

AI ‘Vibe Coding’ as Engaged Learning: Student Development of Interactive Finance Web Applications

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Abstract

This paper presents an innovative “vibe coding” finance application project implemented in an Advanced Managerial Finance course to strengthen students’ ability to apply core concepts through interactive tool development. While case studies build analytical skills, students often lack experience creating practical decision-support dashboards and fully understanding the underlying calculations. To address this gap, 13 students used AI coding assistants (Grok, ChatGPT, Claude, Replit AI) to build interactive web-based finance tools on platforms such as Replit and Base44, with Streamlit as the primary framework.

Project options included Time Value of Money/Retirement Planning, WACC with sensitivity analysis, DCF/dividend discount valuation, capital budgeting (NPV/IRR with scenarios), portfolio optimization/risk, or instructor-approved topics. Students incorporated real data, added interactive features (sliders, Plotly charts, scenario analysis), and included ethical reflections on model limitations and input manipulation. A key requirement was that students demonstrate, in both their reports and live presentations, how to obtain identical results manually (or in Excel) versus with their tool using the same inputs and formulas. Representative applications ranged from retirement calculators with tax optimization to stock valuation tools, portfolio optimizers, market impact monitors, and share repurchase analyzers. Deliverables included a deployed public URL, 2–3 page report, and 5–7 minute demonstration, with all AI prompts documented in an appendix.

Rubric-based assessment and qualitative analysis of reports and presentations revealed strong gains in conceptual application, technical confidence, and engagement. Qualitative feedback highlighted how “vibe coding” made finance concepts tangible and enjoyable while reinforcing fundamental understanding. This scalable, zero-cost approach offers finance educators a replicable model for integrating AI-assisted application development, manual verification, ethical reasoning, and real-world case analysis into the curriculum.

Keywords: AI in finance education, vibe coding, Streamlit dashboards, active learning, managerial finance pedagogy