
Bridging the Gap Between Theory and Practice: A Problem-Based Learning Approach to Management Accounting in Indonesia

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Abstract

Purpose – This study investigates the implementation of Problem-Based Learning (PBL) to enhance student engagement and learning outcomes in a Management Accounting course at a private university in Indonesia. **Methodology/approach** – Through a Classroom Action Research (CAR) approach, this study involved six undergraduate classes (N = 233 students), integrating PBL activities based on real-world business cases. Data collection included pre-tests, post-tests, structured classroom observations, and semi-structured student interviews. **Findings** – Results demonstrated significant improvements in students' comprehension of accounting concepts, analytical problem-solving abilities, and active classroom participation. Thematic analysis further indicated that PBL fostered greater student motivation, confidence, and collaborative learning skills. **Novelty/value** – This study applies Problem-Based Learning in an advanced Management Accounting course—rarely explored in Indonesia. It combines quantitative and qualitative methods to demonstrate improved student engagement, critical thinking, and learning outcomes, offering a structured model adaptable for local accounting education.

Keywords: Problem-Based Learning, Management Accounting, Classroom Action Research, Active Learning, Higher Education, Indonesia

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INTRODUCTION

In the context of today's increasingly complex business environment, accounting professionals are required not only to master technical competencies, but also to develop advanced analytical, problem-solving, and decision-making skills (Bosica et al., 2021a; K. Smith et al., 2022). management accounting, as a core subject within undergraduate accounting programs, plays a critical role in preparing students to analyse cost structures, interpret financial and non-financial data, and support strategic business decisions. (Liu & Pásztor, 2022). Despite these demands, traditional lecture-based instruction remains dominant in Indonesian accounting education. Studies have shown that in many Indonesian universities, accounting courses are still delivered primarily through didactic lectures that emphasize memorization and theoretical understanding rather than active learning or practical application (Dalila et al., 2022; Seibert, 2021a). As a result, students often lack the ability to transfer classroom knowledge to real-world business problems, struggle with applying accounting techniques to dynamic scenarios, and exhibit low levels of classroom engagement (Hidayati et al., 2023).

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These challenges have been observed first-hand at the authors' institution, a leading private university in Indonesia, where course evaluations and student feedback consistently revealed gaps in critical thinking, analytical reasoning, and active participation in management accounting classes. Specifically, many students demonstrated difficulties in applying Activity-Based Costing (ABC), budgeting, performance evaluation, and strategic cost management concepts to practical case studies and decision-making exercises. In response to these limitations, there has been growing interest in adopting active learning pedagogies such as Problem-Based Learning (PBL) to foster deeper learning and enhance professional competencies. PBL is a student-centered instructional approach that engages learners in solving complex, real-life problems through collaborative inquiry, thereby promoting critical thinking, analytical skills, and intrinsic motivation (Mann et al., 2021; Pangaribuan, 2022). In international contexts, numerous studies have demonstrated the effectiveness of PBL in fields such as medicine, engineering, and management education (Pimdee et al., 2024a; Tadesse et al., 2022a). In accounting education, evidence is emerging that PBL can improve learning outcomes and better prepare students for the demands of the accounting profession (Amerstorfer & Freiin von Münster-Kistner, 2021; K. Smith et al., 2022).

However, a clear gap exists in the literature regarding the application of PBL within Management accounting courses in Indonesia. While a small number of studies have explored PBL in introductory accounting or auditing courses, very limited research has examined its use in technically demanding subjects such as Management accounting, particularly in Southeast Asian contexts where traditional pedagogical norms remain strong (Akçay & Benek, 2024; Alt & Raichel, 2022a). Furthermore, few studies have documented the practical challenges and opportunities associated with implementing PBL in Indonesian universities, or provided empirical data on its impact on student learning outcomes in accounting. To address this gap, this study investigates the implementation of PBL in an undergraduate Management accounting course at a private university in Indonesia, using a Classroom Action Research (CAR) framework. The study aims to answer the following research questions:

1. To what extent does PBL enhance students' comprehension of key Management accounting concepts?
2. How does PBL influence students' analytical problem-solving abilities and classroom engagement?
3. What challenges are encountered in implementing PBL in the Indonesian accounting education context?

By providing empirical evidence from an under-researched educational setting, this study contributes to the growing body of literature on active learning in accounting education and offers practical insights for educators seeking to modernize pedagogical approaches in response to evolving industry expectations.

LITERATURE REVIEW

The accounting profession has undergone significant transformation in recent decades, driven by rapid technological advancements, globalization of business operations, and increasing demands for accountability and transparency (G. Smith et al., 2023; Uliyandari et al., 2021). Consequently, employers now expect accounting graduates not only to possess technical proficiency in financial reporting and cost analysis, but also to demonstrate higher-order cognitive skills such as critical thinking, analytical reasoning, problem-solving, adaptability, and effective communication (Liu & Pásztor, 2022).

Management accounting, in particular, is a vital component of undergraduate accounting curricula as it provides students with essential competencies for supporting internal decision-making processes within organizations. The subject equips learners with knowledge of cost behavior, budgeting, variance analysis, responsibility accounting, activity-based costing, and performance evaluation—skills that are highly relevant for managerial roles in both accounting and broader business contexts (Alt & Raichel, 2022b; Tadesse et al., 2022b). Moreover, Management accounting fosters a deeper understanding of how financial and non-financial data are used to inform strategic decisions in dynamic and uncertain environments (Amerstorfer & Freiin von Münster-Kistner, 2021).

However, studies have shown that traditional lecture-based methods are often insufficient for developing these competencies. In many educational settings—including Indonesia—Management accounting is still taught primarily through lectures, textbook readings, and rote exercises focused on computational accuracy rather than critical analysis or application. As a result, students frequently struggle to transfer theoretical

knowledge to complex, real-world scenarios and lack the confidence to engage in managerial problem-solving tasks.

In response to these limitations, active learning pedagogies such as Problem-Based Learning (PBL) have been advocated to enhance student engagement and promote the development of higher-order skills (Seibert, 2021b; G. Smith et al., 2023). PBL is grounded in constructivist learning theory, which posits that learners actively construct new knowledge by integrating prior experiences with new information encountered through problem-solving. In PBL environments, students work collaboratively to analyze ill-structured, authentic problems that mirror professional challenges, thereby cultivating analytical reasoning, self-directed learning, and collaborative competencies (Seibert, 2021b).

Empirical evidence from Western contexts indicates that PBL is effective in enhancing student outcomes in accounting education. Seibert (2021) demonstrated that PBL fostered deeper conceptual understanding and stronger problem-solving skills in Management accounting courses. G. Smith et al. (2023), Uliyandari et al. (2021) reported that students exposed to PBL exhibited greater engagement, improved critical thinking, and higher motivation compared to peers in traditional classes. Pimdee et al. (2024) found similar benefits in Financial and Cost Accounting contexts.

Despite these promising results, significant gaps remain in the literature. Much of the existing research has been conducted in Western higher education systems where students may be more accustomed to learner-centered approaches (Bosica et al., 2021b; K. Smith et al., 2022). In contrast, Southeast Asian contexts—including Indonesia—tend to exhibit more hierarchical classroom cultures, where students are accustomed to teacher-centered instruction and may initially resist or struggle with the greater autonomy required in PBL environments (Amerstorfer & Freiin von Münster-Kistner, 2021). Furthermore, relatively few studies have focused specifically on the application of PBL within Management accounting, a subject that poses unique pedagogical challenges due to its technical complexity and analytical demands. (Seibert, 2021b; K. Smith et al., 2022).

In Indonesia, although a small number of studies have explored active learning in introductory accounting courses (Dalila et al., 2022; Hidayati et al., 2023) little empirical research has examined how PBL affects student outcomes in Management accounting or documented the practical challenges of implementing PBL in this subject area. Given the increasing importance of analytical and problem-solving skills for accounting graduates, there is an urgent need to explore effective pedagogical innovations that align with these evolving professional expectations.

This study contributes to filling this gap by providing empirical evidence on the implementation of PBL in an undergraduate Management accounting course in Indonesia. By examining its effects on student comprehension, analytical abilities, and engagement, the study offers insights that can inform both theory and practice in accounting education and guide future curriculum development.

METHOD

This study applied a Classroom Action Research (CAR) design to evaluate the impact of Problem-Based Learning (PBL) on student learning outcomes in an undergraduate Management accounting course. The CAR approach was selected because it allows for systematic cycles of planning, implementation, observation, and reflection in real classroom settings, with the aim of improving both teaching practice and student learning.

1. Research Setting and Participants

The research was conducted at a private university in Indonesia that offers an accredited undergraduate accounting program. The participants consisted of 233 second-year students enrolled in six parallel classes of the Management accounting course during the 2024 academic semester. Prior to the intervention, the course had been delivered primarily through lectures and textbook-based exercises, with limited use of interactive learning strategies. Diagnostic evaluations revealed that many students struggled to apply accounting concepts to real business problems and demonstrated low levels of classroom participation and critical thinking.

2. PBL Intervention Design

The PBL intervention was developed to directly support the Course Learning Outcomes (CLOs) of the Management accounting course. It was organized into four learning cycles, each linked to specific topics and learning outcomes:

Table 1. CLO Description

Cycle	Topics Covered	Associated CLO
Cycle 1	Activity-Based Costing (ABC), Just-in-Time (JIT), inventory analysis	CLO-09
Cycle 2	Budgeting systems, responsibility accounting	CLO-10
Cycle 3	Balanced Scorecard, performance evaluation	CLO-10

Course Learning Outcomes:

CLO-09: Analyze relevant information and apply Managerial Accounting techniques for informed decision-making.

CLO-10: Evaluate budgeting systems, performance management methods, and financial planning techniques to support organizational objectives.

Each PBL cycle spanned approximately three weeks and incorporated the following instructional components: a) Problem Scenario Introduction; At the start of each cycle, students were presented with an authentic business case or problem scenario closely related to real-world organizational challenges in the given topic area. The cases were intentionally designed to be ill-structured, requiring students to exercise judgment and analytical reasoning; b) Group-Based Inquiry and Research; Students were assigned to collaborative groups of 4–6 members and tasked with investigating the problem. This involved identifying relevant information, applying appropriate accounting techniques, and integrating concepts from both lectures and independent research; c) Facilitated Discussion and Reflection; throughout the inquiry process, the instructor adopted the role of facilitator, posing guiding questions, prompting reflection, and encouraging critical analysis. Rather than providing direct solutions, the facilitator helped students deepen their understanding and refine their reasoning; d) Presentation of Solutions; Each cycle culminated in student-led presentations, where groups communicated their analysis, justified their recommendations, and responded to questions from peers and the instructor. This stage promoted not only subject mastery but also the development of communication and collaborative skills; e) Feedback and Iterative Improvement; Constructive feedback was provided after each presentation, enabling students to reflect on their learning process and progressively improve their performance in subsequent cycles.

By structuring the PBL intervention in this manner, the instructional design sought to systematically foster critical thinking, analytical problem-solving, and real-world application of Managerial Accounting concepts, fully aligned with the CLOs of the course.

3. Data Collection

To assess the effectiveness of the PBL intervention, both quantitative and qualitative data were collected throughout the semester:

Table 2. Summary of Data Collection Methods and Focus Areas

No	Type of Data	Description	Time of Implementation	Main Focus
1	Pre-test and Post-test	Standardized tests aligned with CLO-09 and CLO-10 to measure learning gains, including both conceptual and application-based questions	Beginning and end of the semester	Learning gains
2	Classroom Observations	Structured observations conducted in three phases:	Weeks 3–4, 5–10, and 13–14	Student engagement, participation, teamwork, and

		<p>a) Before intervention (Weeks 3–4)</p> <p>b) During PBL implementation (Weeks 5–10)</p> <p>c) After intervention (Weeks 13–14)</p>	evidence of critical thinking
3	Student Interviews	Semi-structured interviews with a sample of 30 students to explore their perceptions of PBL, challenges encountered, and changes in learning behavior.	After PBL implementation Student perceptions, challenges, and behavioral changes in learning
4	Analysis of Student Outputs	Analysis of case reports, group presentations, and reflective notes to further triangulate the data	Throughout the semester (based on student tasks) Student outputs as evidence of understanding and application of learning through PBL

4. Data Analysis

Quantitative data from pre- and post-tests were analyzed using descriptive statistics to measure learning improvements.

Qualitative data from observations, interviews, and student outputs were analyzed thematically to identify patterns of engagement, skill development, and perceptions of learning.

5. Ethical Considerations

The study adhered to ethical guidelines. Participation was voluntary, with informed consent obtained from all students. Data confidentiality and anonymity were maintained, and the study received approval from the university’s research ethics committee.

RESULT AND DISCUSSION

1. Result

This section presents the findings from the pre- and post-test scores, classroom observations, and student interviews, providing a comprehensive view of the impact of PBL on student learning outcomes in Management accounting.

a. Pre-test and Post-test Results

To evaluate the effectiveness of the PBL intervention, standardized assessments were administered before and after the intervention. These assessments were explicitly mapped to two targeted Course Learning Outcomes (CLOs):

CLO-09: Application of managerial accounting techniques in decision-making contexts, particularly in topics such as Activity-Based Costing (ABC), Just-in-Time (JIT), and inventory analysis.

CLO-10: Evaluation of budgeting systems, performance management tools, and financial planning frameworks, including Balanced Scorecard, responsibility accounting, transfer pricing, and capital budgeting.

The test design combined conceptual understanding and application-based problem-solving tasks. Each CLO was assessed using five structured items, with equal weight given to comprehension and analytical reasoning. Table 3 presents the mean scores for pre- and post-tests across six classes, encompassing 233 students.

Table 3. Mean Pre-test and Post-test Scores by Class

Class	CLO-09 Pre-Test	CLO-09 Post-Test	CLO-10 Pre-Test	CLO-10 Post-Test
AK-47-01	62.31	82.47	65.72	81.87
AK-47-02	65.21	88.27	63.08	91.30
AK-47-06	65.46	86.77	62.73	85.17
AK-47-07	65.03	88.36	66.63	86.30
AK-47-08	66.69	81.97	67.59	80.61
AK-47-INT	64.83	81.89	66.32	83.22

The data reveal consistent and significant learning gains across all classes. Improvements in CLO-09 ranged from +20.16 to +24.51 percentage points, while CLO-10 improvements ranged from +14.72 to +28.22 percentage points.

While all classes showed improvement, AK-47-02 and AK-47-07 exhibited the highest post-test gains, particularly in CLO-10, suggesting stronger collaborative learning dynamics or higher engagement levels during the PBL cycles. Conversely, class AK-47-08 showed the smallest gain in CLO-10, which may reflect variability in facilitation or group effectiveness, and warrants further exploration.

These findings support the hypothesis that the PBL approach facilitated meaningful improvements in both conceptual understanding and practical application of managerial accounting concepts. Notably, students demonstrated stronger analytical performance in CLO-10 after engaging in the budgeting and strategic decision-making cases during cycles 2 to 4, indicating PBL’s effectiveness in enhancing critical thinking in more abstract or strategic topics.

Overall, the data suggest that embedding structured, problem-based cycles into the course delivery had a significant pedagogical impact, bridging the gap between theory and practice in the Managerial Accounting curriculum.

b. Classroom Observation Findings

Structured classroom observations were conducted at three stages: prior to intervention, during PBL cycles, and after intervention. Key findings include:

Table 4. Classroom Observation Findings

Observation Aspect	Before PBL (Weeks 3–4)	During PBL (Weeks 5–10)	After PBL (Weeks 13–14)
Student engagement	Passive, low participation	Increased discussion, group collaboration	Active participation, leadership in discussions
Critical thinking	Reluctant to analyze beyond textbook examples	Began questioning case assumptions	Demonstrated deeper analysis, multi-angle thinking
Teamwork	Uneven participation within groups	More balanced group interaction	High teamwork cohesion, shared responsibilities
Instructor-student interaction	Teacher-led, minimal questions from students	Shifted to facilitator role, increased questions	Highly interactive, students seeking feedback

Overall, the classroom culture shifted from teacher-centered to a more student-centered and collaborative environment over the course of the intervention.

c. Student Interview Insights

Semi-structured interviews were conducted with 30 students to explore their perceptions of the PBL experience. Key themes that emerged:

Table 5. Student Interview Insights on the PBL Experience

No	Theme	Student Quote	Student ID
1	Enhanced Understanding	<i>"I finally understood how to use ABC and JIT in real business problems, not just for exams."</i>	Student 12
2	Improved Confidence	<i>"Before, I was nervous to speak in class. Now after working in groups, I feel more confident to explain accounting ideas."</i>	Student 7
3	Motivation and Engagement	<i>"PBL made the course more interesting. Solving cases felt meaningful and fun, not just memorizing formulas."</i>	Student 19
4	Challenges	<i>"At first, it was difficult to adjust because I was used to lectures. But after the second cycle, I enjoyed it more."</i>	Student 22
5	Perceived Relevance	<i>"Now I see how these accounting techniques actually apply to managing a company, not just for passing a test."</i>	Student 3

These qualitative findings confirm that PBL had a positive impact on both cognitive and affective learning outcomes, fostering greater motivation, deeper understanding, and improved collaborative skills.)

2. Discussion

The findings of this study demonstrate that the integration of Problem-Based Learning (PBL) into the Management accounting course significantly enhanced students' conceptual understanding and analytical problem-solving abilities. The improvement in pre- to post-test scores across all participating classes—particularly in complex areas such as Activity-Based Costing (ABC), Just-in-Time (JIT), Balanced Scorecard, and transfer pricing—provides strong quantitative evidence of PBL's effectiveness in fostering higher-order learning outcomes.

These results align with prior international research which has consistently shown that PBL enhances critical thinking, problem-solving, and student engagement in accounting education (Hidayati et al., 2023; Seibert, 2021b; Uliyandari et al., 2021). The observed gains in student performance in this study further confirm that PBL is particularly suited to Management accounting, a subject that demands the ability to integrate technical knowledge with strategic decision-making.

In addition to cognitive gains, the qualitative data from classroom observations and student interviews revealed important shifts in classroom dynamics and learning behaviors. Students transitioned from passive recipients of information to active participants, displaying greater confidence in presenting and defending their analyses. The emergence of collaborative problem-solving and increased student-initiated inquiry suggest that PBL fosters not only individual competencies but also essential interpersonal skills valued in professional accounting contexts (Dalila et al., 2022).

Importantly, this study contributes new insights to the literature by providing empirical evidence from an Indonesian educational context, where the adoption of active learning pedagogies remains relatively limited and culturally challenging (Akcaay & Benek, 2024). The successful implementation of PBL in this setting demonstrates that, despite initial resistance and adaptation challenges, Indonesian students can engage effectively with learner-centered approaches when supported by well-structured instructional design and facilitative teaching practices.

Furthermore, while prior studies have tended to focus on PBL in introductory accounting or auditing courses (Alt & Raichel, 2022b; G. Smith et al., 2023), this research shows that PBL is equally effective—and arguably even more valuable—in advanced, analytically complex courses such as Management accounting. Given the increasing emphasis on data-driven decision-making in the accounting profession, equipping students with these competencies is critical for aligning higher education outcomes with evolving industry expectations. Nonetheless, several challenges were noted. Some students initially struggled with the increased autonomy and responsibility required in PBL, reflecting the influence of prior educational experiences that emphasized passive learning. This highlights the need for scaffolding strategies—such as gradual introduction of PBL components, explicit guidance on collaborative skills, and reflective debriefing—to support student

adaptation. Moreover, instructors must be prepared to adopt the role of facilitator rather than content expert, which requires targeted faculty development.

Overall, the study confirms that PBL is an effective and adaptable pedagogy for Management accounting courses in Indonesian higher education. It not only improves conceptual mastery and problem-solving capabilities but also fosters the professional skills and dispositions demanded by the modern accounting workplace.

CONCLUSION AND SUGGESTION

This study provides empirical evidence that Problem-Based Learning (PBL) is an effective pedagogical approach for enhancing both conceptual understanding and analytical problem-solving abilities in Management accounting education. The integration of PBL into the curriculum led to notable improvements in student performance, engagement, and the development of higher-order cognitive and collaborative skills. These outcomes are particularly significant given the complexity of Management accounting topics and the traditionally lecture-driven culture of accounting education in Indonesia.

The study also contributes to the growing body of literature by demonstrating that PBL can be successfully implemented in non-Western, hierarchical educational contexts, where active learning approaches are not yet widely adopted. Furthermore, it offers practical insights into how PBL can be aligned with specific learning outcomes in Management accounting to foster professional competencies that align with the needs of today's dynamic accounting profession.

Recommendations based on the findings are as follows:

1. Curriculum Development

Accounting programs should consider adopting PBL more broadly across both foundational and advanced courses to enhance students' readiness for professional practice. PBL is particularly valuable in Management accounting, where analytical and decision-making skills are essential.

2. Faculty Training

Instructors require targeted professional development to effectively transition to the role of facilitator in PBL environments. Training should focus on scaffolding inquiry, managing group dynamics, and fostering reflective learning.

3. Instructional Design

A gradual integration of PBL components is recommended to support student adaptation, particularly in contexts where students may be unfamiliar with learner-centered approaches.

4. Future Research

Further studies could explore the long-term effects of PBL on graduate employability and professional performance. Comparative studies across institutions and cultural contexts would also enrich understanding of PBL's adaptability and impact in diverse educational settings.

By implementing these recommendations, accounting educators and institutions can advance pedagogical innovation and contribute to producing graduates who are better equipped to meet the evolving demands of the accounting profession.

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