

# Real Data, Real Learning: Experiential Learning Strategies in Corporate Finance Education

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## ABSTRACT

Theory and practice in corporate finance education are often disconnected. Prior research on Problem-Based Learning (PBL) in finance holds some potential, but the evidence for the influence of experiential, data-driven tasks on students' conceptual understanding and data literacy remains under investigated. The study adopted Kolb's Experiential Learning Theory and analyzed a PBL project using 59 accounting students representing equity analysts at a Malaysian public university to implement the Efficient Market Hypothesis (EMH) on actual Bursa Malaysia event data. The study is qualitative in design. Descriptive statistics were used to summarise student endorsement of the project, and written reflections collected over five months in 2024 were analysed thematically. Two research questions guided the analysis: (1) how the project shapes students' understanding of EMH and related corporate finance concepts; and (2) how it influences students' data literacy, including their use of spreadsheets to analyse and interpret investment outcomes. Results demonstrate strong support for the intervention, with 91.5% of students recommending the project for future cohorts. Six themes were identified: authentic relevance, improved analytical skills and data-handling, theory-to-practice transfer, increased self-confidence and decision-making, stronger communication and collaboration, and perceived deficits in instructional scaffolding. Results show that a systematic interaction with real market data deepens conceptual understanding and enhances the competence of the quantitative evidence used, making visible the design features that can be improved. The study introduces an EMH-based PBL model for corporate finance modules and proposes design protocols for finance educators desiring to cultivate both technical proficiency and workplace skills through experiential techniques.

**Keywords:** Corporate finance education, Experiential learning, Data literacy, Higher Education

## INTRODUCTION

The gap between theory and practice in corporate finance programs has long been a concern for educators and employers. Although lectures teach students basic concepts, classroom instruction often stops at procedural thinking, decision-making, or teamwork, which are increasingly important in finance. Hence, graduates leave university with solid theoretical knowledge but limited experience in synthesizing data, comparing investment alternatives, and making rational decisions under uncertainty. Studies in finance and accounting education report weak development of higher-order thinking, communication, and teamwork skills, despite their importance in contemporary finance work (Hmelosilver, 2004; Sousa & Costa, 2022). These concerns highlight the need for curricula centred on authentic tasks, real-world datasets, and structured opportunities for sustained learning.

Theory and practice education gaps have recognized frameworks of experiential learning theory and authentic learning models. Within, these PBL, or problem-based learning, entered the educational discourse as an educational model that centres on and promotes active and self-regulated learning, learning supervised in collaboration with others to solve and learn from problems, and inquiry learning (Stanley & Marsden, 2012; Silva, Bano, & Daugherty, 2018). PBL has exposed students to authentic problems from their real lives that

correspond to the multidimensional and complex problems they will encounter in their future careers. Learners connect disciplinary knowledge, dispute their assumptions, reach consensus, and justify their position. Positive relationships have been reported between skills development through PBL and outcomes such as critical thinking, analytical reasoning, self-directed learning, motivation, and relevance (Sugeng & Suryani, 2020; Hmelo-Silver, 2004), as noted in previous work in finance and related disciplines. All together, they are closely aligned with advanced corporate finance curricula, especially in capital-budgeting analysis, market inefficiency and market anomaly assessments, and optimisation of discretionary resource allocation, which all feature analytical and normative ambiguities. Such structures are critical for Problem-Based Learning (PBL). It is essential to note that, although PBL is being introduced into corporate finance education, it also presents a range of problems to be solved.

In addition, students, including those with less quantitative skills, face difficulties when learning basic concepts that cannot be solved independently (Sugeng & Suryani, 2020; Silva et al., 2018). This highlights the necessity of building finance classes with a high level of self-determination as well as guidance. In addition, poorly designed tasks and the unbalanced composition of the groups result in high activity and low reasoning power, as well as low motivation and unequal participation (Borah et al., 2023). PBL, combined with traditional teaching methods and curricular design, illustrates that a holistic and integrated approach to teaching is needed. The intentional structuring of courses like this aims to facilitate the understanding of cognitive concepts embedded in finance courses and reduce performance gaps. Despite widespread discussion of enhancing accounting and finance courses, their curricula remain firmly rooted in lectures and textbook problems. Graduates also say they struggle to understand actual financial information, use principles like EMH and market behaviour to make decisions in uncertainty.

Most existing works on finance pedagogy discuss definitions of active learning methodologies, whereas very little design-informed research demonstrates the impact of structured PBL, using real market data, on the development of data literacy and higher-order capabilities. This gap is the current motivation of the thesis, which considers how a data-driven PBL project in a corporate finance module addresses the gap between theory-based content and the relevance of professional skills. The aim is to explore how PBL, interacting with actual capital-market data, contributes to the acquisition of real data literacy, analytical reasoning, and conceptual understanding of economic fundamentals, with a focus on the Efficient Market Hypothesis (EMH). The second goal is to investigate how students perform with PBL blended with targeted instruction and conventional teaching techniques, including perceived relevance, working collaboratively within the team, and confidence in working with market information.

Following Kolb's Experiential Learning Theory (ELT), the study addresses two questions; (RQ1) How do students describe the impact of a PBL project using authentic Bursa Malaysia data on their understanding of key corporate finance concepts such as EMH and market anomalies and (RQ2) How does participation in the project impact the students' data literacy, including data interpretation, use of spreadsheet-based analysis, and evaluation of investment outcomes. The study is structured as follows: the next section presents a literature review, the subsequent section outlines the research methodology used, and the findings are then discussed. The last section of the study presents the conclusion.

## LITERATURE REVIEW

### Kolb's Experiential Learning Theory as a Framework for Learning

Kolb's Experiential Learning Theory fits well within the framework of embedding pedagogy within a course, given its influence within the field. The learning process has four stages and begins with the Concrete Experience, where the learner engages with the material. Then, the student reflects on the experience through Reflective Observation. The next two stages are where the learner synthesizes and plans through the Abstract Conceptualization stage and then tests their work through Active Experimentation - where they engage with the real world. This process forms a cycle of learning and understanding, facilitating knowledge transfer (Kolb, 1984).

Due to the hands-on learning styles of accounting and finance, experiential learning has been adopted by other disciplines to meet industry needs that require graduates with versatile and hands-on skills (Gittings et al., 2020; Rajeevan, 2020). Rather than traditional lectures, teachers use case studies, live projects, or simulations, which place students in the role of using real decisions. This enhances the cognitive domain, as well as teamwork and communication, which are in-demand soft skills in the industry.

Involving finance students in the analysis of historical trading data using statistics is an example of assignment integration outlined by Pan et al. (2016). The process is a perfect example of Kolb's cycles. The students started by working with the data (Concrete Experience). Afterwards, they iterated through multiple stages of the cycle by reflecting on the results, theory, and application of the results through decisions. Van Akkeren and Tarr (2021) also demonstrated to students how regulatory frameworks can be combined with ethical judgment through reflective and real-world experiential projects.

There were improvements in academic attainment and understanding of the concepts by Leal-Rodríguez and Albort-Morant (2019). Flynn and McCarthy (2016) reported that the integration of theory and practice in a real corporate finance project spurred students to engage. Data literacy and skills in interpretation were also addressed using Kolb's model, as explained by Olsen (2024), with a focus on IPOs and similar tasks. The resultant data is representative of how experiential learning increased the ability to bridge theory and practice in developing reflective thinking. Research suggests that experiential learning enhances students' analytical reasoning, reflective practices, and collaboration skills (Ahmed, 2019; Tran & Herzig, 2024). In simulated and real-world finance problems, Sousa and Costa (2022) and Bakoush (2022) observed that students display more motivation and a higher level of engagement.

Etling et al. (2023) demonstrated that group work facilitated the development of soft skills among finance professionals. They are technology-driven and have an equal potential to open up new opportunities for students. Kottara et al. (2025) discuss the importance of blended learning environments that combine digital simulations with collaboration to utilise complex data sets and to prepare students with analytical skills and technology in a professional environment. Still, challenges remain. Underdeveloped cooperative activities may lead to differential efforts, confusion, and time burden (Butler et al., 2019; Tran & Herzig, 2024). Lacking proper support, students with lower quantitative competencies are at risk of failing to comprehend fundamental concepts (Sugeng & Suryani, 2020; Silva et al., 2018). With these gaps in mind, Borah et al. (2023) support a hybrid approach that combines experiential learning with a more traditional learning model. This way, students acquire both practical skills and relevant theoretical knowledge.

### **Application of ELT in The Current Study**

This study applies Kolb's ELT as the framework. Following the completion of a PBL project wherein participants analyzed four years (2019–2022) of stock prices, students then carried out event studies, and finally, they interpreted the findings in the context of the EMH. All four of Kolb's learning cycles were incorporated into the project. These cycles include Concrete Experience (real market data), Reflective Observation (the results and EMH), Abstract Conceptualization (the theory), and Active Experimentation (the practical investment advice). To solve numerous problems, a model was created that included scaffolding templates, instructions, and collaborative learning, allowing students to work on a more advanced, levelled task while still utilising their basic skills. This research, in the context of Malaysian higher education, aims to investigate the role of ELT in integrating real-world data into finance teaching, a relatively underexplored area in South East Asia.

## **RESEARCH METHODOLOGY**

The sample from our investigation consisted of 59 accounting students enrolled in a corporate finance course at a university campus in Malaysia. In groups, during the time period March to July 2024, the students selected a publicly listed Malaysian company, acquired the stock price information on the Malaysian company from 2019 to 2022, and conducted an event study to analyze the effect on the stock market of the company's announcements. Each team had to justify its results using the Efficient Market Hypothesis (EMH)

The students were given an extensive description of all their tasks, datasets, and templates, but were also allowed the discretion to explore how they would like to analyse the data. It allowed students to practice making autonomous decisions, a critical skill for a finance career. These two elements helped students sharpen their analytical abilities alongside their professional judgement! It enabled students to select the depth to which the investigation could proceed and personalizability of engagement and skill development based on their learning preferences (Mavruk, 2025; Pereira et al., 2020). Students also acquire professional communication, negotiation and teamwork skills, which are necessary in finance, when they work as a group.

The skills development was measured using surveys composed of both closed-ended and open-ended questions (Syahril et al., 2021; Uotila et al., 2023). Closed responses were reported with descriptive statistics. Open-ended responses were imported into ATLAS.ti and analysed thematically as used in current experiential learning research work. The stages of the methodological framework for developing data literacy skills are outlined in Figure 1. The objective of this initiative is to utilise real financial records from Bursa Malaysia, gradually exposing students to real-world data experiences.

1. Exposure (Concrete Experience) - Students should gain an understanding of data structures and be able to apply this knowledge to new data or real-world scenarios.
2. Exploration (Reflective Observation) - The data will be analysed and visualised using statistical and spreadsheet tools. The students would use statistical or spreadsheet tools to notice patterns, outliers, and associations. They will observe and analyse the data as it is processed. Students are to reflect with some guidance and develop preliminary interpretations and awareness of the data behavior.
3. Conceptualization (Abstract Conceptualization) - Students relate the patterns with the financial theories and the Efficient Market Hypothesis. EMH will be the touchstone to this phase where the students interpret the theoretical assumptions and articulate how the empirical evidence supports or challenges the theory.
4. Application (Active Experimentation) - Theoretical knowledge helps students complete advanced tasks. Hypothesis testing, portfolio simulations, and market studies strengthen data literacy through practical problem-solving.
5. Reflection and Evaluation (Meta-Cognitive Integration) - Students analyze their work and determine the strengths and challenges. They will assess themselves with the goal of growing data reasoning and confidence, while the feedback will help them reflect. The focus will be analytical processes.

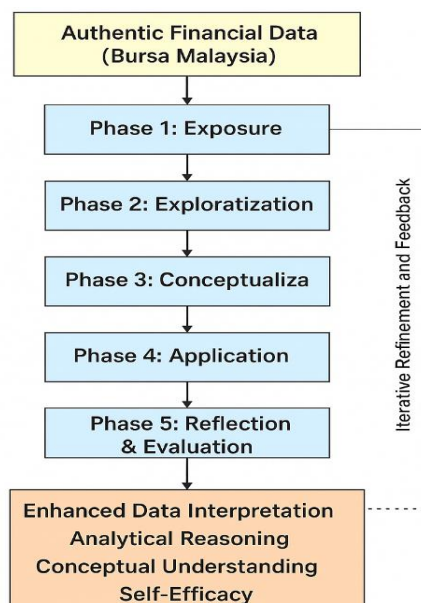


Figure 1. Methodological Process for Developing Data Literacy



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## RESULTS AND DISCUSSION

Overall student feedback for the project was positive, with 91.5% of the students supporting, 5.1% somewhat supportive and 3.4% opposed; unlike the first group, the last two groups were in the minority. Word frequency revealed that the project focused on ‘real world’ “financial” (18) and “efficiency” (16), as well as “financial” (11) “decision” making, at which the students put in major effort since this project was centered on finance. These studies confirm previous research that demonstrates the need to integrate real-world challenges into finance education to maintain students' interest. (Flynn & McCarthy, 2016; Leal-Rodríguez & Albort-Morant, 2019).

### Thematic Insights

Thematic analysis yielded six themes that corresponded to the two research questions and Kolb's Experiential Learning Theory. Themes 1 and 2 address RQ1, specifically the conceptual understanding of EMH and related concepts in corporate finance. Themes 3 and 4 concern RQ2 on data literacy. Themes 5 and 6 overlap as they demonstrate how confidence and cooperation influence the interpretation of concepts and data. Responses to RQ1: conceptual understanding of EMH and market behaviours

### Themes addressing RQ1: Conceptual understanding of EMH and market behaviour

#### Theme 1 (RQ1): Authentic market context and conceptual relevance (Kolb: Concrete Experience)

Students learnt the crux of the knowledge in the context of actual Bursa Malaysia data, which made sense to them and put it in an environment they live in, in the real market. One participant stated that the activity "felt like real analyst work, not just theory." (P12) and another stated that "market trends made the EMH more real." (P18). These comments make it clear that students connected ideas such as EMH and volatility to tangible patterns in world prices, rather than just a theory in their textbooks. Similarly, they reported greater motivation and also a clearer understanding of the relevance of their work. This trend aligns with other research that demonstrates authentic tasks and real-life contexts enhance the perceived relevance and ownership of learning in finance courses (Flynn & McCarthy, 2016; Gittings et al., 2020). In the context of RQ1, Theme 1 displays that exposure to market data was linked to a greater understanding of corporate finance concepts.

#### Theme 2 (RQ1): Theory–practice integration for EMH and anomalies (Kolb: Reflective Observation)

Students reported that the research helped them to connect formal theory with real market behaviour, especially EMH. “EMH felt abstract before; now I try it myself,” one student wrote in a reflection (P04). As another person observed, “the results showed that markets are not always efficient.” These reflections demonstrate that students made a comparison between theoretical expectations and the outcomes of the event study, shifting their learning to meet the expectations. Instead of reiterating the definitions they got of EMH, they reflected on the extent to which price responses would match with efficient pricing, but where anomalies occurred. This finding is consistent with a study by Van Akkeren and Tarr (2021) and Leal-Rodríguez and Albort-Morant (2019), which also found that a more structured engagement with empirical evidence makes students more critical when examining dominant finance theories. For RQ1: Theme 2 describes how students' reflective work with real data facilitated theory–practice integration.

### The following themes relate to RQ2: Data literacy and spreadsheet-based analysis

#### Theme 3 (RQ2): Analytical and spreadsheet-based data literacy (Kolb: Abstract Conceptualisation)

The project-built skills for working with financial data at a higher level of abstraction. Another participant said, “Correlations between stocks make sense to me now” (P14), whereas another reported, “I interpret abnormal returns from events” (P08). These statements demonstrate the transition to Abstract Conceptualisation, in which ‘raw’ prices are transformed into indicators and patterns. They learned how to convert returns, risk metrics, correlation, and output of event studies in Excel into numbers, and what those numbers would mean in investment decisions. This finding is consistent with earlier research, which has

shown that coursework focused on analytics enhances statistical reasoning when it links learning to real-world applications (Pan et al., 2016; Olsen, 2024). In relation to RQ2, Theme 3 demonstrates the importance of data literacy in terms of data interpretation and the ability to analyse data in a spreadsheet format as part of the development of data literacy.

#### **Theme 4 (RQ2): Scaffolding needs for data-intensive tasks (Kolb: Supported movement through the cycle)**

Although students had similar overall positive experiences, they also reported struggles with tools and pacing for experiential activities. While statements like “Excel functions were confusing at first” (P25) and “some step-by-step guides would have helped” (P04) suggest that some guidance was absent. These concerns are also consistent with research suggesting that students may overwhelm themselves and become disaffected from experiential activities when no support is provided for the interaction (Butler et al., 2019; Etling et al., 2023), especially if such students lack adequate technical readiness. Some of these issues might have been solved by using templates and clearer guidelines, but students still asked for clarification on the scaffolding and some of those problems. In response to RQ2, Theme 4 points out that data literacy is more developed when an analytical task is constructed, including graduated tasks for functions as well as interpretation.

#### **Linking understanding and data literacy (RQ1 and RQ2)**

#### **Theme 5 (RQ1 & RQ2): Bringing Confidence and evidence-based decision-making (Kolb: Active Experimentation)**

The project instilled great professional confidence and empowered me to make rational, evidence-based choices. One student even stated, “I back up my recommendations with empirical data.” (P20). Another responded, “My confidence builds when my insights are supported by rigorous analysis” (P2). These comments reflect the Active Experimentation phase, where students develop their ideas and analyse them to justify their investment decisions. These mastery experiences, grounded in Bandura’s self-efficacy theory, explain why students report feeling better prepared to tackle complex financial decisions (Bakoush, 2022). Theme 5 presents an articulation of EMH and its associated concepts in a more confident and concept-based perspective, providing recommendations for RQ1. For RQ2, the evidence suggests that improved data skills led to practical, evidence-informed decision-making, rather than intellectual abstraction.

#### **Theme 6 (RQ1 & RQ2): Collaborative explanation and communication with others (Kolb: Experience + Reflection with peers)**

In terms of conceptual and analytical process, group work (or discussion) was very important for the ways students engaged in the development and expression of conceptual and analytic understanding. As one participant stated, “We argued on assumptions until arriving at the model agreement” (P09). One said, “Explaining my analysis gave me confidence” (P14). These descriptions demonstrate how students employed collaboration to cross-examine interpretations with one another and negotiate models, as well as to transform numerical results into shared narratives. This finding is consistent with past research, which has shown that structured collaborative inquiry promotes more effective learning of soft skills and deeper conceptual understanding in education, particularly in accounting and finance (Tran & Herzig, 2024). More specifically, regarding RQ1, Theme 6 demonstrates that students were able to refine their conceptual knowledge when they explained their interpretation of EMH and anomalies to their peers and gained clarification. With respect to RQ2, communication skills become a bridge between spreadsheet outputs and explainable narratives of investment decision-making.

Table 1. Themes, Representative Student Quotes, and Mapping to Kolb’s Experiential Learning Cycle

Theme	Representative quotes (anonymised)	ELT and RQ link
Theme 1 (RQ1): Authentic	1. “Using actual Bursa Malaysia data helped me see how market news affects	Concrete Experience. Students are immersed in real market data and

relevance (real market context)	<p>share prices.” (P05)</p> <p>2. “Felt like real analyst work, not just theory.” (P12)</p> <p>3. “Market trends made EMH more realistic.” (P18)</p> <p>4. “I finally understood volatility from real examples.” (P07)</p> <p>5. “Authentic data made finance more interesting to me.” (P15)</p>	<p>analyst-type tasks, and thus their learning is grounded in real-life examples of the professional context. This theme informs RQ1 on the way students grasp EMH and EMH-related concepts in the real world.</p>
Theme 2 (RQ1): Theory–practice connection (EMH and concepts)	<p>1. “Applying EMH to our chosen companies was eye-opening.” (P11)</p> <p>2. “EMH felt abstract before; now I can test it myself.” (P04)</p> <p>3. “The results showed markets are not always efficient.” (P09)</p> <p>4. “Linking formulas to actual data improved my understanding.” (P17)</p> <p>1. “This project made EMH feel more real and testable.” (P13)</p>	<p>Reflective Observation. Students revisit finance theory and contrast predictions made by the EMH with what is observed in actual price movements. This theme is directly related to RQ1, which demonstrates how students are able to reconstruct their understanding of EMH alongside market anomalies after completing the experiential tasks.</p>
Theme 3 (RQ2): Analytical and data skills	<p>2. “I learned how to calculate returns and risks in Excel.” (P03)</p> <p>3. “Correlations between stocks now make sense to me.” (P14)</p> <p>4. “I can interpret abnormal returns from events.” (P08)</p> <p>5. “Data analysis felt challenging but rewarding.” (P10)</p> <p>6. “I improved in using descriptive statistics for finance.” (P21)</p>	<p>Abstract Conceptualisation. Students refine their conceptual knowledge of finance and select appropriate methods through quantitative analysis and statistical interpretation. This theme primarily informs RQ2 on data literacy and spreadsheet-based analysis.</p>
Theme 4 (RQ2, with implications for RQ1): Challenges and scaffolding needs	<p>1. “Excel functions were confusing at first.” (P25)</p> <p>2. “More training would make this project easier.” (P08)</p> <p>3. “Time pressure made analysis stressful.” (P12)</p> <p>4. “Some results were hard to interpret without guidance.” (P17)</p>	<p>Supported movement through the ELT cycle. Kolb’s model assumes a balance between guidance and autonomy to manage cognitive load. This theme primarily informs RQ2 by highlighting where data work needs clearer scaffolding, and it has implications for RQ1 because weak support can limit the extent to which students apply EMH and related concepts in practice.</p>

	5. "Step-by-step examples would have helped." (P04)	
Theme 5 (RQ1 & RQ2): Confidence and evidence-based decision-making	1. "I feel more confident making investment decisions." (P06) 2. "Now I can justify my recommendations with data." (P20) 3. "I am less afraid to analyse financial statements." (P19) 4. "Decision-making became easier with evidence." (P16) 5. "I trust my judgment more when backed by analysis." (P02)	Active Experimentation. Students apply conceptual and analytical knowledge to construct and defend investment choices in realistic scenarios. This theme links RQ1 and RQ2 because conceptual understanding and data literacy are both expressed through more confident, evidence-based decisions.
Theme 6 (RQ1 & RQ2): Collaboration and communication	1. "Teamwork helped me understand others' approaches." (P22) 2. "Explaining my analysis improved my confidence." (P14) 3. "We debated assumptions until we agreed on the model." (P09) 4. "Group discussions taught me presentation skills." (P06) 5. "Working in a team made me more organised." (P18)	Concrete Experience plus Reflective Observation. Students learn from peers through discussion, feedback, and shared meaning-making. Discussing, giving, and receiving feedback, as well as engaging in meaning-making with others, enables students to learn from their peers. This thematic support informs both RQ1 and RQ2 through evidence showing how communication enables students to understand financial concepts and convert numerical outcomes into a comprehensible investment narrative.

## CONCLUSION

Two research questions guided the investigation into the use of authentic Bursa Malaysia data in a PBL project and its effect on learning in corporate finance. The first research question (RQ1) inquired about how students articulated the effect of the project on their understanding of certain concepts, such as the EMH, capital budgeting, and market anomalies. The second research question (RQ2) examined how the students' data literacy (data interpretation, analytical skills using a spreadsheet, and evaluation of investment results) was impacted by their participation in the project.

With respect to RQ1, the results indicate that the students moved from merely rote learning the jargon to genuinely understanding the concepts and the context surrounding the learning. Students perceived market efficiency, volatility, and patterns of anomalies as empirical problems to be solved rather than merely theoretical problems in a textbook. They expressed that the EMH became more tangible and was easier to test, and they were able to make better connections between formulas and the observable price behaviour of the assets. The project prompted them to question the idealised models often taught when the data encountered is noisy and imperfect. This shift is indicative of a movement from mere theory to the application of theory in a real market, aligning with the principles of experiential and authentic learning.

Another learning outcome focus for RQ2 is the enhancement of data literacy skills for students, with a clear recognition of learning gains in using Excel for calculations related to returns and risk measures, interpreting abnormal returns, and understanding the interrelatedness of numerical results and investment decisions. The students expressed improvements in chart reading, interpreting financial news, and advocating for their



positions, as well as solving analytical problems. Along with their improvements in data literacy, the students noted an increasing absence of structured scaffolding, particularly for those who struggle with quantitative concepts. The data-rich tasks were suggested to be time-consuming and appeared to cause an interpretation burden, indicating that tasks involving data must be built with several support levels to be usable for all students, with minimal to no support at this level.

The results indicate that with the Kolb-aligned, data-driven PBL design, conceptual understanding and data literacy in corporate finance are better supported. The use of genuine financial problems allowed the students to be situated in realistic market situations. The analysis of tasks to be guided allowed for the conceptual generalisation to be supported and the reflection of the higher-order type to be critically evaluated. Self-efficacy was built through the clear and defensible recommendations being obtained and the analysis being complemented by the presentation and collaborative group work. The students, who provided constructive feedback on the design, especially those with more experience in data tasks and whose scaffolding was limited, were the ones who emphasised the value of the tasks most.

The answer provided by this research is twofold. The results of the study show that the respondents, through structured PBL with real market data, developed a more immersive understanding of the core concepts of corporate finance and the ability to conduct, analyse, and interpret financial data, and thus responded to the two research questions. For curriculum designers, the evidence points to several design priorities: embed live or realistic datasets, make explicit links to key theoretical constructs such as EMH, and provide progressive scaffolding for analytical tools. Future research on employability outcomes, long-term retention of data literacy, and the integration of coding tools such as Python and SQL would help test and extend these findings across modules and institutional contexts.

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## Conflict Of Interest Statement

There is no conflict of interest regarding the publication of this research

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