

BENEFITS AND BARRIERS OF PROBLEM-BASED LEARNING FROM THE PERSPECTIVE OF MEDICAL STUDENTS (CLASS OF 2022, FK UMI)

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ABSTRAK

Problem-Based Learning (PBL) merupakan pendekatan pembelajaran berpusat pada mahasiswa yang diterapkan di Fakultas Kedokteran Universitas Muslim Indonesia. Penelitian ini bertujuan untuk menganalisis manfaat dan hambatan PBL dari perspektif mahasiswa angkatan 2022. Penelitian menggunakan desain deskriptif kualitatif. Data dikumpulkan pada Januari–Februari 2026 melalui wawancara mendalam terhadap 15 informan yang dipilih secara purposive dari mahasiswa aktif yang telah mengikuti minimal tiga blok PBL preklinik. Data dianalisis melalui transkripsi verbatim, reduksi data, kategorisasi, dan penentuan tema. Hasil penelitian menunjukkan bahwa PBL meningkatkan tanggung jawab belajar, komunikasi, keaktifan, berpikir kritis, pemahaman materi, kerja sama kelompok, regulasi diri, dan motivasi belajar. Hambatan yang ditemukan meliputi keterbatasan waktu, beban tugas lain, dinamika kelompok yang tidak merata, kepercayaan diri yang belum stabil, sarana yang belum optimal, serta variasi peran tutor. Secara keseluruhan, PBL dipandang bermanfaat, tetapi efektivitasnya perlu diperkuat melalui pengelolaan waktu, kejelasan modul, kesiapan sarana, serta penguatan peran tutor.

ABSTRACT

Benefits and Barriers of Problem-Based Learning From The Perspective of Medical Students (Class of 2022, FK UMI). Problem-Based Learning (PBL) is a student-centered instructional approach implemented at the Faculty of Medicine, Universitas Muslim Indonesia. This study aimed to analyze the benefits and barriers of PBL from the perspective of the 2022 cohort. A qualitative descriptive design was used. Data was collected from January to February 2026 through in-depth interviews with 15 purposively selected students who had completed at least three preclinical PBL blocks. Data was analyzed through verbatim transcription, reduction, categorization, and theme development. The findings showed that PBL improved learning responsibility, communication, activeness, critical thinking, comprehension, teamwork, self-regulation, and motivation. The barriers included limited time, concurrent academic workload, unequal group dynamics, unstable confidence, suboptimal facilities, and variation in tutor roles. Overall, PBL was perceived as beneficial, but its effectiveness should be strengthened through better time management, clearer modules, adequate facilities, and stronger tutor roles.

INTRODUCTION

Medical education continues to evolve to produce graduates who are competent, capable of critical thinking, and skilled in independently resolving clinical problems.¹ One widely adopted approach is Problem-Based Learning (PBL), first introduced at McMaster University in 1969 and now broadly used in medical education, including in Indonesia. In this approach, clinical problems serve as triggers for learning, enabling students to develop reasoning, collaboration, and problem-solving skills.² As a student-centered method, PBL positions learners as active constructors of knowledge. Students analyze cases, identify problems, independently seek learning resources, and discuss findings in small tutor-guided groups. This model has been shown to improve conceptual understanding, interpersonal skills, and sustained self-directed learning.³ Nevertheless, PBL implementation presents challenges, including student readiness, tutor quality, resource constraints, unequal participation, and greater time demands than conventional teaching.⁴

Various studies in medical education have shown that PBL contributes to stronger critical thinking, teamwork, communication, and motivation. Barriers, including early student adaptation, tutor facilitation quality, and unequal group dynamics, are also consistently reported. Evaluation grounded in students' direct experiences, therefore, remains important for assessing PBL within specific institutional contexts.⁵

The Faculty of Medicine of Universitas Muslim Indonesia (FK UMI) has implemented PBL as a preclinical learning approach. The 2022 cohort has experienced PBL since the start of their studies and can meaningfully evaluate its benefits and barriers. Although various studies have demonstrated PBL's contributions, qualitative inquiry into the lived experiences of Indonesian medical students remains scarce, with a clear gap in locally contextualized knowledge. No published study has specifically explored PBL experiences at FK UMI from a student-centered qualitative perspective. This study, therefore, aimed to analyze the benefits and barriers of PBL among students in the 2022 cohort at FK UMI, with the findings expected to support the evaluation and optimization of PBL implementation through institutional and instructional improvements.

METHODS

This study employed a qualitative descriptive design to explore in depth the benefits and barriers of *Problem-Based Learning* (PBL) from the perspective of the 2022 cohort students at the Faculty of Medicine, Universitas Muslim Indonesia. The study was conducted at the Faculty of Medicine, Universitas Muslim Indonesia, from January to February 2026.

The study population comprised all 385 active students from the 2022 cohort of FK UMI. Purposive sampling was used to select students who met the inclusion criteria and could provide in-depth information about their PBL experiences. Fifteen informants were recruited. This number was justified by the principle of data saturation: no new sub-themes emerged from the eighth interview onward; data collection continued to 15 informants to strengthen thematic consistency and ensure variation in characteristics, consistent with qualitative research norms (Guest et al., 2006). Inclusion criteria: active 2022 cohort students who had completed at least three preclinical PBL blocks, with diverse backgrounds, willing to participate, and able to communicate effectively. Exclusion criteria: students on leave, refusing to participate, having conditions hindering the interview, or unable to provide honest and consistent information. Primary data was collected through in-depth interviews, recorded with participants' informed consent. Documentation served as supporting evidence to verify the informant's eligibility. An interview guide was the principal data collection instrument.

Data were analyzed qualitatively using Braun and Clarke's (2006) thematic analysis framework, comprising data familiarization, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the report. Credibility was enhanced through member checking key findings were returned to selected participants for verification and peer debriefing. Emerging themes were organized to describe PBL benefits and barriers based on dominant patterns across informants.

This study received ethical approval (No. 864/A.1/KEP-UMI/XI/2025). All informants were fully informed about the study and participated voluntarily after providing informed consent.

RESULTS

This study involved 15 informants from the 2022 cohort of FK UMI who met the inclusion criteria. Informants were aged 20–22 years; the majority were female, organisationally active, and from diverse school backgrounds. Thematic analysis yielded two major clusters of themes: PBL benefits and PBL barriers. Each theme is presented in narrative form, supported by verbatim quotations from participants.

Tabel I. Characteristics of Research Informants

Characteristic	Result
Number of informants	15 college students
Usia	20-22 tahun
Sex	12 female; 3 male
Latest GPA	3,2-3,92
Organisational activity	14 active; 1 inactive
School origin	10 public schools; 5 private schools
School location	9 in Makassar; 6 outside Makassar

The PBL benefits theme comprised eight sub-themes. Students perceived PBL as promoting responsibility for learning, communication, activity, critical thinking, understanding of the material, group cooperation, self-regulation, and motivation to learn.

Tabel II. Benefits of Problem-Based Learning

Sub-theme	Summary of Findings
Learning Responsibility	Students were more independent, seeking references and preparing before tutorial sessions.
Communication	Group discussions trained students to speak up, ask questions, and express views coherently.
Activeness	Students felt more actively engaged in thinking and participating in learning.
Critical Thinking	PBL helped students analyse cases, connect theory to clinical conditions, and reason systematically.
Material Comprehension	Clinical cases made material more meaningful, easier to understand, and easier to remember.
Group Cooperation	Students learned to share tasks, support each other, and respect group members' views.
Self-Regulation	PBL trained self-confidence, patience, time management, and perseverance in learning.
Learning Motivation	Students found learning more meaningful as the content was relevant to future medical practice.

Conversely, the analysis identified six barrier sub-themes: limited time, concurrent academic tasks, unequal group dynamics, unstable student self-confidence, suboptimal facilities, and variation in tutor roles during facilitation.

Tabel III. Barriers to Problem-Based Learning

Subtema	Summary of Findings
Time	Closely scheduled tutorials, limited discussion time, and a dense lecture schedule reduce students' preparedness for learning.
Other Tasks	Reports, worksheets, practicals, and other assignments divided the student's focus.
Group Dynamics	Unequal member readiness and dominance by some students led to uneven participation.
Self-Confidence	Fear of making mistakes and initial hesitation made some students passive during discussions.
Facilities and Infrastructure	Rooms were insufficiently conducive, learning tools were unready, and modules were sometimes delayed or unclear.
Tutor Variation	Overly passive tutors left discussions unfocused; overly dominant tutors reduced students' freedom of thought.

DISCUSSION

This study shows that *students perceived Problem-Based Learning (PBL) as offering broad benefits across cognitive, affective, and social dimensions, as evidenced by eight benefit sub-themes and six barrier sub-themes*. These findings affirm PBL's strong pedagogical potential in medical education and confirm that effectiveness depends on the quality of implementation at the student, group, tutor, and institutional levels.⁶

The eight benefit sub-themes — learning responsibility, communication, activeness, critical thinking, material comprehension, group cooperation, self-regulation, and motivation — emerged consistently. On learning responsibility, students reported PBL encouraged independent preparation. One informant stated: *"PBL makes me more independent because I have to seek references and prepare before every discussion"* (Respondent 6). Another informant added: *"Knowing there is a discussion, I automatically read the material before entering the PBL session"* (Respondent 8). These findings indicate that PBL promotes both individual learning responsibility and accountability to the group.

On communication, group discussions in PBL trained students to ask questions, express views, and communicate coherently. One informant stated: *"Because in PBL we frequently share views and explain learning to peers, communication skills are automatically trained"* (Respondent 3). Another noted: *"It helps greatly, especially in expressing views clearly. I learned to choose words carefully to avoid offending others"* (Respondent 12). PBL also built confidence to speak in discussion forums.

On activeness and critical thinking, PBL increased engagement and analytical capacity. One informant stated: *"I came to realise that PBL actually makes me think more actively"* (Respondent 15). Another affirmed: *"In PBL we are not given direct answers, so we must analyse symptoms ourselves, identify diagnoses, and understand the causes"* (Respondent 8). Students also noted PBL helped connect basic science to clinical conditions and examine problems from multiple perspectives.⁷

On material comprehension, case-based learning made content more meaningful and easier to retain. One informant stated: *"During PBL I felt greatly helped in understanding concepts more deeply and in a structured way"* (Respondent 3). Another added: *"...better understanding of the material because it is directly linked to cases"* (Respondent 6). This indicates PBL helps students build more meaningful conceptual understanding.

Regarding group cooperation, self-regulation, and motivation, PBL fostered teamwork, patience, self-confidence, time management, and a drive to learn. One informant stated: *"PBL trains me to cooperate, share tasks, and respect others' views"* (Respondent 6). On self-regulation, another informant said: *"Over time I became more confident learning without always needing guidance"* (Respondent 11). On motivation, one informant affirmed: *"My motivation increased especially because I began to see the connection between coursework and future medical practice"* (Respondent 11). Overall, these findings indicate PBL benefits extend beyond the cognitive domain to affective and social development.

The first prominent benefit was increased responsibility for learning. Students prepared independently for tutorials, sought references, and entered discussions with prior understanding of the topic, shifting from passive recipients to active knowledge constructors.⁷ Responsibility in PBL thus reflects not only academic compliance but a growing metacognitive awareness of one's role in learning.⁸

PBL also strengthened communication. Case discussions gave students space to share views, ask questions, respond to arguments, and explain findings verbally — training not only speaking confidence but structured articulation of ideas. In medical education, communication is an essential professional competency. Globally, Hmelo-Silver and Barrows demonstrated that PBL tutorial discussions are fundamental vehicles for developing academic and professional communication. This is also consistent with Aulia Andriani et al. who reported that PBL tutorial processes improve academic interaction and the quality of communication among Indonesian medical students.^{9,10}

PBL also fostered student activity not only in speaking frequency but also in mental engagement during case reading, problem identification, and information-seeking, consistent with Argo et al., who found that PBL significantly increases learning activity compared to conventional instruction.^{11,12}

Critical thinking was another prominent benefit. Students analysed cases more systematically and considered multiple perspectives. PBL's mechanism of withholding direct answers supports analytical reasoning, consistent with Wahyuningsih et al. (2023), who found PBL significantly improves problem-solving skills.¹³ In medical education, critical thinking underpins future clinical reasoning and decision-making.¹⁴

PBL contributed to deeper material comprehension. Students connected theoretical concepts to clinical cases, supporting meaningful learning where material is understood as part of a clinical problem to be solved.¹⁵ This pattern improves both comprehension and retention compared to passive instruction.¹⁶

Group cooperation was another key benefit. PBL developed not only individual capacity but collaborative competence.¹⁷ In medical education, teamwork is strategically important as healthcare is fundamentally collaborative.¹⁸

PBL also contributed to self-regulation, as evidenced by students' capacity to manage study time and maintain perseverance with complex material. This study has several limitations. First, the sample was drawn from a single institution (FK UMI), limiting generalisability. Second, the small sample of 15 informants, though justified by data saturation, may not capture the full diversity of student perspectives. Third, as self-report data, findings are subject to social desirability bias. Fourth, the absence of quantitative triangulation limits causal inference. These limitations

underscore the need for future multi-center studies.^{19,20} Self-regulation is critical in medical education, given high academic demands and the necessity of lifelong learning. PBL is thus not merely a pedagogical strategy but a vehicle for developing students' learning character.

CONCLUSION

Problem-Based Learning, from the perspective of 2022 cohort students at FK UMI, provided benefits across cognitive, affective, and social dimensions, reflected in enhanced learning responsibility, communication, activeness, critical thinking, material comprehension, group cooperation, self-regulation, and learning motivation. Barriers included limited time, concurrent academic tasks, unequal group dynamics, unstable self-confidence, suboptimal facilities, and variation in tutor roles. PBL is a pedagogically valuable method, yet its effectiveness requires optimisation through institutional support, improved governance, clearer modules, adequate facilities, and enhanced tutor capacity as facilitators. From a practical standpoint, medical faculties should invest in structured tutor training programs, regular module review, and improved physical learning environments to maximize PBL outcomes. Further multi-center qualitative or mixed-method studies are recommended to produce more comprehensive and generalizable evidence on PBL implementation in Indonesian medical education.

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