THE IMPACT OF EDUCATIONAL STRATEGIES ON INVESTMENT LITERACY AMONG HIGHER EDUCATION STUDENTS

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Abstract. The number of capital market investors in Indonesia has significantly increased in recent years, indicating a growing public interest in investing. However, despite this growth, many investors are still exposed to losses from illegal investment practices, suggesting that investment literacy remains relatively low. This study aims to measure the level of investment literacy among undergraduate management students and to compare their literacy outcomes based on the application of Project-Based Learning (PJBL) and non-PJBL educational methods. The research adopts a mixed-method approach using quantitative data from questionnaires and qualitative insights from in-depth interviews. Data were analyzed using descriptive analysis and Mann-Whitney U test. The findings reveal that management students at IPB University possess a relatively high level of investment literacy. However, no significant difference was found between students taught using PJBL and those taught using non-PJBL methods. Integrating investment management courses into the curriculum contributes to enhancing student literacy. However, educational method differences do not significantly impact literacy levels. This study contributes to understanding the effectiveness of educational approaches in improving investment literacy among university students in a rapidly growing financial market.

Keywords: higher education; investment education; investment literacy; PJBL; Student Investor

I.   INTRODUCTION

Investment plays a crucial role in promoting economic growth, particularly in developing countries such as Indonesia. According to [1], an increase in the number of investors allocating capital within a country can accelerate the pace of economic growth, thereby enhancing competitiveness in the capital market. Similarly, [2] stated that there is a correlation between investment and national income, where investment growth can drive an increase in state revenue. In recent years, the number of investors in the Indonesian capital market has grown rapidly.

This growth indicates a continuously rising public interest in capital market participation. Based on data from the Indonesia Central Securities Depository [3] as of October 2024, the number of capital market investors in Indonesia exceeded 14 million. The most significant growth occurred in 2021, which, according to [3], was driven by the surge of retail investor interest during the pandemic. In this context, the public sought alternative sources of income through capital market investment returns.

According to the same KSEI report, among the more than 14 million capital market investors in Indonesia, approximately 23.36% were students. Investors with an educational background below senior high school (SMA) represented the largest proportion, reaching 50.80%, while those with a bachelor's degree (S1) represented only 24.42%. This situation indicates a gap between the level of education and the capacity to make sound investment decisions. Individuals with higher education levels are expected to possess better financial understanding, risk management skills, and strategic resource allocation capabilities. However, the reality shows that the majority of investors are from lower educational backgrounds. Therefore, it is essential to improve investment literacy widely and equitably.

A lack of understanding of basic investment concepts and associated risks makes novice investors vulnerable to poor decision-making and even high risk of falling into illegal investment schemes. [4] emphasized that low investment literacy and limited experience are the main factors causing people to make erroneous investment decisions. One implication of this low investment literacy is reflected in the increasing losses due to illegal investment practices. According to data from the Financial Services Authority OJK 2023 [5], losses caused by illegal investments in Indonesia reached their peak in 2022, amounting to IDR 120.79 trillion. This reinforces the urgency to strengthen investment literacy as a foundation for making sound and secure financial decisions. Studies by [6] as well as [7] demonstrated that investment literacy and financial literacy significantly influence the quality of investment decisions. Likewise, [8]

highlighted that individuals with high literacy levels tend to make wiser investment choices, especially within student and university populations, who have the potential to become long-term investors. In this context, higher education institutions play a strategic role in bridging the investment literacy gap, particularly among university students.

Bibliometric analyses conducted in recent years reveal that financial literacy has become a central topic among researchers, especially in relation to investment decision-making and student populations. A bibliometric study covering literature from 2019 to 2024 using the keywords financial literacy, investment, and student shows that research explicitly exploring these three topics is still relatively limited. Out of 365 initial bibliographic sources identified, only 114 articles were found to be relevant to the subject.

Furthermore, term trend analysis revealed that, out of 323 keywords extracted from selected articles, the keyword financial literacy appeared 76 times, standing out as the dominant theme in related literature. However, the keywords investment and student appeared only twice each, indicating a lack of studies directly examining the intersection between financial literacy, investment behavior, and the student demographic particularly within university contexts.

One tangible effort made by the Department of Management at IPB University to address this gap is through the integration of investment-related content into its curriculum. The course Investment Management (MAN1316) aims to enhance students' understanding of investment principles and practices. Students taking this course are expected to comprehend financial systems and capital markets, identify various investment instruments, and analyze the investment environment from macroeconomic, industry, and company perspectives. Additionally, students are equipped with skills to construct and evaluate optimal investment portfolios.

The Department has also implemented pedagogical innovation by adopting a Project-Based Learning (PJBL) approach since 2021. This method is designed to enable students not only to grasp theoretical concepts but also to apply them in real-world scenarios. PJBL has been shown to support more effective learning outcomes. According to [9], PJBL helps develop critical thinking, analytical reasoning, and strategic decision-making skills, which are essential competencies in the field of investment.

In line with these initiatives, this study aims to: (1) assess the level of investment literacy among Management Department students at IPB University after completing the Investment Management course, and (2) measure the difference in investment literacy levels between students taught using the Project-Based Learning (PJBL) method and those taught using non-PJBL method.

II. RESEARCH METHODS

This research employed both quantitative and qualitative approaches, utilizing primary and secondary data as the main sources of information. Quantitative data were obtained through structured questionnaires aimed at collecting students scores and perceptions related to their investment literacy and decision-making after completing the Investment Management course. Meanwhile, qualitative data were collected through in-depth interviews with students who decided to either continue or discontinue investing after completing the course.

The study was conducted from February to May 2025 at the Department of Management, IPB University, located at the Dramaga Campus, Bogor, West Java. The respondents comprised undergraduate students from the 57th and 58th cohorts who had completed the Investment Management course (MAN1316) at least one year prior to the study period.

This study applied a purposive quota sampling technique, which combines purposive and quota sampling methods. The selected respondents were those who had completed the Investment. Management course and represented two different instructional methods: Project-Based Learning (PJBL) and non-PJBL. The minimum sample size was determined using Slovin's formula with a margin of error (e) of 5%:

$$n = \frac{N}{1+N \times (e)^2} = \frac{261}{1+261 \times (0,05)^2} = 157,9 \quad (1)$$

Where :
 n = required sample size
 N = total population
Based on the propotion:

PJBL Group:
$$P_1 = \frac{N_1}{N} = \frac{143}{261} = 0,547 \quad (2)$$
$$n_1 = P_1 \times N = 0,547 \times 158 \quad (3)$$
$$n_1 = 87 \quad (4)$$

Non-PJBL Group:
$$P_2 = \frac{N_2}{N} = \frac{118}{261} = 0,452 \quad (5)$$
$$n_2 = P_2 \times N = 0,452 \times 158 \quad (6)$$

A.
$$n_2 = 71 \quad (7)$$

Thus, a minimum of 87 students was selected from the PJBL group and 71 students from the non-PJBL group.

Quantitative data were collected through an online survey platform using a structured questionnaire. The questionnaire was designed to measure students investment literacy levels, following [10] literacy classification: well literate, sufficient literate, less literate, and not literate. For qualitative data, semi-structured in-depth interviews were conducted with selected students to explore their investment behaviors and perspectives after completing the course.

Data analysis consisted of descriptive analysis and comparative hypothesis testing. Prior to analysis, validity and reliability tests were conducted to ensure the instrument's accuracy and consistency. An item was considered valid if the calculated correlation value (r-count) exceeded the critical value (r-table) of 0.361 at a 5% significance level. The instrument was considered reliable if the Cronbach's alpha value exceeded 0.6, as suggested by [11].

A normality test was performed to determine the appropriate comparative test. If data followed a normal

distribution, an Independent T-test was used; otherwise, the Mann–Whitney U-test was applied. Both tests were performed using SPSS software. Descriptive analysis were also used to analyze respondent profiles and investment literacy scores based on the Level of Respondent Achievement (LRA) approach.

The conceptual framework of this study is designed to provide a systematic flow of thought in addressing the research problem. The research begins with the identification of a positive trend in the number of capital market investors in Indonesia. Despite this encouraging growth, there is a significant issue related to losses from illegal investment schemes, which reflects the low level of financial literacy within society.

To mitigate this problem, one of the efforts undertaken is the implementation of the Investment Management course, which aims to improve both financial and investment literacy among students. This course particularly adopts the Project-Based Learning (PJBL) method as an instructional approach to enhance students knowledge and skills through interactive, experiential learning.
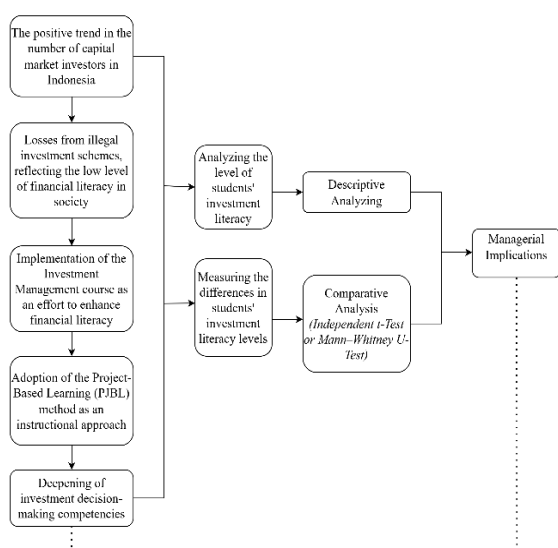

Figure 1. Research Theory
Source: Reseacher, 2025

III. RESULTS AND DISCUSSION

Descriptive analysis was conducted to measure the level of investment literacy among IPB University students who had completed the Investment Management course. Investment literacy serves as the dependent variable in this study and was measured using 23 statement indicators. Based on Table 1, the highest mean scores and Respondent Achievement Level (RAL) percentages were identified within each sub-variable of investment literacy. For the Investment Knowledge sub-variable, the highest score was obtained on the indicator "I understand the relationship between risk and return in investments," with a mean score of 3.449 and a RAL of 86.2%. [12] emphasize that

understanding the relationship between risk and return is crucial, as a good comprehension of risk plays a significant role in investment decision-making, given that risk is a key factor influencing such decisions. In the Investment Behavior sub-variable, the highest mean score was recorded on the indicator "I seek information about the financial market conditions before making an investment," with a score of 3.342 and a RAL of 83.5%. [12] also highlight the importance of investors possessing adequate knowledge about available investment opportunities in the market, which aligns with the findings of this study, where respondents showed a tendency to proactively seek market information prior to investing.

Table 1. Descriptive analysis invesment literacy

Sub Variable	Indicator	Mean	RAL (%)	Literacy Level
Investment Knowledge	I understand the relationship between risk and return in investments.	3.449	86.2	Well Literate
Investment Behavior	I seek information about financial market conditions before making an investment.	3.342	83.5	Well Literate
Investment Attitude	I believe that investing early can yield greater returns in the future.	3.494	87.3	Well Literate

Source: Reseacher, 2025

Regarding the Investment Attitude sub-variable, the highest mean score was observed on the indicator "I believe that early investment can yield greater returns in the future," with a mean of 3.494 and a RAL of 87.3%. Overall, the average mean score across all indicators was 3.149, with an average RAL of 78.7%. Based on the criteria established by the Financial Services Authority (OJK) in 2015, students from the 57th and 58th cohorts who completed the Investment Management course generally fall into the well literate category of investment literacy. These results corroborate the findings of [13], who concluded that higher education significantly influences students financial literacy. Accordingly, this study supports the concept that enhancing investment literacy and knowledge through university-level courses, particularly the Investment Management course, contributes to a higher tendency among students to achieve well-developed investment literacy.

Based on the calculations presented in Table 2, the highest mean score in the Risk sub-variable was found in the indicator "I study the various risks involved before deciding to invest," with a mean score of 3.234 and a Respondent Achievement Level (RAL) of 80.9%. For the Return sub-variable, the highest score was recorded on the indicator "I seek information about returns before deciding to invest in a particular investment instrument," with a mean score of 3.278 and a RAL of 82.0%. In the sub-variable Risk and Return Relationship, the highest mean score was observed on the indicator "I understand that the higher the potential return on

an investment, the higher the associated risk," with a mean of 3.557 and a RAL of 88.9%.

Table 2. Descriptive analysis invesment decision

Sub Variable	Indicator	Mean	RAL (%)	Literacy Level
Risk	I study the potential risks involved before deciding to invest.	3.234	80.9	Well Literate
Return	I seek information about returns before deciding to invest in a particular investment instrument.	3.278	82.0	Well Literate
Risk and Return Relationship	I understand that the higher the potential return of an investment, the higher the associated risk.	3.557	88.9	Well Literate
Environmental, Social, and Governance (ESG) Influence	I tend to invest in companies that apply the 3P principles (Profit, People, Planet).	3.057	76.4	Well Literate

Source: Reseacher, 2025

According to [14], the trade-off between risk and return is a fundamental concept in investment decision-making. The higher the potential return, the greater the risk that must be carefully considered. Therefore, diversification is an essential strategy to manage these two factors effectively. Regarding the Environmental, Social, and Governance (ESG) Influence sub-variable, the highest mean score was found on the indicator "I tend to invest in companies that implement the 3P principles (Profit, People, Planet)," with a mean score of 3.057 and a RAL of 76.4%. Overall, the average mean score across all indicators was 3.000, with an average RAL of 75.0%. Consequently, it can be concluded that Management students of IPB University from the 57th and 58th cohorts demonstrate a well literate level of investment decision-making. These findings are consistent with studies by [15] and [16], which show that financial literacy and investment knowledge have a positive and significant impact on students investment decisions. This indicates that enhancing literacy and investment knowledge through the Investment Management course can improve students' ability to make informed investment decisions.

The required assumption test in this study is the normality test, which is used to examine whether the collected data are normally distributed. The Kolmogorov-Smirnov test was employed for normality assessment because the sample size exceeded 50. According to [17], if the significance value is less than 0.05, the data are considered non-normal. If the data are normally distributed, further data analysis will be conducted using the Independent t-Test. However, if the data are not normally distributed, the analysis will proceed with the Mann-Whitney U test.

Table 3. Result Normality Test

	*Kolmogrov-Smirnov**		
	Statistic	*Df*	*Sig.*
Invesment Literacy	.081	158	.014
Literacy Decision	.118	158	<.001

Source: Reseacher, 2025

Based on table 3 the data were found to be non-normally distributed therefore, subsequent analysis was conducted using the Mann-Whitney U test. The difference in investment literacy between students who received non-Project-Based Learning (non-PJBL) and Project-Based Learning (PJBL) instructional methods in the Investment Management course was analyzed using the Mann-Whitney U test. The hypothesis testing criterion is based on the Asymptotic Significance (2-tailed) value. If this value is less than the significance level of 0.05, the null hypothesis (H_0) is rejected. Indicating that the Asymp. Sig. (2-tailed) value is below the 0.05 threshold, which implies a statistically significant difference in investment literacy levels between students taught using the non-PJBL method and those taught with the PJBL method.

Table 4. Result analysis Mann-Whitney U-test

	Effeciency Score
Mann-Whitney U	2,798
Wilcoxon W	6,626
Z	-1.014
Asymp .Sig (2-tailed)	.310

Source: Reseacher, 2025

Based on the results presented in Table 4, the Mann-Whitney U test yielded an Asymp. Sig. (2-tailed) value of 0.310, which is greater than the significance level of 0.05. Therefore, the alternative hypothesis (H_1) is rejected. This result indicates that there is no statistically significant difference in investment literacy between IPB Management students who received non-Project-Based Learning (non-PJBL) and those who were taught using the Project-Based Learning (PJBL) method. The findings suggest that both PJBL and non-PJBL educational methods have relatively equal impacts on improving students investment literacy.

These results align with the findings of [18], who reported that although the PJBL method enhances learning outcomes, the overall improvement was not statistically significant due to some students still struggling to comprehend the material. Similarly, research by [19] found no significant difference between game-based and online learning methods in enhancing students financial literacy. Consequently, it can be concluded that differences in instructional methods do not significantly affect investment literacy levels among students.

Despite the non-PJBL group lacking hands-on practice, many of these students continued to invest after completing the Investment Management course because they felt more educated about the importance of investing and risk

management. They recognized investment as a tool to achieve long-term financial goals. In contrast, some students in the PJBL group chose not to invest after the course, citing reasons such as insufficient understanding, fear of losses, and constraints related to funds and time. This suggests a need for deeper practical learning experiences to build confidence and competence.

IV. CONCLUSIONS

Investment literacy encompasses knowledge, behavior, and attitudes toward investing, reflected in students' abilities to understand basic investment concepts, analyze risk and return, and apply technical and fundamental analysis approaches. The results of this study indicate that students who have completed the Investment Management course demonstrate a well literate level of investment literacy, with a Respondent Achievement Level (RAL) of 78.7%. The comparison between the Project-Based Learning (PJBL) and non-PJBL educational methods revealed no significant difference in students' investment literacy levels. Both methods yielded statistically comparable outcomes.

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