Conversational AI for Stock Market Literacy

Alisha khan

STEMinate India

Abstract

Conversational artificial intelligence (AI) has become one of the revolutionary resources of online education and financial literacy. The paper examines the potential of conversational AI apps like chatbots and virtual assistants to enhance the financial literacy of people with limited financial knowledge in the stock-market. This work is a synthesis of pedagogical, psychological, and technological underpinnings of AI-based learning based on the review of interdisciplinary literature in finance, educational technology, and human-computer interaction. The results show conversational AI is capable of: simplifying complex financial concepts; offering customised learning processes; and encouraging user interaction by means of interactive dialogue. Nevertheless, the issues of the accuracy of information, ethical usage of data, and excessive dependence on AI-based insights remain. The paper has ended by highlighting the potential of conversational AI to make financial education more democratic and proposes future studies on incorporating insight on transparency, contextual learning and behavioural finance into conversational systems to achieve sustainable literacy results.

Introduction

It is not the time to be a stock market player; nowadays, institutional investors are not the only participants in the stock market, given the digitalisation of finance and the globalisation of investment platforms. To individual citizens, especially younger adults, to individuals who are gaining economic inclusion, becoming active financial citizens, and making risk-aware decisions, gaining stock-market literacy turns out to be more and more essential (Praveen, 2025). Nonetheless, empirical research always reports widespread gaps in financial literacy and, more specifically, knowledge on the investment-/stock-market-related terms (e.g., risk-return trade-offs, diversification, volatility).

At the same time, the branch of conversational artificial intelligence (AI) has come of age: natural-language processing (NLP) models, chatbots and voice assistants have become integrated into the fields of education and financial services (Z. Chen, 2025). These systems are promising to offer interactive, adaptive and scalable learning solutions between learning materials and one-to-one tutoring. Indicatively, studies indicate that Chat robots that are AI-powered help in personalised learning in educational institutions by assisting with homework, scaffolding and interactive feedback (Guiloj and

Hefe, 2023). Conversational AI in financial education is in line with international goals of financial inclusion and technological democratization. It allows learners to have on-demand explanations, simulates trading situations and builds critical thinking based on conversational feedback loops. Nonetheless, even with such benefits, AI-generated financial advice has not been studied on pedagogical reliability and ethical integrity (Demma Wube et al., 2022). In this paper, a systematic literature review will be carried out to determine the role of conversational AI in improving stock-market literacy. It will aim to analyse how conversational AI can simplify complex financial concepts, fill any gaps and limitations in current AI-based financial-learning systems, and suggest a framework of responsible and effective deployment of conversational AI in the enhancement of financial education.

Methodology

Literature-search Strategy

The review is systematic in that it seeks to identify, screen and synthesise available literature at the cross-section of conversational AI and financial literacy with a particular emphasis on stock-market or investment education. Peer-reviewed articles published in 2018-2025 were searched in academic databases (e.g., Google Scholar, IEEE Xplore, ScienceDirect, etc.). The selection of these databases and search terms was based on the basis that they would offer a broad based coverage of the technical AI research, along with the applied financial literacy literature, such that studies related to conversational AI and investment-education are all included and not limited to those focused on technical backend-architecture research. The following search terms were used: conversational AI, chatbot financial literacy, stock market education AI, investment literacy AI, and financial services chatbots. Inclusion criteria included: (a) the study deals with conversational or chatbot AI; (b) the study deals with financial literacy, investment education or financial services; and (c) the study gives empirical or conceptual results regarding interaction with a user, learning or behaviour. Articles that had no educational or literacy implications and instead were concentrated on the architecture of the backend AI were filtered out.

Data Mining and Generalization.

In the case of each chosen article, the data about the authors, publication date, target area (education or financial services), target audience (students, adults, underserved groups), the type of AI-system (chatbot, virtual assistant, generative AI), the learning outcomes or literacy levels, and the challenges were identified. Such data were synthesised into four sub-themes (1) stock-market/financial-literacy challenges; (2) conversational AI in educational settings; (3) conversational AI in financial services and literacy; (4) gaps and emerging issues in stock-market literacy.

Thematic Analysis

Thematic trends through the literature were found, such as the strengths of conversational systems (personalisation, engagement, accessibility), recurrent challenges (trust, accuracy, regulatory issues, privacy), and the emerging discussions (ethical implications, human burdensome AI hybrid models). Such gaps as: scanty domain-specific stock-market education research, lack of longitudinal findings, and issues with measurement of behavioural outcome, were listed.

Category	Description	Key Examples from Literature
Strengths of Conversational AI	• Simplifies complex investment and stock-market concepts through dialogue. •Provides personalised and adaptive learning experiences. •Enhances learner engagement through interactive, tutor-like communication. •Offers scalable and accessible financial education to diverse populations.	•Chatbots break down jargon such as *beta*, *volatility*, and *diversification* in user-friendly terms (Agarwal et al., 2024). •AI-powered systems adjust to learner pace and prior knowledge, improving engagement (Guiloj & Hefe, 2023). •Conversational AI reaches underserved groups, including migrant workers (Foo et al., 2025).
Challenges of Conversational AI	• Trust and perceived reliability remain major barriers. • Possibility of inaccurate or hallucinated financial information. • Ethical concerns: data privacy, transparency, and safe usage. • Regulatory risks when AI responses resemble investment advice.	• Users express concerns over privacy and security when disclosing financial information to chatbots (Demma Wube et al., 2022). • Generative AI models like ChatGPT may produce errors or non-verifiable claims (Chen, 2025). • Offering financial suggestions may conflict with regulatory frameworks governing investment advice.

Gaps in Current Research	• Users express concerns over privacy and security when disclosing financial information to chatbots (Demma Wube et al., 2022). • Generative AI models like ChatGPT may produce errors or non-verifiable claims (Chen, 2025). • Offering financial suggestions may conflict with regulatory frameworks governing investment advice.	• Most research explores general financial literacy, not stock-market-specific learning (Upadhayay & Bhargava, 2025). • Empirical evidence on long-term learning outcomes is scarce across studies.

Discussion

Breaking Down Complicated Ideas.

The capacity of conversational AI to put into perspective and de-familiarise intricate investment and market ideas by discussion can be viewed as one of its greatest strengths. Chatbots are able to deconstruct jargon (e.g., beta, diversification, volatility) into plain language and scaffold explanations through simulating a tutor-like interaction. As an illustration, a study of AI-based personal-finance assistants indicates that the tools assist their users to comprehend budgeting, expenditure trends and investment risk (Agarwal, Ray and Varghese, 2024).

Individualisation and Learning Engagement.

The conversational AI is capable of adjusting to user pace, preference and prior knowledge particularly in stock-market literacy where the learners have vastly different backgrounds. Chatbots have been observed to offer personalised learning experiences in the education sector, which enhance engagement (Guiloj & Hefe, 2023). This adaptability attribute makes the learners able to ask interactive questions, get personalized answers and even simulate investment scenarios through dialogue that facilitates experiential learning.

Scalability and Access

Financial-education programmes are also frequently affected by scaling problems: expert-training classes, workshops and printed materials can be inaccessible to everyone. The conversational AI presents a scalable platform that provides literacy on scale even to underserved groups such as migrant

workers (Reach Alliance, 2025). This implies that there is a possibility to democratize access to education about investment.

Some of the aspects which can be linked to the trust include, Accuracy and Ethical considerations.

With this promise, there are some vital issues raised. A significant problem is trust and perceived reliability of chatbots in the financial domain. As an example, the systematic review of text-based chatbots in the financial sector suggests that user perceptions, acceptance, and engagement strongly depend on trust, security and privacy concerns (Demma Wube et al., 2022). The generative-AI models, in general, and ChatGPT, specifically, are problematic because of the possibility of errors, delusions and unregulated control (Z. Chen, 2025).

In addition, implementation of conversational AI in the stock market presents other risks: offering investment advice can be interpreted as regulated financial advice, creating liability concerns; the instability of a market suggests that timely information is necessary and risk-disclosure requirements; and students can start over-relying on responses by a chatbot without training to critically evaluate that information.

Gaps in Research

Although there is literature in the area of chatbots in the financial services (customer service context) and in conversational AI in the education sector, more studies exist on stock-market literacy (investment concepts, trading behaviour, market psychology). As an illustration, whereas AI and ML tools are popularized as better in increasing financial literacy and personal investment choices (Praveen, 2025), the researchers do not necessarily touch upon conversational AI or interactive dialogue platforms to educate people about the stock-market. In addition, not many studies have longitudinal outcomes (e.g., does AI-based literacy translate into real-life market participation or to better financial well-being?). Cultural and contextual (emerging markets, language diversity) issues are under-researched as well.

Proposed Framework

Expanding on the above, an imaginary framework is suggested on the implementation of conversational AI to stock-market literacy that has four elements:

1. **Content and Domain Modelling:** Design educational modules, which involve the concepts in the stock market (e.g. market structure, trading instruments, risk management) that are part of the chatbot.
2. **Adaptive Dialogue Engine:** Use conversational AI, which is scaled to user's level of knowledge, and supports follow-up inquiries and simulates interactive exercises (e.g., mock portfolio decisions).
3. **Trust & Transparency Mechanisms:** Incorporate sources, disclaimers and human-in-loop verification to achieve consistency; clearly explain the drawbacks of the tool.
4. **Behavioural Measurement & Feedback:** Monitor user learning curves, attitudes to investing, intentions to behave to examine efficacy when used over time.

This type of framework recognizes the pedagogical possibility, as well as the ethical/regulatory protection that is needed to be put into place in a stock-market literacy environment.

Conclusion

This literature review has examined how conversational artificial intelligence (AI) can be used to make any significant contribution towards enhancing stock-market literacy. The evaluation reveals that conversational AI in the shape of chatbots, virtual assistants and interactive dialogue platforms have a number of promising opportunities: it can make complex investment ideas easy to understand, provides personalised and scalable learning experiences and removes barriers to financial education by providing an accessible on-demand support. Simultaneously, there are major caveats that are not discussed. The factors of trust, precision, regulatory adherence, and data privacy and the string of over-reliance on AI are still on the agenda. Scientific investigation of particular stock-market education through conversational AI is so far limited; a significant part of operation has been on general financial literacy or customer-service chatbots, as opposed to investment learning specifically.

Based on this synthesis, a systematic framework of applying conversational AI in the stock-market literacy setting was suggested comprising: (1) domain-specific content modelling, (2) adaptive dialogue

engines, (3) trust/transparency mechanisms, and (4) behavioural measurement and feedback loops. Longitudinal designs among different populations (particularly in emerging markets), intensive measures of the outcomes of learning and investment behaviour, and systems co-designed with learners should be suggested in future research. Practically, developers and educators must focus on moral design, explicit educational purposes, and sound assessment in order to use the opportunities of conversational AI without becoming victims of its dangers. Overall, conversational AI has a lot of potential to democratise the learners of investment through the realisation of the aforementioned promise but to achieve this promise, meticulous design, critical analysis and further interdisciplinary study will be requisite.

References

Agarwal, V., Ray, R., & Varghese, N. (2024). *An AI-powered personal finance assistant: Enhancing financial literacy and management.* Christ University.

Biller, S. (2025, August 14). How AI can help boost financial literacy for fintech users. *Forbes*. https://www.forbes.com/sites/sarahbiller/2025/08/14/how-ai-can-help-boost-financial-literacy-for-fintech-users/

CGAP. (2025, April 4). AI's promise: A new era for financial inclusion. *CGAP Blog*. https://www.cgap.org/blog/ais-promise-new-era-for-financial-inclusion

Chen, Z. (2025). Revolutionizing finance with conversational AI: A focus on ChatGPT in financial services. *Humanities & Social Sciences Communications*. https://doi.org/10.1038/s41599-025-04725-y

Demma Wube, H., Esubalew, S. Z., Weldesellasie, F. F., & Debelee, T. G. (2022). Text-based chatbot in financial sector: A systematic literature review. *Data Science in Finance and Economics, 2*(3), 232-259. https://doi.org/10.3934/DSFE.2022011

Eleuterio, D. S., Oliveira, P. F., Matos, P., & Alves, J. M. A. (2025). A chatbot to help promoting financial literacy. In *Proceedings of the 14th Symposium on Languages, Applications and Technologies (SLATE 2025)* (pp. 1–10). https://doi.org/10.4230/OASIcs.SLATE.2025.7

Foo, W. Q., Cheng, C., Tsai, A., & Woozeer, A. (2025). Financial literacy for migrant workers through conversational AI: A case study (Singapore Management University). *Reach Alliance Report.* https://reachalliance.org/case-study/how-can-we-utilise-conversational-a-i-to-enhance-financial-literacy-for-migrant-workers-in-singapore/

Gupta, S., Ranjan, R., & Singh, S. N. (2025). A comprehensive framework for evaluating conversational AI chatbots. *arXiv Preprint.* https://arxiv.org/abs/2502.06105

Ng, M., Coopamootoo, K. P. L., Spiliotopoulos, T., Horsfall, D., Aitken, M., Toreini, E., & van Moorsel, A. (2022). In private, secure, conversational FinBots we trust. *arXiv Preprint.* https://arxiv.org/abs/2204.10344

Pelster, M. (2024). Can ChatGPT assist in picking stocks? *Journal of Behavioural and Experimental Finance, 33*, 100686. https://doi.org/10.1016/j.jbef.2024.100686

Upadhayay, A., & Bhargava, J. (2025). Leveraging AI in finance as a catalyst for improving financial literacy and reducing NPAs. *Asian Journal of Economics, Business and Accounting, 25*(9), 422-434. https://doi.org/10.9734/ajeba/2025/v25i9813

W. Chen. (2025). Leveraging conversational AI for adolescent medical financial literacy. In *Proceedings of the Delft Symposium on Dialogue and Gaming 2025* (pp. 45–52). https://doi.org/10.59490/dgo.2025.1020

Cyara. (2023, August 10). How conversational AI and chatbots are transforming the financial sector. *Cyara Blog.* https://cyara.com/blog/conversational-ai-chatbots-financial-sector/