Al-Tatawur : International journal of Social Science (TIJOSC)

E-ISSN: 3005-5342

P-ISSN: 3005-5334

# The Effect of PjBL, Learning Motivation, and Critical Thinking Skills on the Accounting Learning Outcomes of Grade XI Students

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**Abstract:** Many factors influence learning outcomes, including methods, motivation, and critical thinking skills. This study aims to determine the effect of PjBL, motivation, and critical thinking skills on the accounting learning outcomes of 11th-grade students in the accounting and finance expertise program at SMK NU 06 Muallimin Weleri, Kendal Regency. This study is a quantitative descriptive study that uses the ex-post facto method to describe the object in detail and analyze the influence between variables through data collected by questionnaire. The population in this study were 68 11th-grade students in the Accounting and Finance Expertise Program at SMK NU 06 Muallimin Weleri, Kendal Regency, and all were used as research samples (total sampling). Data analysis used multiple regression analysis. The results showed that the variables PjBL and motivation had a positive effect on learning outcomes, while the variable critical thinking skills did not affect learning outcomes.

**Keywords:** Learning outcomes, PjBL, Motivation, Critical Thinking

## 1. INTRODUCTION

Education is a crucial foundation for national progress, and student learning outcomes reflect the quality of the education system implemented. In Indonesia, the significance of learning outcomes is highly significant given its role as a vital instrument in realizing the vision of Golden Indonesia 2045. Optimal education quality not only enhances human resource competitiveness but also contributes to poverty mitigation and increases per capita income (Putera Sampoerna Foundation, 2024). Beyond cognitive aspects, comprehensive education also shapes character, develops 21st-century skills, and fosters students' critical thinking capacity. Therefore, ideal learning outcomes should encompass basic competencies, character development, relevant 21st-century skills, inclusiveness, and a balance between theoretical foundations and practical applications.

However, the reality on the ground shows that accounting learning outcomes for students in the Accounting and Institutional Finance expertise program at SMK NU 06 Muallimin Weleri, Kendal Regency, still face challenges. Data shows that some students have not yet achieved the expected Minimum Completion Criteria (KKM). For example, the average accounting learning outcome score for class XI AK1 is 78.6, with 22% of students not yet achieving the Minimum Competency (KKM), while class XI AK2 has an average of 79.1, with 20% of students below the KKM. This condition indicates a gap in understanding and mastery of accounting material that needs to be addressed immediately. This low achievement can be traced to various factors, both internal and external. Internally, a lack of interest and motivation to learn is a significant obstacle that impacts student academic performance, often stemming from a lack of intrinsic drive to learn (Haryani et al., 2021). Furthermore, students' readiness to learn is also positively correlated with their success in understanding the subject.

On the other hand, external factors also play a role in shaping suboptimal learning outcomes. Teaching quality that is less than adaptive to students' learning styles and ineffective methods can hinder the process of understanding accounting material. Limited infrastructure, such as a lack of textbooks or teaching aids, as well as an unconducive

**Received: July 31, 2025**
**Revised: August 15, 2025**
**Accepted: September 19, 2025**
**Published: September 30, 2025**

learning environment and minimal family support, worsen students' academic performance (Pertiwi et al., 2022). One crucial component in improving learning outcomes is the teaching method applied. Teaching methods are the strategies and techniques teachers use to deliver material effectively, accommodate diverse learning styles, and create an engaging learning environment. Research has shown that an appropriate learning approach significantly impacts academic achievement. For example, expository methods can improve the academic achievement of visual learners (Ardiana Rusmawan et al., 2024), and active learning methods have shown positive effects on learning outcomes (Maulid et al., 2024).

In addition to methods, learning motivation has a fundamental influence on student success. Learning motivation is defined as the internal and external drive that encourages students to actively engage in learning activities to achieve desired goals (Rumhadi, 2017). Students with high motivation tend to be more enthusiastic, focused, persistent, and disciplined in facing learning challenges, which ultimately correlates with better academic achievement (Ahdar & Wardana, 2019; Emda, 2018). Motivation also contributes to students' emotional well-being and helps them plan their future education and careers (Setyaningrum et al., 2021; Faristin et al., 2023). Motivation drives students to strive for good results (Rahman, 2021; Lukita & Sudibjo, 2021), influenced by parental support, teacher creativity, and student interest. Learning motivation plays a vital role in improving learning outcomes (Agrifina et al., 2024; Ali, 2023; Adan, 2023). However, low motivation to learn accounting at SMK NU 06 Muallimin Weleri remains an issue, characterized by high absenteeism, lack of concentration, low discussion participation, passivity, rarely asking questions, careless assignments, and low exam scores.

Besides motivation, critical thinking skills are another essential factor influencing learning success in the 21st century. These skills encompass objective analysis, evaluation, and synthesis of information, including questioning assumptions, assessing evidence, identifying biases, and drawing logical conclusions. These skills equip students to resist accepting information at face value, develop creative solutions, and become independent individuals in decision-making (Azizah et al., 2018). Unfortunately, studies show that Indonesian students' critical thinking skills remain low, as learning strategies are not yet optimal in fostering analysis and problem-solving.

## 2. LITERATURE REVIEW

### Understanding Learning Outcomes

Learning outcomes are an essential element in the educational process, representing the transformation of student behavior after participating in learning activities. This transformation encompasses cognitive, affective, and psychomotor dimensions, emerging as a result of the interaction between the student's learning process and the teacher's teaching activities. From the teacher's perspective, this process concludes with an evaluation, while for students, learning outcomes reflect their level of success in the entire learning process (Dimyati & Mudjiono, 2015). Bloom, as cited by Dimyati and Mudjiono (2015), classifies six levels within the cognitive domain: knowledge (the ability to remember information), understanding (the ability to grasp the essence of material), application (the ability to implement concepts in new situations), analysis (the ability to break down structures into components), synthesis (the ability to form new structures or patterns), and evaluation (the ability to assess based on specific standards).

Quality learning outcomes are reflected in students' ability to understand learning materials, apply them, and demonstrate behaviors aligned with learning objectives (T. Rahman & Putri, 2022). Systematically designed and tailored learning to student needs plays a crucial role in achieving optimal learning outcomes. Evaluation of learning outcomes can be conducted through various techniques, such as written tests, direct observation, and project-based assessments. In practice, standardized tests still dominate as a measure of competency achievement (Arifin, 2021), although the project-based assessment approach is considered more comprehensive because it can assess students' skills holistically (Hidayat et al., 2023). Students' level of understanding of the material taught is also a crucial indicator in assessing the success of the learning process (Widiastuti et al., 2022).

### Project-Based Learning (PjBL)

The 2013 Curriculum encourages the implementation of a student-centered learning approach. One model that supports this principle is Project-Based Learning (PjBL). The 2013 Curriculum implementation module explains that PjBL is a learning method that places projects or activities at the center of the entire learning process. Through these projects, students are given the opportunity to develop their exploration, analysis, interpretation, synthesis, and information processing skills, with the goal of producing diverse learning products.

Ilma Amalia et al. (2023) emphasize that Project-Based Learning (PjBL) begins with identifying a real-world problem that serves as the basis for gathering and integrating new knowledge. This approach involves hands-on activities in real-world contexts and is designed to encourage students to address and solve complex problems through systematic investigation.

Vahlepi et al. (2021) state that project-based learning emphasizes contextual problems close to students' daily lives. This encourages students to think critically, develop creativity, and produce tangible products in the form of goods or services. Project-Based Learning (PjBL) also provides opportunities for teachers to manage the learning process in a more collaborative and participatory manner, by directly involving students in project work (Vahlepi et al., 2021).

Based on the opinions expressed by various experts above, it can be concluded that "Project-Based Learning" is a student-centered learning model that begins with the identification of relevant problems, followed by an investigation and exploration process. This model provides an in-depth learning experience and produces concrete products as a manifestation of the achievement of affective, cognitive, and psychomotor competencies. The final product of this project activity can be a written report, presentation, or even a recommendation.

### Learning Motivation

Motivation is a crucial aspect that drives individuals to act and carry out certain activities. Purwanto (2007) states that motivation is everything that drives someone to take action. In Sartain's view, as cited by Purwanto, motivation is understood as a complex condition within an organism that directs behavior toward a specific goal or stimulus. In everyday life, actions considered important or trivial, risky or not, are always based on certain motivations. Even in the context of education, motivation is a crucial element determining the success of the learning process. When students exhibit symptoms such as laziness, lack of enthusiasm, or frequent truancy, this can be a sign of a learning disability.

## 3. METHODOLOGY

This research is an ex-post-facto study. According to Sugiyono (2020), ex-post-facto research is research conducted to examine an event that has already occurred and then trace it back to identify the factors that may have caused the event. Ex-post-facto research is a type of quantitative research that aims to find causal relationships in a phenomenon based on data that has already occurred. In this study, the researcher does not provide treatment or manipulate variables, but rather examines existing data to find patterns of relationships between variables.

This research was conducted at SMK NU 06 Muallimin Weleri, Kendal Regency. The population of this study was all 68 students in the 11th grade accounting and leisure expertise program at SMK NU 06 Muallimin Weleri, Kendal Regency, in the 2024/2025 academic year, consisting of two classes: 35 students in AK1 and 33 students in AK2.

## 4. RESULT AND DISCUSSION

Data on the PjBl variable were obtained using a 14-item questionnaire. Based on statistical calculations, the highest score was 56 and the lowest score was 28. The average score achieved was 40.29, median 42, mode 42, and standard deviation 5.27. These data are illustrated in the following table.

Table 1. Frequency Distribution of Students' Perceptions of PjBl

| No | Interval | Frequency (f) | Relative Frequency |
|---|---|---|---|
| 1 | 28–31 | 6 | 8,82 |
| 2 | 32–35 | 9 | 13,24 |
| 3 | 36–39 | 10 | 14,71 |
| 4 | 40–43 | 25 | 36,76 |
| 5 | 44–47 | 11 | 16,18 |
| 6 | 48–51 | 4 | 5,88 |
| 7 | 52–56 | 1 | 1,47 |
| | Total | 68 | 100,00 |

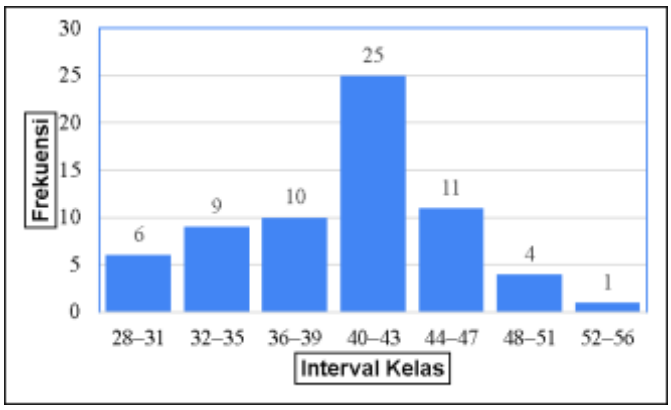


Figure 1. Histogram of PjBL Frequency Distribution

Based on Table 1 and Figure 1, the highest frequency is found in the 40-43 interval class, with 25 participants.

Table 1. PjBL Data Trend

| No | Interval | Category | Frequency (f) | Relative Frequency (%) |
|---|---|---|---|---|
| 1 | ≥ 42 | Very Good | 36 | 52.94 |
| 2 | 35 – 41 | Good | 23 | 33.82 |
| 3 | 28 – 34 | Enough | 9 | 13.24 |
| 4 | < 28 | Less | 0 | 0.00 |
| | Total | | 68 | 100,00 |

Based on the table, 52.94% of respondents' PjBL data is very good.

**Learning Motivation Variable**

Data on the motivation variable were obtained using a 12-item questionnaire. Based on statistical calculations, the highest score was 47 and the lowest score was 29. The average score was 36.75, median 36, mode 36, and standard deviation 3.75. These data can be depicted in the following frequency distribution:

Table 3. Frequency Distribution of Learning Motivation Variables

| No | Kelas Interval | Frekuensi (f) | Frekuensi Relatif (%) |
|---|---|---|---|
| 1 | 27 – 29 | 4 | 5.88 |
| 2 | 30 – 32 | 7 | 10.29 |
| 3 | 33 – 35 | 13 | 19.12 |
| 4 | 36 – 38 | 25 | 36.76 |
| 5 | 39 – 41 | 14 | 20.59 |
| 6 | 42 – 44 | 5 | 7.35 |
| 7 | 45-48 | 0 | 0,00 |
| | Jumlah | 68 | 100,00 |

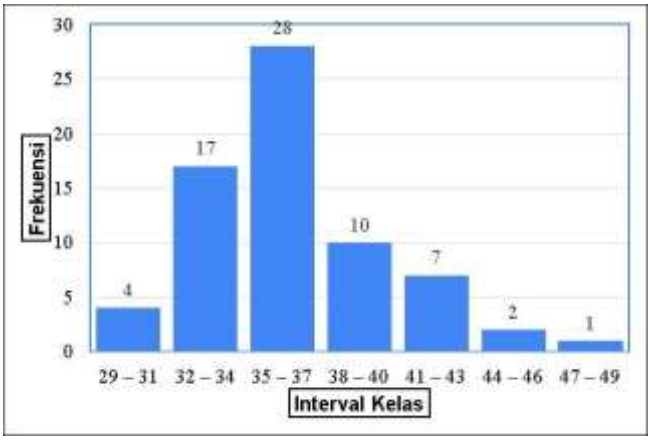


Figure 2. Histogram of the Frequency Distribution of the Learning Motivation Variable

Based on the table above, the highest frequency is found in the 36-38 class interval, with 25 students.

Table 4. Trends in Learning Motivation Data

| No | Interval Score | Category | Frequency (f) | Relative Frequency (%) |
|---|---|---|---|---|
| 1 | ≥ 35 | Very High | 47 | 69,12 |
| 2 | 29 – 34 | High | 17 | 25,00 |
| 3 | 23 – 28 | Enough | 4 | 5,88 |
| 4 | < 23 | Low | 0 | 0,00 |
| | | Total | 68 | 100,00 |

Based on the table, the majority of students' learning motivation falls into the very high category, representing 47 students (69.12%).

**Critical Thinking Ability Variable**

The critical thinking ability variable data was obtained using a 14-item questionnaire. Based on statistical calculations, the highest score was 56 and the lowest score was 35. The mean score was 43.72, with a median of 42, a mode of 42, and a standard deviation of 4.60.

Table 5. Frequency Distribution of the Critical Thinking Ability Variable

| No | Interval Class | Frequency (f) | Relative Frequency (%) |
|---|---|---|---|
| 1 | 35 – 37 | 4 | 5,88 |
| 2 | 38 – 40 | 8 | 11,76 |
| 3 | 41 – 43 | 30 | 44,12 |
| 4 | 44 – 46 | 16 | 23,53 |
| 5 | 47 – 49 | 4 | 5,88 |
| 6 | 50 – 52 | 5 | 7,35 |
| 7 | 53 – 55 | 1 | 1,47 |
| | Total | 68 | 100 |

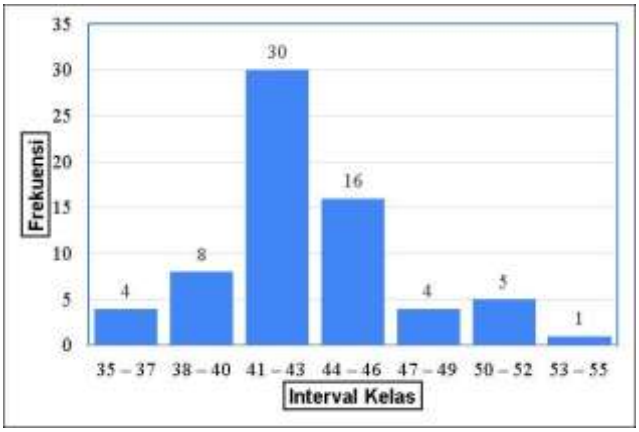


Figure 3. Histogram of Frequency Distribution of Critical Thinking Ability Variables

Based on Table 5 and Figure 3 above, the highest frequency is found in the 41-43 interval class, with a total of 30 students.

Table 6. Trends in Critical Thinking Ability

| No | Interval Score | Category | Frequency (f) | Relative Frequency (%) |
|---|---|---|---|---|
| 1 | ≥ 42 | Very High | 44 | 73,33 |
| 2 | 35 – 41 | High | 16 | 26,67 |
| 3 | 28 – 34 | Enough | 0 | 0,00 |
| 4 | < 28 | Low | 0 | 0,00 |
| | | Total | 68 | 100,00 |

Based on the table, the majority of students' critical thinking abilities fall into the very high category, with 44 students, with a percentage of 73.33.

**Learning Outcome Variables**

Data on the learning outcome variables were obtained from documentation. Based on statistical calculations, the highest score was 90 and the lowest score was 77. The mean score achieved was 83.15, with a median of 83, a mode of 81, and a standard deviation of 3.06. A frequency distribution can be created for the learning outcome data.

Table 7. Frequency Distribution of Learning Outcome Data

| No | Interval Class | Frequency (f) | Relative Frequency (%) |
|---|---|---|---|
| 1 | 77 – 78 | 5 | 7.69 |
| 2 | 79 – 80 | 7 | 10.77 |
| 3 | 81 – 82 | 19 | 29.23 |
| 4 | 83 – 84 | 12 | 18.46 |
| 5 | 85 – 86 | 12 | 18.46 |
| 6 | 87 – 88 | 8 | 12.31 |
| 7 | 89 – 90 | 2 | 3.08 |
| | Total | 68 | 100 |

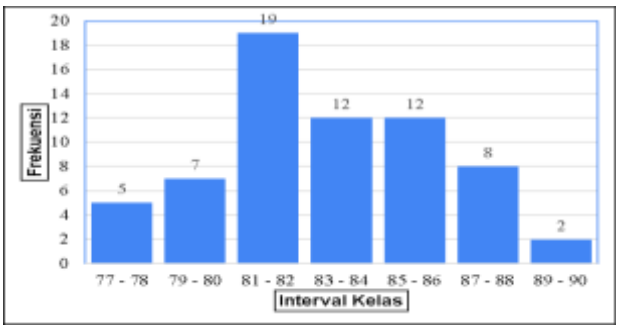


Figure 4. Histogram of Frequency Distribution of Learning Outcomes

Based on Table 7 and Figure 4, the learning outcome data with the highest frequency is found in the 81-82 interval class, with 19 students, representing a percentage of 19.23%.

**Hypothesis Testing**

**Prerequisite Analysis Test**

The results of the prerequisite analysis test indicate that the regression model meets all required assumptions. The normality test using the Kolmogorov-Smirnov test yielded a p-value of 0.268 (>0.05), indicating a normal residual distribution. The linearity test using the Ramsey RESET test yielded a p-value of 0.2727 (>0.05), proving a linear relationship between the variables. Furthermore, the multicollinearity test showed a tolerance value above 0.1 and a VIF below 10 for all independent variables, confirming the absence of a high correlation between the predictor variables. These findings overall demonstrate the appropriateness of the regression model used in this study..

**Regression Analysis**

Table 8. Regression Analysis Result

| Variable | Coeficient (B) | Std. Error |
|---|---|---|
| Intercept | 59,052 | 2,412 |
| X1 | ,199 | ,057 |
| X2 | ,400 | ,131 |
| X3 | ,031 | ,102 |

Based on table 8, the regression equation is : Y=59,052+0.199 X1+0.400 X2+ 0.031 X3

Based on the analysis results obtained from the ANOVA table is 7.121. To determine the F table value, the degree of freedom (df) of the regression (numerator) is 3 and the degree of freedom of the residual (denominator) is 64. By using the F distribution table at a significance level (α) of 0.05 and df = (3.64), the F table value is estimated at 2.76. Next, a comparison is made between the calculated F and the F table. Because the calculated F (7.121) is greater than the F table (2.76), the statistical decision is to reject the Null Hypothesis (H0). Thus, the Alternative Hypothesis (H1) is accepted. The conclusion of this test is that there is a significant influence of the independent variables PjBL, learning motivation, and critical thinking skills simultaneously on the learning outcomes of accounting and finance subjects.

**Table 9. Results of the t-test for each predictor**

| Independent Variable | t-Count | p-Value |
|---|---|---|
| PjBl | 3.524 | 0.001 |
| Learning Motivation | 3.053 | 0.003 |
| Thinking Ability | 0.306 | 0.761 |

Based on the results of the t-test on the regression model, it was found that Project-Based Learning (PjBL) has a positive and significant influence on students' accounting learning outcomes, indicated by a t-count of 3.524 with a p-value of 0.001. Similarly, learning motivation also significantly influences students' accounting learning outcomes with a t-count of 3.053 and a p-value of 0.003. However, critical thinking skills do not show a significant influence on students' accounting learning outcomes, with a t-count of 0.306 and a p-value far above the significance threshold (0.761).

**Discussion**

This comprehensive study reveals that Project-Based Learning (PjBL) and learning motivation are two key forces that significantly improve accounting learning outcomes for eleventh-grade students at SMK NU 06 Muallimin Weleri, Kendal Regency. These findings emphasize the importance of synergy between innovative learning strategies and

students' internal psychological factors in achieving optimal academic achievement, particularly in the complex accounting subject.

**The Significance of Project-Based Learning (PjBL) in Improving Learning Outcomes**

The results of this study consistently demonstrate that PjBL has a positive and significant impact on accounting learning outcomes. PjBL, as an active learning model, facilitates an authentic and meaningful learning environment. Students do not simply receive information passively but are actively involved in solving real-world problems through projects relevant to the accounting material. This active engagement strengthens conceptual understanding, improves knowledge retention, and hones application skills crucial for accounting competency in the workplace.

Moreover, PjBL acts as a catalyst in developing various 21st-century skills, such as collaboration, creativity, and problem-solving abilities. Through the stages of exploration, planning, execution, and presentation of projects, students are inherently trained to think critically, work in teams, and find innovative solutions. This aligns with various previous studies that consistently support the effectiveness of PjBL. Hasanah's (2021) study reported a substantial increase in learning completion, while Suryani (2021) showed that PjBL significantly improved accounting learning achievement (t-test = 2.431, p-value = 0.018), even with the effect amplified by students' cognitive styles. Aminah (2024) also emphasized the contribution of PjBL in improving the understanding and application of financial accounting concepts. The effectiveness of PjBL is not limited to accounting; It has been shown to be relevant in various subjects, such as basic accounting through Android applications (Budianto et al., 2024), creative products and entrepreneurship (Tahapary et al., 2021), as well as in fostering discipline (Ananto, 2019) and scientific literacy (Afriana et al., 2016). The consistency of these findings across various contexts, including international studies (Almulla, 2020), strengthens the argument that PjBL is an effective and adaptive pedagogical strategy for improving learning outcomes in vocational education.

**The Crucial Role of Learning Motivation as a Primary Driver**

In addition to PjBL, this study clearly identifies learning motivation as an essential and significant driving force for student accounting learning outcomes. Motivation, both intrinsic (intrinsic) and extrinsic (external) motivation, acts as the primary driving force that directs, sustains, and intensifies students' efforts in the learning process. Motivated students tend to demonstrate higher levels of activity, persistence, and focus in learning activities, which are directly and positively correlated with optimal learning outcomes.

Strong motivation not only encourages active participation but also influences how students approach academic challenges. This internal drive makes students better able to overcome difficulties, maintain a positive attitude toward the subject, and proactively seek effective learning solutions. Increased self-confidence and learning independence, which are derivatives of motivation, contribute to overall academic success. The link between motivation and learning outcomes is strongly supported by various educational psychology theories, such as Maslow's theory of needs, expectancy theory, and attribution theory, which emphasize the role of motivation as both an initiator and a maintainer of consistent learning efforts (Rumhadi, 2017; Ahdar & Wardana, 2019; Emda, 2018). Empirical evidence from previous studies consistently supports these findings: learning motivation has been shown to moderate accounting comprehension (Cahya & Listiadi, 2021), have a significant influence on general learning outcomes (Rahman, 2021), and significantly influence basic accounting learning outcomes (Maudina, 2024). Other studies have also highlighted the role of intrinsic motivation (Deci & Ryan, 2000), its impact on active participation and learning outcomes at various levels (Schunk et al., 2008), and its correlation with independent learning skills and a growth mindset (Zimmerman, 2000; Dweck, 2006). The consensus from these various studies confirms that learning motivation is a crucial pillar that cannot be ignored in efforts to improve accounting learning outcomes in vocational schools.

**Partial Absence of Significant Effect of Critical Thinking Skills**

Although critical thinking skills are generally recognized as a fundamental 21st-century skill and essential for meaningful learning, the results of this study indicate that this variable does not have a partial significant effect on accounting learning outcomes. This is an interesting finding, given the expectation that the ability to analyze, evaluate, and synthesize information reflectively would be directly correlated with academic achievement.

This phenomenon, where critical thinking skills do not show a significant direct effect, is consistent with several other studies in different contexts. For example, the study by Lumban Gaol et al. (2022) at the elementary school level, and Julia and Sumaryoto (2023) on Social Studies, also reported no significant effect. Similarly, the study by Yudha et al. (2022) indicated that although growth mindset and self-efficacy influence critical thinking skills, critical thinking skills themselves are not significant on learning outcomes. Similar findings were noted in the study by Hasan and Syatriandi (2018) on Biology, and Manullang et al. (2021) in Mathematics, and Hidayah et al. (2015) in Islamic Religious Education. This consistent pattern suggests that the influence of critical thinking skills on learning outcomes may be indirect, mediated by other unidentified variables, or may require a longer study period or more specific measurement instruments to explicitly demonstrate its effects in the context of accounting learning in this vocational high school. Furthermore, it is possible that the accounting learning outcome indicators measured in this study do not fully reflect the dimensions most sensitive to critical thinking skills.

**Synergy of Three Variables in Improving Accounting Learning Outcomes**

Although critical thinking skills were not partially significant, simultaneous hypothesis testing showed that PjBL, learning motivation, and critical thinking skills collectively had a significant influence on accounting learning outcomes. This indicates that while the individual influence of critical thinking skills may not be directly detectable, they remain part of the learning ecosystem that contributes to learning outcomes when interacting with PjBL and motivation. The synergy between a structured active learning approach (PjBL) and students' internal drive (motivation), supported by cognitive abilities (critical thinking), creates a holistic learning environment.

Project-Based Learning (PjBL) provides a platform for students to apply knowledge and develop practical skills, which is then reinforced by their intrinsic and extrinsic motivation to participate and succeed. Although critical thinking skills do not show a strong direct effect, it is possible that PjBL itself effectively trains aspects of critical thinking, which manifests in better understanding of the material or project completion. Therefore, for educational practitioners and curriculum developers in vocational high schools, investing in the implementation of structured Project-Based Learning (PjBL) and developing strategies to foster student learning motivation is the most effective strategic step to optimize accounting learning outcomes. Future research could explore the mediating or moderating role of other variables to understand the dynamics of the influence of critical thinking skills more deeply.

## 5. CONCLUSION

There is a positive and significant effect of Project-Based Learning (PjBL) on the accounting learning outcomes of 11th-grade students in the accounting and finance expertise program at SMK NU 06 Muallimin Weleri, Kendal Regency (t-count = 2.232, sig = 0.023 < 0.05). This means that the implementation of the Project-Based Learning (PjBL) model directly contributes significantly to improving learning outcomes. Pedagogically, this indicates that project-based learning can encourage active student engagement, strengthen conceptual understanding, and connect the material to relevant real-world contexts in the field of accounting.2. There is a positive and significant effect of learning motivation on the accounting learning outcomes of 11th-grade students in the accounting and finance expertise program at SMK NU 06 Muallimin Weleri, Kendal Regency (t-count = 2.059, sig = 0.044 < 0.05). This means that the higher the level of student learning motivation, the higher the likelihood of achieving their learning outcomes.

These results align with motivational theories in education, such as self-determination theory, which states that intrinsic motivation plays a crucial role in improving academic performance. This confirms that affective aspects such as student interest and willingness must be considered in the accounting learning process.3. There was no effect of critical thinking skills on the accounting learning outcomes of 11th-grade students in the accounting and finance expertise program at SMK NU 06 Muallimin Weleri, Kendal Regency (p=7.61>0.05). This means that although critical thinking skills are theoretically considered important in problem-solving and information analysis, in the context of this study, these skills did not significantly contribute to student learning outcomes. This could be due to several factors, such as the lack of integration of critical thinking activities into accounting learning materials or assignments, or the suboptimal development of higher-order thinking skills in students.4. There was an effect of PjBL, motivation, and critical thinking skills on the accounting learning outcomes of 11th-grade students in the accounting and finance expertise program at SMK NU 06 Muallimin Weleri, Kendal Regency (F count=7.121; sig=0.000<0.05). These findings indicate that while not all variables are individually influential, the combination of the three still makes a significant collective contribution to learning outcomes. This means that a learning approach that considers instructional strategies (PjBL), affective factors (motivation), and cognitive potential (critical thinking) can simultaneously create a more effective and productive learning environment in improving student academic outcomes.

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