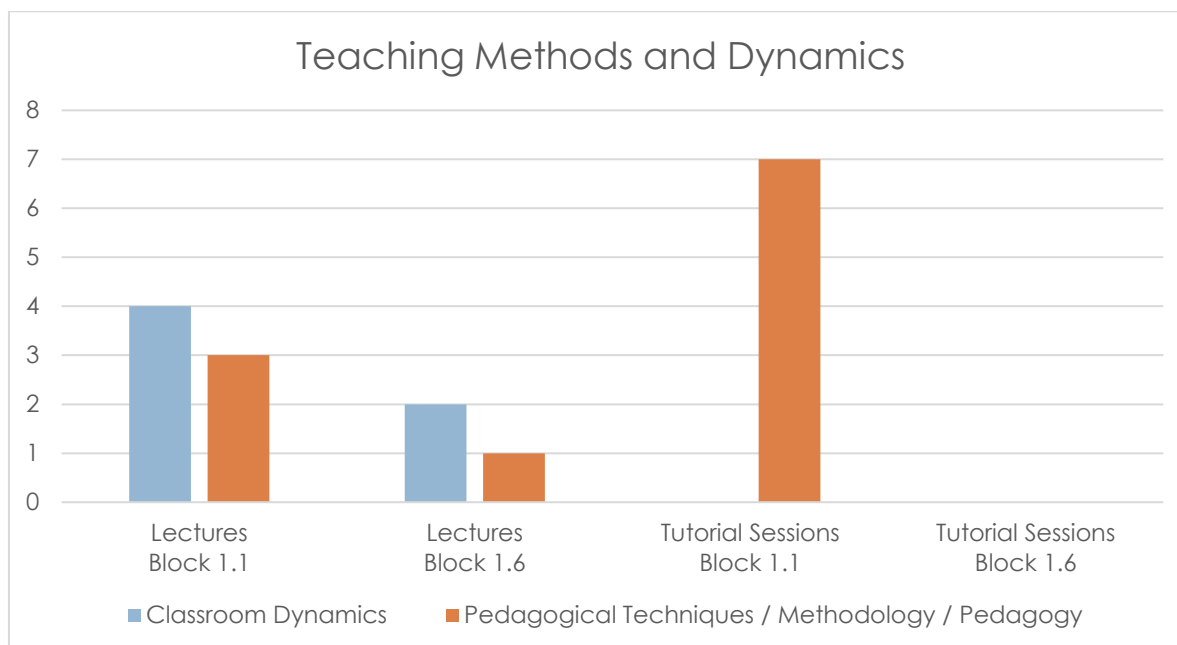


Figure 5. Improvement suggestions per items within the teaching methods and dynamics category

3.5 Content and Curriculum

The category *Content and Curriculum* includes suggestions about *Curricular alignment*, *Content depth*, *Content repetition*, and the *Formulation of PBL Cases*. This category had 28 suggestions, with more at the end of the year (#21) compared to the beginning (#7), particularly in tutorial sessions (Fig. 6).

Regarding *Curricular alignment*, students noted some lectures were unrelated to tutorial topics (e.g., “All lectures should be related to the PBL sessions and learning goals”). These suggestions reflect the perception that the (mis)alignment of the curriculum is not conducive to learning. Additionally, students requested more *Content depth* on certain topics (e.g., “Go more in-depth on certain topics”), mainly in lectures, later in the year. They also expressed a greater need for guidance on independent study, focusing on content depth rather than specific content transmission (e.g., “More specific information about what we really need to know, what is missing, and how much detail is needed”). They also suggested avoiding *Content repetition* across lectures (e.g., “Not have so many repetitive lectures”).

Although these suggestions rely on teacher guidance, they are not focused on content transmission. Instead, they emphasize the teacher's role in guiding students, which aligns with a more student-centered approach.

Regarding tutorial sessions, at the end of the year students focused on the clarity of PBL case formulations (#5) (e.g., “The cases were not clear, which made my study all over the place”). This emphasis on problem quality indicates stronger alignment with the PBL approach and an improved understanding of the role of cases in the learning process.

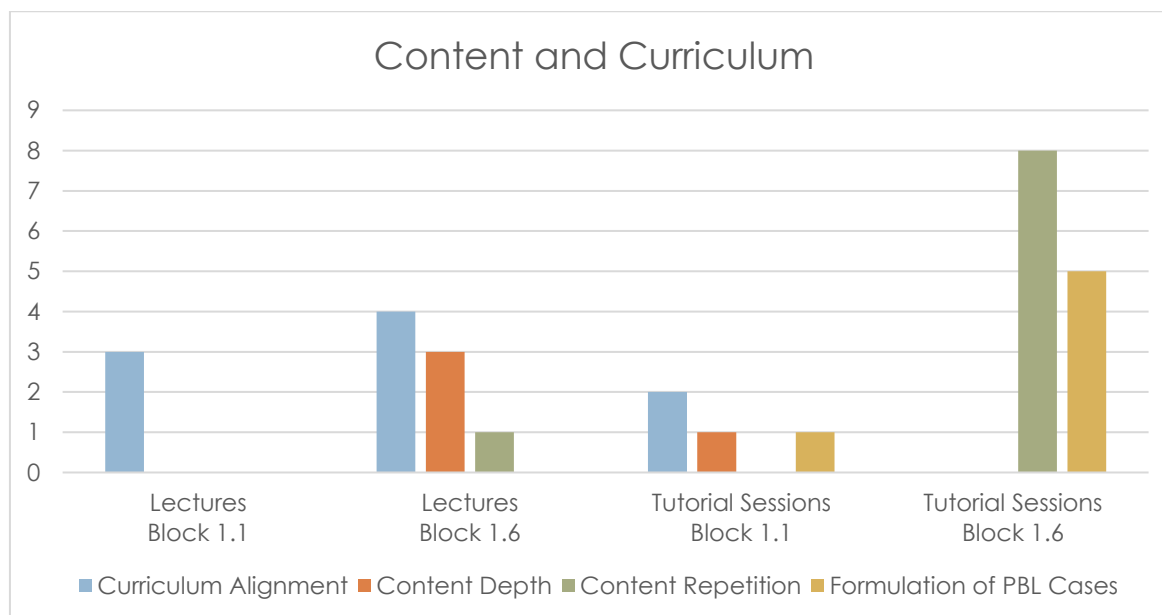


Figure 6. Improvement suggestions per items within the content and curriculum category

3.6 Evaluation and Consistency of Tutorial Groups

The category *Evaluation and Consistency of Tutorial Groups* includes suggestions for improving *Assessment processes* and addressing *Consistencies across tutorial groups* regarding covered topics and assessment fairness.

Suggestions were made only at the beginning of the year, for tutorial sessions (#5) (Fig. 7). Two suggestions focused on enhancing *Assessment processes* (e.g., “I would prefer if participation in PBL sessions wasn’t evaluated, as I feel more productive when I don’t participate as much. Participation distracts me from focusing on the learning goals and instead on when or how to participate”).

This comment reflects a preference for a more passive learning approach, similar to traditional teaching methods where active participation is not expected. It may also highlight a misunderstanding of PBL’s emphasis on collaboration, as the student does not see their contribution to the group’s knowledge as beneficial.

There were also suggestions regarding inconsistency across tutorial groups (e.g., “There were a lot of discrepancies between tutorial groups”), indicating concerns that differences in content approaches might affect learning or the fairness of assessments.

These concerns were only raised at the beginning of the year (#3), suggesting that students gradually adapted to PBL, recognizing that not all groups need to follow the same path.

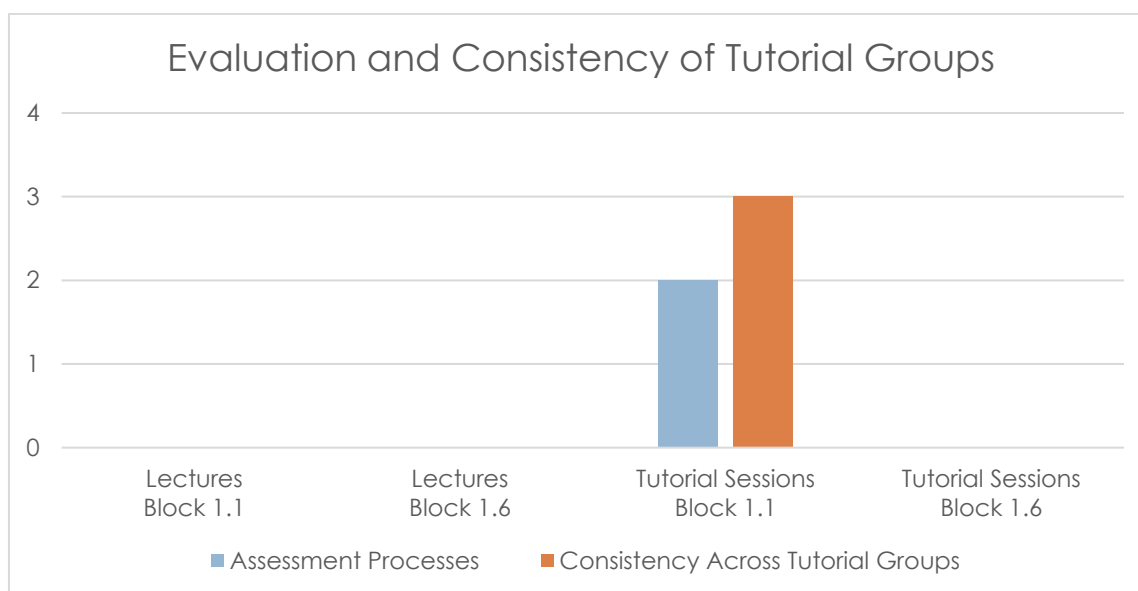


Figure 7. Improvement suggestions per items within the evaluation and consistency of tutorial groups category

3.7 Tutor Area of Expertise

The *Tutor Area of Expertise* category addresses suggestions related to tutors' expertise in the subject matter of the CU. These suggestions, made at the end of the academic year (#2) (Fig. 8), reflect students' concerns about whether tutors should be specialized in the content (e.g., “It would make more sense to have tutors whose specialty is closely related to the block content, so they can better guide and assist us in discussions”).

These comments suggest that students associate teaching staff with a traditional role, where tutors focus primarily on guiding content discussions rather than fostering group dynamics.

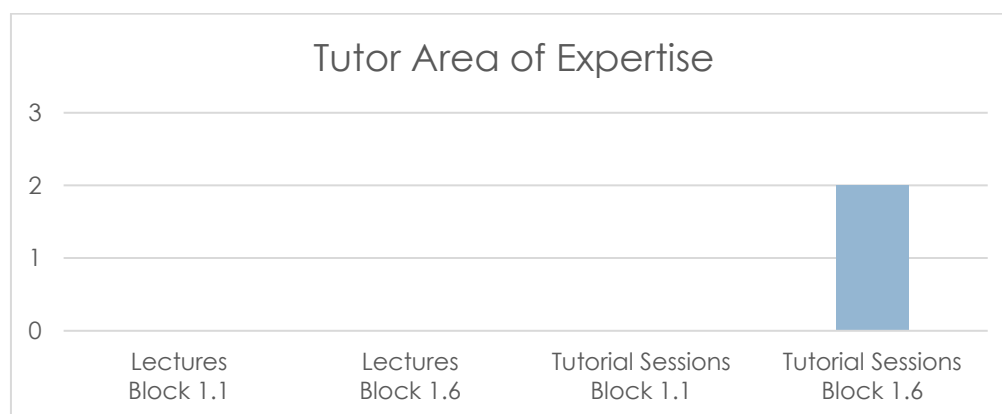


Figure 8. Improvement suggestions per items within the training and qualification of the tutor category

4. Discussion

The first goal of this study was to explore whether students' responses to regularly administered pedagogical assessment questionnaires can evaluate their perceptions of the new teaching model. The inductive content analysis, without a predefined theoretical framework, identified various themes that students raise as most relevant to their learning processes. The originated categories indicate that the analysis of the responses given to the questions in the pedagogical evaluation questionnaires provides information that can be used to understand students' perceptions of the new PBL educational approach, in which they are engaged.

The suggestions made were related to pedagogical aspects. A set of themes indicated logistical organization suggestions with pedagogical implications (e.g., workload, duration of classes, resources used). However, most of the suggestions referred to aspects related to classroom dynamics, interaction with the tutor, assessment, and instructional alignment. Overall, the topics referred by the students are in line with other studies regarding adjustment to PBL curriculum (Tefera et al., 2024).

The second goal of the study was to investigate whether students' perceptions evolve and become more aligned with the new educational approach as they advance in their academic journey.

Overall, lectures received the most improvement suggestions from students, particularly at the beginning of the year, with a significant decrease by the end. This initial focus suggests that these classes were viewed as central to learning, aligning more with traditional methods. Early suggestions centered on content delivery (e.g., slides needing more information and classes including breaks for better content assimilation), while the decrease in such comments suggests students' progressive adjustment to the PBL method. In this context, lectures aim to provide a comprehensive view of topics, helping students identify key areas for deeper learning rather than merely conveying content (Moust et al., 2017).

The suggestions made after the beginning of the year to improve attention and retention of information in lectures, despite reflecting a more traditional teaching perspective, indicate that students show preference for learning activities that keep them actively involved. This is in line with studies that mention the importance of interactivity for the effectiveness of lectures (Fyrenius et al., 2005).

The increasing number of suggestions at the end of the year regarding curriculum alignment, unnecessary repetition of content, and the quality of the problems studied in tutorial sessions also indicates a progression in students' understanding of the key learning processes underlying the PBL approach (Dolmans et al, 2005).

In tutorial sessions, discussions about the tutor's more directive and content-centered role were most prevalent at the beginning of the year, with a decrease at the end of the year. Some end-of-year suggestions still reflected traditional methods, such as calls for consistency among tutorial groups, a more direct intervention from tutors in defining learning objectives, and the request for a tutor with expertise in the topic.

These results, in line with previous research (Kibret, et al., 2021), suggest that, while adaptation to the new teaching method progressed, students still need to refine their understanding of what was expected of them and their teachers in the new PBL approach.

The variations in suggestion frequencies and themes indicate changes in students' perceptions throughout their first year. A comparative analysis revealed fewer suggestions at the end of the year, generally suggesting a better understanding of and adaptation to the teaching method. However, the decrease in suggestions from the beginning to the end of the year could be due to other factors. The two assessed blocks vary in length (Block 1.1 lasts 8 weeks, while Block 1.6 lasts only 4), content, and teaching staff (tutors and lecturers); therefore, observed differences may be due to one or more of these differences observed between blocks. Another possibility is that students were less engaged in answering the questionnaire in block 1.6, as it was the last one of the year. A final possibility is that students reduced their suggestions because they saw no changes based on the feedback provided throughout the year, particularly regarding the CUs between Blocks 1.1 and 1.6. This last possibility seems unlikely, as several changes were made in response to student feedback throughout the year and explicitly discussed with student representatives.

5. Final Considerations

The sample size of the present study and its specificity are its major limitations. Additionally, the differences between Blocks 1.1 and 1.6 limit the strength of the conclusions that can be drawn about the changes in suggestions for improvement. Future research addressing these issues, such as analyzing students' responses to open-ended questions in the pedagogical quality assessment of all CUs for that academic year or comparing responses to the same questionnaire across different editions of the same block, could provide valuable insights.

Overall, with the identified categories and subcategories, this study suggests the usefulness of qualitative analysis of students' responses to open-ended questions in pedagogical evaluation questionnaires to assess students' adaptation to the teaching method as well as its progression throughout the year and the whole program. By capturing the various underlying themes of students' perceptions and the changes that occurred between the beginning and end of the year, this study provides relevant information for implementing actions involving students aimed at improving their adaptation to the teaching method, particularly in educational contexts where the PBL method is new and challenging (Elo & Kyngäs, 2008; Thomas, 2006).

In addition to the empirical contributions regarding students' adaptation to the PBL model, this study also offers a methodological contribution to qualitative research. It demonstrates the applicability and usefulness of inductive content analysis of open-ended responses in recurring pedagogical questionnaires, showing how this approach can reveal important nuances in students' perceptions over time.

Furthermore, by explicitly detailing categorization procedures and employing rigorous criteria for theme development (Bardin, 2011), the study provides a systematic and replicable example of qualitative analysis in educational contexts. These aspects enhance the study's credibility and reflexivity in handling qualitative data, thus contributing to the advancement and refinement of qualitative methods in pedagogical assessment and educational research generally. Such methodological insights align with broader qualitative research literature in education, which emphasizes the value of interpretive and inductive approaches (Elo & Kyngäs, 2008; Thomas, 2006).

Ethical Approval: This study was carried out after approval by the Ethics Committee for Health of the Universidade Católica Portuguesa at its meeting on 3rd November 2023, which issued a positive opinion on project number 287.

Informed Consent: This study is based on the analysis of secondary data obtained from institutional quality assessment questionnaires, completed voluntarily and anonymously by students. All data were collected as part of the institution's regular practices and do not allow for the identification of participants.

Declaration of Conflicts of Interest: The authors declare that there are no conflicts of interest regarding the research, authorship, and/or publication of this article. The material has not been published, in whole or in part, elsewhere and is not currently under consideration for publication in any other journal. All authors were personally and actively involved in the work that led to this article and take responsibility for its content.

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