

Making Accounting Thinking Visible: Visual Thinking Strategies, Generative AI and Metacognitive Development in Pre-University Education

Subtheme: Creative and Expressive Practices

Zuliana Zaludin
Heriot-Watt University

Students tend to see Accounting as a boring subject that emphasizes memorization of rules, as opposed to critical thinking. While many students can apply Accounting concepts, they struggle when asked to explain the underlying concepts that inform the financial decision making. This study investigates the ability of Visual Thinking Strategies (VTS) and Generative Artificial Intelligence (GenAI) in helping students' engagement and strengthen their understanding of the concepts as well as their metacognitive skills.

This study was undertaken on pre-university Accounting students during classroom learning activities. Students worked in groups to transform abstract Accounting concepts into visual metaphors, using visuals generated by AI as their starting point. Instead of taking the AI outputs as they were, students were encouraged to evaluate, modify and justify their visuals through peer discussion. AI is used as a tool to aid learning, while ensuring the learning process retained a high degree of human assessment and critical thinking.

There are two examples on the poster. The first is a visual representation of the Going Concern concept and is a comparison of a thriving and failing business. Students used this visual metaphor to articulate the effect of the Going Concern concept on the valuation of business assets, as well as on the financial statements. The second visual shows the Prudence concept with an umbrella shielding the financial statements from uncertainty, highlighting the need for cautious judgement when recognising gains and losses. The students' use of these visualizations helped them bridge the gap from theoretical Accounting concepts to meaningful real-world scenarios.

Data were collected from student-created visuals, written reflections and AI-generated outputs. Analysis focused on identifying evidence of conceptual understanding, reflective thinking and student engagement. Findings indicate that visualisation encouraged students to articulate ideas that would otherwise remain implicit. The visual metaphors stimulated participants to engage in classroom discussions and exposed the participants' misconceptions which could then be addressed collaboratively.

Several themes emerged from the analysis. First, visual representations helped clarify abstract Accounting concepts and improved conceptual understanding. Second, peer discussion encouraged students to consider alternative interpretations, supporting collaborative learning. Third, students demonstrated metacognitive development by monitoring, evaluating and refining their own thinking throughout the activity. Finally, while GenAI can effectively support visualisation and creativity, it should complement, not replace, students' analytical reasoning and academic judgement.

The findings support current literature promoting active learning, visual representation and reflective practice. By integrating VTS with GenAI use, Accounting education can move beyond technical learning towards conceptual understanding. Overall, this study demonstrates that combining VTS with GenAI provides a practical and engaging approach for making Accounting thinking visible.

References:

Giorgino, M.C., Barnabe, F. & Kunc, M. (2023) 'Experiencing with visuals in accounting education: The case of integrated reports', *The International Journal of Management Education*, 21(2), p. 100809.

Malan, M. & Stegmann, N. (2018) 'Accounting students' experiences of peer assessment: A tool to develop lifelong learning', *South African Journal of Accounting Research*, 32(2–3), pp. 205–224.

Sithole, S. T., Datt, R., de Lange, P., & Tharapos, M. (2021). 'Learning accounting through visual representations'. *Accounting Research Journal*, 34(4), pp. 365-384.

Wood, D. A., et al. (2023) 'The ChatGPT artificial intelligence chatbot: How well does it answer accounting assessment questions?' *Issues in Accounting Education*, 38(4), 81–108.

Zhou, A. & Luo, Y. (2025) 'Exploring the impact of Generative AI on Student Learning in Accounting', *Journal of Accounting Education*, 72, p. 100982.