Applying Problem-Based Learning and Drill Method to Enhance Critical Thinking and Learning Outcomes

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Abstract:

Critical thinking skills and learning outcomes are two important aspects that are interrelated in achieving optimal learning objectives. This study aims to describe the effectiveness of the application of the Problem Based Learning (PBL) learning model combined with the drill method in improving students' critical thinking skills and learning outcomes in the material of trading company financial reports. This study uses a classroom action research (CAR) approach which is implemented in two cycles. Each cycle consists of two meetings that include the stages of planning, action implementation, observation, and reflection. The subjects in this study were 29 students of class XI Accounting 3 SMKN 1 Nainggolan. Data collection techniques were carried out through observation, learning outcome tests, and documentation. The results showed that students' critical thinking skills increased from an average of 58.76% in cycle I to 72.70% in cycle II. Meanwhile, the level of completion of learning outcomes classically increased from 79.31% in cycle I to 100% in cycle II. Thus, it can be concluded that the application of the Problem Based Learning model with the drill method is effective in improving students' critical thinking skills and learning outcomes.

Keywords: PBL, Drill, Critical Thinking, Learning Outcomes.

Introduction

Critical thinking skills and optimal learning outcomes are two fundamental objectives of education, particularly in Vocational High Schools (SMK) which are oriented towards preparing students for the workforce. In today's competitive job market, graduates are expected not only to possess theoretical knowledge but also to apply it critically in solving real-world problems. However, various reports and observations show that many vocational students still struggle to develop these competencies, both in cognitive and practical domains. In the context of accounting education, especially in the Trading Company Accounting Practicum subject, students are required to master the complete accounting cycle—from recording transactions to preparing financial statements—accurately and systematically.

This mastery demands a combination of conceptual understanding and procedural skills. Initial observations at SMK Negeri 1 Nainggolan reveal that many students face difficulties in compiling the accounting cycle, resulting in grades below the Learning Objective Achievement Criteria (KKTP) and showing limited ability to analyze and evaluate accounting information.

Previous studies have consistently demonstrated the effectiveness of Problem-Based Learning (PBL) in enhancing students' analytical skills, engagement, and learning outcomes across various subjects. Likewise, the drill method—characterized by structured and repetitive exercises—has been shown to strengthen procedural accuracy and skill mastery. Despite these individual successes, there is still a paucity of empirical studies that integrate PBL with the drill method, especially in vocational accounting education.

This research gap is important for two reasons. **Scientifically**, integrating PBL and drill can contribute to the literature on hybrid pedagogical models by combining higher-order thinking skill development with procedural mastery—two domains often addressed separately. **Practically**, this combination offers a concrete solution for accounting educators facing the dual challenge of improving students' critical thinking while ensuring accurate and systematic completion of accounting tasks.

Therefore, this study aims to investigate the effectiveness of combining the PBL model with the drill method in improving the critical thinking skills and learning outcomes of Class XI Accounting students at SMK Negeri 1 Nainggolan. The results are expected to make a theoretical contribution by enriching the discourse on integrated instructional approaches and a practical contribution by providing a replicable and contextually relevant teaching strategy for vocational accounting education.

Learning conditions that are less interactive and minimal discussion can be a serious obstacle in the development of students' critical thinking skills which are very much needed in the world of work and everyday life. Therefore, it is necessary to implement a more participatory and problem-solving-oriented learning strategy to increase students' active involvement during the learning process.

In the context of education, learning outcomes and critical thinking skills are two important components that are interrelated. Learning outcomes refer to students' cognitive achievements obtained after going through the learning process and are usually measured through evaluation instruments. Previous studies have shown that learning outcomes are greatly influenced by the learning model used in the classroom. For example, (Sari et al., 2023) found that problem-based learning models can significantly improve student learning outcomes compared to conventional methods. Similar research by Windasari and Bukhori (2022) emphasized that active student participation plays an important role in improving mathematics learning outcomes. On the other hand, critical thinking skills are cognitive skills that include the ability to analyze, evaluate, and organize arguments logically and systematically. Research by Komisia revealed that students who have a high level of critical thinking skills tend to show better learning outcomes, especially in science subjects. This finding is supported by (Ba'e, n.d.) who stated that high-level thinking skills are closely related to student learning outcomes in mathematics learning.

These findings indicate that improving learning outcomes depends not only on the teaching methods used, but also on the extent to which critical thinking skills are developed during learning. Therefore, it is important for educators to design learning strategies that do not only focus on delivering materials, but also encourage the development of critical thinking skills through discussions, case analysis, and problem solving based on real contexts.

Based on the results of interviews with Accounting Practicum subject teachers at SMK Negeri 1 Nainggolan, it is known that students' ability to compile the accounting cycle of trading companies is still relatively low. This is reflected in the learning outcome scores that have not reached the Learning Objective Achievement Criteria (KKTP) of 70 as set by the school. This condition indicates the need for learning interventions that can bridge the gap between students' mastery of concepts and technical skills.

To answer these problems, this study aims to test the effectiveness of the Problem Based Learning (PBL) learning model combined with the drill method in improving critical thinking skills and student learning outcomes. This study contributes to the vocational education literature by presenting a learning approach that combines the development of high-level thinking with the strengthening of technical skills through repeated practice, which has so far rarely been studied in an integrated manner in the context of accounting learning in vocational schools.

Table 1. Student Daily Test Recap

Class	Information	KKTP	Amount Student	Students Who Complete		Students Who Did Not Complete	
				Amount	%	Amount	%
XI AK	UH 1	70	29	16	55%	13	45%
	UH 2			9	31%	20	69%
	UH 3			14	48%	15	52%
Average				13	45%	16	55%

Source: List of Daily Test Scores for Accounting Practicals for Service, Trading and Manufacturing Companies, Class XI AKL 3, SMKN 1 NAINGGOLAN 2024/2025

Critical thinking skills and optimal learning outcomes are two main indicators in achieving educational goals, especially at the Vocational High School (SMK) level which emphasizes students' work readiness. In learning practices, many students still have difficulty in achieving the Minimum Completion Criteria (KKM) and show low critical thinking skills. This is reinforced by daily test data on the Accounting Practicum for Medium Service and Trading Companies (PAPJDM) subject at SMK Negeri 1 Nainggolan, which shows that only 45% of students meet the KKTP (≥70), while the other 55% have not achieved completion. This finding indicates that most students have not shown adequate academic performance.

The low achievement of learning outcomes and critical thinking skills of students cannot be separated from the learning strategies applied in the classroom. Learning that is dominated by lecture methods tends to be less encouraging for students to think analytically, solve real problems, and actively participate in the learning process. Therefore, it is necessary to apply a learning model that is able to build deeper student involvement, both from cognitive and affective aspects.

Several previous studies have shown that the use of the Problem Based Learning (PBL) model is effective in improving critical thinking skills and student learning outcomes (Nafiah & Suyanto, n.d.). Meanwhile, the drill method has also been shown to strengthen students' understanding through structured and repetitive exercises (Aliwarman et al., n.d.). However, research that integrates these two approaches simultaneously, especially in the context of accounting learning in vocational schools, is still limited. The study by (Krisdiana et al., 2023), for example, only reviewed the use of PBL in the context of scientific literacy without combining it with the drill method in depth.

To bridge this gap, this study examines the effectiveness of combining the Problem Based Learning (PBL) model with the drill method in improving critical thinking skills and student learning outcomes. This gap is important because, although PBL has been widely recognized for fostering analytical and problem-solving abilities, it often lacks sufficient emphasis on procedural mastery. Conversely, the drill method is effective for strengthening technical accuracy but does not adequately promote higher-order thinking. By integrating the two approaches, this research aims to address both challenges simultaneously—enhancing students' ability to logically dissect complex problems while also ensuring they can execute accounting procedures accurately and systematically. This contribution is significant both scientifically, by enriching the literature on hybrid pedagogical models in vocational education, and practically, by providing accounting teachers with a replicable strategy to improve both cognitive and technical competencies in a single learning design.

This study investigates the effectiveness of integrating the Problem-Based Learning (PBL) model with the drill method in enhancing critical thinking skills and learning outcomes of Class XI Accounting students at SMKN 1 Nainggolan in the 2024/2025 Academic Year. This research is important because it addresses the limited empirical evidence on hybrid learning models that combine analytical skill development with procedural mastery in vocational accounting education. The findings are expected to contribute theoretically by enriching the literature on integrated pedagogical strategies, and practically by offering accounting educators a replicable approach to improve both cognitive and technical competencies in a single learning design. The contribution of this study is theoretically expected to strengthen the empirical basis in the development of problem-based learning strategies combined with technical exercises, while practically, the results of this study can be used as a guide in designing more effective and meaningful learning in the vocational high school environment.

Literature Review

a. PBL (Problem Based Learning) Learning Model

The Problem Based Learning (PBL) learning model is a structured approach to facilitating learning based on real problems that are complex and ambiguous, with the aim of stimulating students' critical thinking skills (Salamun et al., n.d.). In the realm of accounting education in vocational schools, this approach has been proven to improve student learning outcomes. A study conducted by Salamun et al. (2024) showed that the application of PBL to the Financial Accounting subject at SMKN 44 Jakarta significantly increased students' learning activities and academic outcomes. Similar findings were also reported by (Wahjudi et al., n.d.) at SMK Negeri 1 Sooko Mojokerto, where classical completion increased from 70% to 86% after the implementation of PBL.

Furthermore, (Herliani et al., 2017) stated that the implementation of PBL enables students to conduct group investigations in solving problems, while teachers act as facilitators and guides in the information exploration process. This approach provides space for students to develop their knowledge through collaboration and finding solutions based on their own learning experiences. The main characteristics of PBL, according to (Salamun et al., n.d.), include the use of problems as learning triggers, cross-disciplinary approaches, independent use of information sources, dynamic interactions in group learning, and experience-oriented learning synthesis. This explanation is reinforced by (Harahap & Surya,),

who added that PBL trains students to think logically through a data-based deductive-inductive approach. Meanwhile, (Tirania Stefani et al., n.d.) highlighted the importance of investigation, collaboration, and reflection in every stage of learning as crucial elements in PBL. The stages of PBL implementation are systematically explained by Berliana (2024), starting from providing learning objectives and motivation, compiling problem-solving steps, searching for information and hypotheses, to compiling reports and reflections on learning outcomes. Meanwhile, Fahrurrozi et al. (2022) detail these stages into a process that supports students' active exploration of contextual problems.

Based on the review, it can be concluded that although PBL has been proven effective in various contexts, studies that specifically examine the application of PBL combined with the drill method in accounting learning are still limited. Therefore, this study is here to bridge the gap by exploring how the combination of PBL and drill can develop critical thinking skills while improving student learning outcomes in vocational schools, especially in the material of trading company financial reports.

b. Drill Learning Method

Education plays a crucial role in creating superior human resources, where the success of learning is greatly influenced by the teaching approach used by the teacher. One method that has been proven to support learning success, especially in mastering technical skills, is the drill method. This method emphasizes repeated exercises to form skills, dexterity, and mastery of the material gradually and deeply. Drills not only strengthen conceptual understanding, but also increase students' automation in solving various problems, both academic and practical. Several previous studies have highlighted the effectiveness of the drill method in skills-based learning, especially in accounting. Research by Elsafayanti et al. (2022) shows that the use of the drill method can improve students' understanding in every stage of the trading company accounting cycle, from recording, grouping, to preparing financial reports. Similar findings were also conveyed by Rohmah (2017), who emphasized that structured and intensive exercises help students master complex accounting procedures in a systematic manner.

Furthermore, Kumalasari et al. (2021) stated that choosing the right learning method greatly determines the achievement of learning outcomes. In this context, teachers are required to master various strategies so that the learning process runs effectively. Nursehah and Rahmadini (2021) added that the drill method is one technique that can improve students' skills through practice activities, not only to absorb information but also to apply knowledge in active learning activities. This is reinforced by Fitria and Rachayu (2020), who emphasize that this method is able to help students achieve the expected competency standards optimally. Kusrini (2018) describes the drill method as a training process that is continuously honed, to form comfortable and structured learning habits. This repeated practice not only improves skills, but also strengthens students' memory in solving problems, as expressed by Prayogo (2022). Meanwhile, Prikken et al. (2019) in their research on the drill and practice method in Manufacturing Accounting subjects in SMK, concluded that this method is very suitable for practical learning. The same thing was found by Munirul Abidin (2023), who showed an increase in students' abilities in completing the accounting cycle of service companies through the drill method.

In general, the drill method has the characteristic of intensive repetition of material with the aim of improving students' accuracy and skills. The stages of implementing this method usually begin with the provision of theoretical material, then continued with repeated practice until students are truly skilled. Thus, the drill method is seen as a strategic learning approach to build students' readiness to apply

concepts directly in various learning situations, especially in the context of accounting which demands procedural accuracy. However, the literature review shows that studies on the effectiveness of combining the drill method with the Problem Based Learning (PBL) model, especially in the practice of trading company accounting learning, have not been widely conducted. Therefore, this study aims to fill this gap by examining the effect of the combination of PBL and drill on critical thinking skills and student learning outcomes in vocational schools.

c. Problem Based Learning PBL Learning Model with Drill method

The success of the learning process in the classroom is greatly influenced by the teacher's ability to design and implement innovative and contextual learning models. The selection of the right learning model not only has an impact on increasing student activity, but also determines the achievement of learning outcomes. One approach that has been proven effective in increasing student engagement and thinking skills is Problem-Based Learning (PBL). This model is designed to encourage students to be able to think critically and creatively through problem-solving activities that are appropriate to the context of the subject matter.

In practice, the effectiveness of PBL can be improved by integrating supporting methods, one of which is the drill method. This method focuses on systematic repetitive exercises to strengthen students' mastery of basic concepts and skills. The combination of PBL and the drill method allows learning to take place more comprehensively, where students not only develop analytical skills in problem-solving discussions but also deepen technical skills through intensive practice. This is in line with the findings of several previous studies showing that repetitive exercises can improve the accuracy of students' understanding of complex material, including in the context of preparing financial statements.

The PBL model combined with the drill method provides a more focused and adaptive approach to students' learning needs. In the context of accounting learning, especially the material on the trading company accounting cycle, this approach allows students to understand the flow of recording and reporting conceptually and practically. Thus, students not only understand the concept in theory, but are also skilled in applying it systematically. This kind of teaching strategy has the potential to bridge the gap between mastery of theory and technical skills which have been challenges in vocational learning. Therefore, the development and application of the Problem-Based Learning learning model combined with the drill method need to be studied further so that it can be a strategic alternative in improving the quality of accounting learning at the Vocational High School (SMK) level.

d. Students' Critical Thinking Skills

Critical thinking skills are one of the crucial cognitive competencies in facing the dynamics of modern life. These skills include systematic and logical thinking processes, including the ability to analyze problems, assess various arguments, make rational decisions, and formulate effective solutions to complex problems. In the world of education, especially at the vocational secondary level, critical thinking skills are an important indicator in supporting academic success as well as student readiness in facing the challenges of the world of work.

Several studies have shown that critical thinking skills can be honed through interactive learning approaches and encourage active student involvement. Munawwarah et al. (2020) stated that critical thinking includes the activities of interpretation, evaluation, drawing conclusions, and self-regulation in

solving problems. In line with that, Widiya & Radia (2023) stated that this ability involves stages of strategic reasoning used to draw conclusions and develop problem-solving ideas. In other words, critical thinking is not only related to conceptual understanding, but also to skills in evaluating and constructing solutions based on available data or information.

Furthermore, Ridlo Purwanto et al. (2019) emphasized that thinking is a natural response of individuals when facing everyday problems, and thinking skills can develop through repeated problem-solving exercises. This is in line with the findings of Rachmantika & Wardono (2019), and Nuryanti et al. (2018), which show that the problem-solving-based learning process has been proven to improve students' critical thinking skills, especially in the context of mathematics learning.

As a further explanation, Prasetyo & Firmansyah (2022) grouped critical thinking ability indicators into six aspects, namely: (1) identifying relevant problems and conclusions, (2) analyzing arguments, (3) compiling critical questions and in-depth answers, (4) recognizing and using terminology with logical reasons, (5) evaluating observation results, and (6) considering various points of view objectively.

The review of various literatures strengthens the urgency of developing critical thinking skills in the learning process. However, the integration of these indicators in the practice of accounting learning in vocational schools, especially in the material of trading company financial reports, still requires a systematic and contextual learning strategy. To bridge this need, this study explores the Problem-Based Learning model combined with the drill method as an effort to develop students' critical thinking skills in a structured and applicable manner.

e. Student Learning Outcomes

Learning outcomes are one of the main indicators of the success of the educational process, especially in the context of learning in schools. Learning outcomes not only show students' mastery of the subject matter, but also reflect the development of attitudes, skills, and thinking abilities acquired during the learning process. Every learning activity that is carried out consistently will have a positive influence on behavioral changes and increased student competence. This process takes place through structured and continuous learning stages.

According to Fauhah and Rosy (2021), learning outcomes include individual mastery of the learning experiences they receive, both in the form of theoretical knowledge, attitudes, skills, and habits. Meanwhile, Ilmiah Pendidikan et al. (2019) emphasized that learning outcomes are a reflection of the competencies obtained by students after participating in learning and are influenced by various internal and external factors. Learning outcomes also function as a measuring tool that helps teachers evaluate student competency achievement and design more effective learning strategies.

Furthermore, several researchers such as NPAP Paramita et al. (2023) and Wulansari & Manoy (2021) divide the factors that influence learning outcomes into two categories, namely internal and external factors. Internal factors include physical conditions, psychological aspects such as interests and motivations, and talents and cognitive abilities of students. External factors include the family environment, school, community, and the availability of time and learning resources. In this case, the role of teachers is very important as facilitators who are able to explore and develop students' potential so that their learning outcomes can improve optimally.

In terms of indicators, learning outcomes can be analyzed through three main domains: cognitive, affective, and psychomotor (Fauhah & Rosy, 2021; Ridwan, 2021). The cognitive domain is related to understanding concepts, the ability to analyze, and evaluate information. The affective domain includes attitudes, interests, and values that students internalize during the learning process. Meanwhile, the psychomotor domain reflects students' practical skills and abilities in applying the material directly.

Thus, in the context of accounting learning, learning outcomes are defined as students' abilities—both individually and in groups—obtained through learning activities and evaluated based on changes in conceptual understanding, practical skills, and the ability to relate learning materials to real contexts. These results are important indicators in assessing the effectiveness of the learning process and providing input for improving further teaching strategies.

Research Methodology

This study employed a quantitative approach using the Classroom Action Research (CAR) model developed by Kurt Lewin, conducted in two cycles. This model was chosen because it enables direct observation and iterative improvement of teaching strategies in the actual classroom, making it suitable for testing the combined PBL and drill method. Each cycle consists of four main phases: planning, implementation, observation, and reflection. The research was carried out in the 2024/2025 academic year, with the participants being 29 students from class XI AKL 3 at SMK Negeri 1 Nainggolan. The focus of the study was to investigate the effectiveness of applying the Problem-Based Learning (PBL) model combined with the drill method in accounting instruction.

The observation sheet consisted of 6 indicators of critical thinking skills—problem identification, argument analysis, formulation of critical questions, accurate use of accounting terminology, logical evaluation, and objective problem solving. Each indicator was measured using a 4-point Likert scale (1 = very poor, 4 = very good), with a total of 18 items. The instrument was validated through expert judgment by two accounting education lecturers, and minor revisions were made based on their feedback to ensure content validity.

Data were gathered through direct classroom observations and written tests. The results were analyzed using descriptive statistics, particularly to measure the percentage improvement in critical thinking skills and learning mastery. Students were considered to have achieved learning mastery if they scored at least 75, and class-wide mastery was defined as being met when a minimum of 80% of students reached the required threshold.

The success of the learning intervention was determined based on two primary indicators: (1) at least 80% of students demonstrating critical thinking skills categorized as "critical" or above, and (2) at least 80% of students attaining a minimum score of 75 on the post-test. In addition to these quantitative measures, the effectiveness of the instructional model was also assessed qualitatively by observing increased student engagement and their ability to independently and systematically construct the accounting cycle for trading companies.

Throughout the research process, the researcher played an active role in both facilitating learning and collecting data, ensuring validity through triangulation of observation and test results, and conducting reflective evaluations after each cycle to refine the instructional strategy.

Results and Discussions

This research was conducted in two cycles on 29 students of Class XI AKL 3 SMKN 1 Nainggolan with the aim of improving critical thinking skills and student learning outcomes through the application of the Problem-Based Learning (PBL) model combined with the drill method. Data were collected through observation and written tests, analyzed descriptively and quantitatively.

Students' critical thinking skills in Cycle I showed an average of 58.76% (quite critical category), with only 34% of students in the "critical" category. After improvements were made in Cycle II, the average increased to 72.70%, and 83% of students were in the "critical" and "very critical" categories. Student learning outcomes also showed improvement. The pre-test average of 72.93 increased to 81.31 in post-test I and 88.75 in post-test II. Learning completeness increased from 44.82% (pre-test) to 79.31% (post-test I), and reached 100% in post-test II.

The integrated application of PBL and drill methods proved effective in improving students' critical thinking skills and academic achievement. In Cycle I, critical thinking skills were still low due to the dominance of one-way learning and lack of reinforcement exercises. In Cycle II, greater emphasis on collaboration, real-world case exploration, and repeated exercises contributed to significant improvements in all critical thinking indicators. PBL encourages students to be actively involved in analyzing and solving contextual problems, while drills provide technical reinforcement for accuracy of work. The synergy of both optimizes conceptual understanding as well as technical skills. Data from this study show that the more actively students are involved in the learning process, the higher their cognitive achievement and higher-order thinking skills. The improvement in learning outcomes from Cycle I to Cycle II also indicates that students were not only able to increase their grades, but also achieve higher grade categories. This demonstrates the success of the applied learning model in developing students' academic abilities and professional competencies in accounting.

Research results

In Cycle I, the average critical thinking score of Class XI AKL 3 students was 58.76% (quite critical category), with only 34% of students in the "critical" category. After improvements were implemented in Cycle II, the average increased to 72.70%, and 83% of students reached the "critical" and "very critical" categories. The results of the written tests and observations are presented in the following tables and graphs.

1. **Critical Thinking Skills**

The increase in students' critical thinking skills from cycle I to cycle II can be seen in Table 2.

Table 2. Average Critical Thinking Skills of Students per Indicator

No	Indicator	Cycle I (%)	Cycle II (%)
1	Identification of problems	63	74.14
2	Argument Analysis	54	68
3	Formulating Critical Questions	52	72
4	Proper Use of Accounting Terminology	55	67

5	Evaluation and Logical Reasoning	64	76
6	Objective Problem Solving	65	78
	Average	**58.76**	**72.70**

Description: Cycle I shows the "quite critical" category, while cycle II rises to the "critical" category.

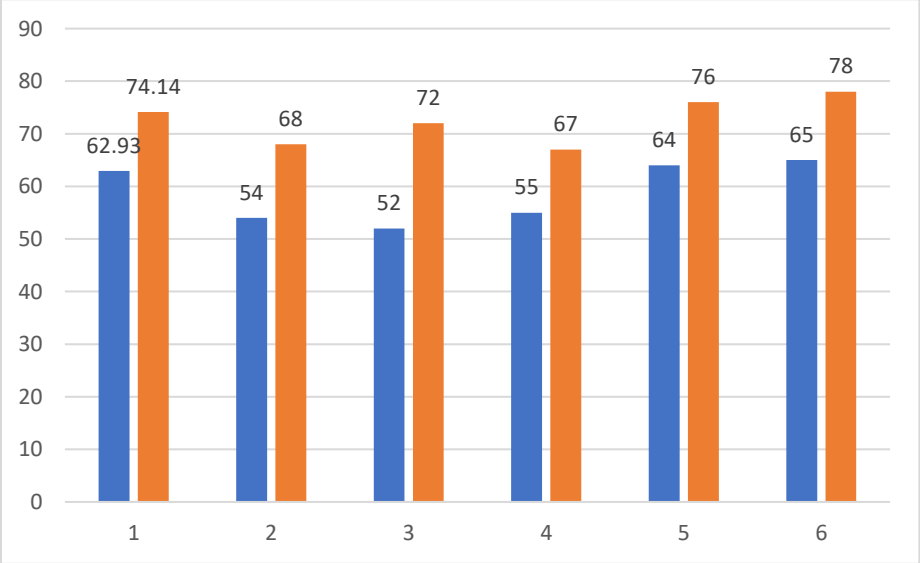

Figure 1. Increasing Critical Thinking Skills for Each Indicator

2. **Distribution of Students' Critical Thinking Levels**

Table 3. Distribution of Students' Critical Thinking Abilities

Category	Cycle I (%)	Cycle II (%)
Very Critical	0	38
Critical	34	45
Quite Critical	45	17
Less Critical	21	0

Description: There was a significant shift from the “quite critical” to “critical” and “very critical” categories in cycle II.

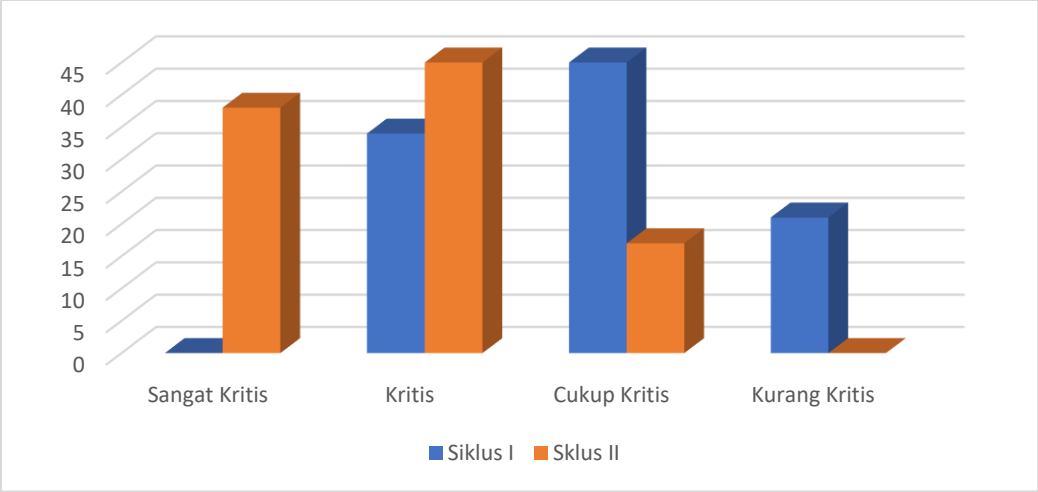

Figure 2. Comparison of Percentage of Critical Thinking Levels per Cycle

3. **Student Learning Outcomes**

The assessment was conducted through pre-test, post-test I, and post-test II. The results are presented in Table 3.

Table 4. Average Value and Learning Outcome Completion

Test Type	Average value	Completeness
Pre-Test	72.93	44.82
Post-Test I	81.31	79.31
Post-Test II	88.75	100

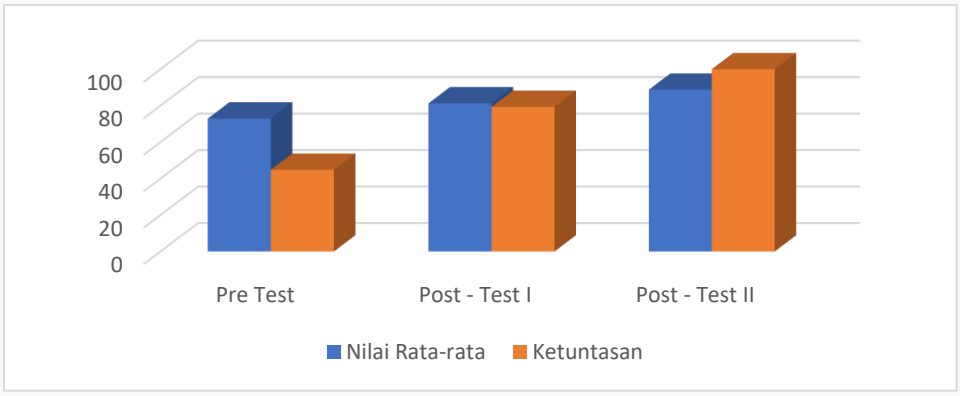

Figure 3. Graph of Improvement in Learning Outcomes and Classical Completion

Description: The increase in average value and classical completeness shows the effectiveness of the PBL model with drill in strengthening students' understanding of accounting concepts.

Discussion

The improvement of critical thinking skills and student learning outcomes in this study indicates that the application of the Problem-Based Learning (PBL) model combined with the drill method is an effective approach in accounting learning in vocational schools. Class XI Accounting 3 was selected as the research

subject because preliminary assessments showed that this class had the lowest average critical thinking skills and learning outcomes among the accounting classes at SMKN 1 Nainggolan. In addition, the material taught during the research period—the accounting cycle for trading companies—was directly aligned with the competencies targeted by the PBL and drill methods. The class size of 29 students was also suitable for classroom action research, allowing for intensive observation and iterative intervention without disrupting the overall school schedule.

The results of observations showed that the average critical thinking skills of students increased from 58.76% in Cycle I to 72.70% in Cycle II. Likewise, student learning outcomes increased from an average score of 72.93 (pre-test) to 88.75 (post-test II), with learning completeness reaching 100%. The PBL learning model is theoretically able to encourage students to be active in identifying problems, analyzing information, and critically evaluating various alternative solutions. According to Harahap and Surya (2022), the advantage of PBL lies in its ability to build problem-solving skills, group work, and independent evaluation which are very important in the accounting learning process. In addition, this model emphasizes solving real problems and stimulates students' curiosity and motivation to engage in meaningful learning (Fatima et al., 2024).

On the other hand, the drill method provides repetitive and directed practice that strengthens students' understanding of the steps in the accounting cycle. Drills help build automation in the problem-solving process, increasing students' accuracy and speed in processing accounting information (Nursehah & Rahmadini, 2021). Research by Prikken et al. (2019) shows that the drill method is very appropriate to be applied in learning accounting practices in vocational schools because it can improve students' technical skills.

The combination of PBL and drill creates a balanced learning between high-level cognitive development and mastery of basic skills. This model allows students to solve complex problems, while providing time and space to reinforce concepts through regular practice. This finding is supported by research by Nafiah and Suyanto (2014), which states that PBL can improve students' critical thinking skills in the context of vocational learning. On the other hand, research by Aliwarman et al. (2024) shows that the drill method can improve students' learning completeness in practical learning.

With significant improvements in both cognitive (critical thinking) and affective-psychomotor (learning outcomes) aspects, this approach provides a real contribution to the effectiveness of problem-based learning in vocational high schools. This approach not only builds conceptual understanding, but also practical skills needed in the workplace, especially in the field of accounting.

Conclusion

This study shows that the application of the Problem Based Learning (PBL) learning model combined with the drill method significantly improves students' critical thinking skills and learning outcomes in accounting subjects, especially on the topic of trading company financial statements. PBL facilitates problem-based learning that stimulates active involvement and independent exploration, while the drill method strengthens conceptual mastery through systematic practice.

The increase in students' critical thinking skills from the category of "quite critical" to "critical", as well as the learning completeness that increased from 44.82% to 100%, shows that the combination of these two approaches has succeeded in building deep conceptual understanding and precise technical

skills. The application of this model is also in line with the characteristics of vocational learning that emphasizes real problem solving and the relationship between accounting concepts.

The development prospects of the results of this study include the expansion of the application of the PBL-drill model to other complex and integrative accounting materials, such as adjusting journals, complete accounting cycles, and financial statement analysis. In addition, this approach can be adapted to other subjects in vocational schools that require high-level thinking skills and procedural accuracy, such as economic mathematics or financial management. In the future, the implementation of this model also has the potential to be integrated into a digital platform for project-based learning or e-learning, in order to expand students' access to independent learning and strengthen their readiness to face the challenges of the world of work based on data and analysis.

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