



Financial Translation in the Age of AI: A Meta-Synthesis of Education, Management, and Professional Practice

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Abstract

This meta-synthesis examines how artificial intelligence (AI) and machine translation are transforming financial translation across educational, organisational, and professional contexts. Following Sandelowski and Barroso's (2007) meta-synthesis framework and PRISMA 2020 reporting principles, the study synthesises 30 peer-reviewed studies published between 2020 and 2026. Thematic analysis identified three interconnected domains: educational challenges, management strategies, and professional implications. The findings indicate that AI integration is reshaping translator competence by adding AI literacy, prompt engineering, and human-AI collaboration to established linguistic-cultural, domain-specific, strategic, and professional competencies. In educational settings, AI-supported training, interactive materials, and machine-translation literacy are increasingly incorporated alongside conventional translation practices and human evaluation. At the organisational level, AI enables greater automation and workflow flexibility but also introduces requirements for quality assurance, data security, human oversight, and adaptive governance, particularly for complex financial and regulated documents. Professionally, translation work is increasingly characterised by hybrid workflows involving post-editing, quality assessment, strategic mediation, and continuous technological development. Persistent difficulties with specialised terminology, legal phrasing, cultural appropriateness, metaphors, and factual reliability indicate that AI capabilities remain dependent on task and context. Overall, the synthesis conceptualises AI integration as a socio-technical reconfiguration of financial translation rather than straightforward technological substitution.

Keywords: Artificial intelligence, educational challenges, financial translation, professional implications, translation management

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1. Introduction

Financial translation constitutes one of the most demanding and high-stakes specialisations within the broader landscape of Translation Studies. Functioning as the *lingua franca* of global commerce, investment, and fiscal governance, financial discourse is fundamentally defined by terminological exactitude, legal bindingness, and strict regulatory accountability (Nasri et al., 2023; Nyor et al., 2022; Pshenichnikov, 2025). Any inaccuracy in translating specialised financial terminology whether embedded in audit reports, tax filings, financial statements, or investment prospectuses can precipitate severe misunderstandings, legal inconsistencies, and a profound erosion of stakeholder trust in multilingual financial communication (Evans et al., 2015; Oncevay et al., 2025a; Xoldarova & Abduraxmonov, 2025). Consequently, this practice transcends a mere linguistic exercise, embodying a professional undertaking with direct and material consequences for corporations, investors, regulatory bodies, and the broader macroeconomic environment (Aburous & Kamla, 2022; Georgiou, 2024).

The salience of financial translation has been profoundly amplified by the accelerating integration of Artificial Intelligence (AI) and Machine Translation (MT) technologies into mainstream professional workflows (Shormani & Al-Sohbani, 2025). The emergence of Neural Machine Translation (NMT) systems and, more recently, Large Language Models (LLMs) such as ChatGPT, Gemini, and DeepL has catalysed a paradigm shift within the language services industry (Ataman et al., 2025; Lyu et al., 2024). While these intelligent systems offer unprecedented efficiency, speed, and cost-effectiveness in processing vast textual corpora across multiple languages, their application to financial translation a domain characterised by hyperspecialisation, legal sensitivity, and a zero-error tolerance introduces a complex array of challenges that extend far beyond mere technical capability (Naveen & Trojovský, 2024; Oncevay et al., 2025; Rew & Popova, 2021). The Fourth Industrial Revolution (Industry 4.0) has consequently necessitated a fundamental reassessment of translator training strategies, pedagogical frameworks, and professional methodologies. Within this evolving paradigm, the concept of “Translation 4.0” has emerged, encapsulating the transformative nature of translation practice in an era dominated by intelligent automation, data-driven pipelines, and intricate human-machine collaboration (Alzghoul et al., 2025; Horbačauskienė, 2017; Massey, 2025). At the intersection of linguistic proficiency, domain-specific financial acumen, and strict regulatory compliance, financial translation simultaneously exemplifies the promises and perils of this ongoing digital metamorphosis (Kothari, 2025; Oncevay et al., 2025).

Theoretically, this study is anchored at the interdisciplinary nexus of three primary scholarly traditions: Translation Studies, Educational Technology, and Management Studies. From Translation Studies, we draw upon established conceptualisations of translation competence, particularly the PACTE Group model, and the socio-technical dimensions of translator professionalism. From Educational Technology, we engage with contemporary frameworks of AI literacy, digital pedagogy, and the integration of emergent technologies into specialised curricula (Hazaea & Qassem, 2024; PACTE Group, 2020). From Management Studies, we incorporate critical perspectives on knowledge management, professional development ecosystems, and strategic organisational adaptation to technological disruption. This robust interdisciplinary theoretical foundation enables a holistic examination of financial translation as a socio-technical system wherein technological, pedagogical, and managerial dimensions

are inextricably intertwined, each shaping and being shaped by the others in a dynamic feedback loop (Elgargouh et al., 2024; Hafeez et al., 2025; Thango et al., 2025).

Despite the rapid proliferation of AI-powered translation tools in professional settings and the corresponding growth in scholarly attention, significant lacunae persist in our comprehensive understanding of the educational, managerial, and professional implications of this technological integration (Candé & Martinho, 2026; Cheng, 2024; Yang et al., 2026). Existing scholarship, while replete with technical evaluations of AI performance, has predominantly treated these dimensions in isolation rather than as interconnected components of a unified ecosystem. Technically, substantial and well-documented challenges remain (Peykani et al., 2026; Regona et al., 2024). Empirical studies reveal significant limitations in AI systems' capacity to render specialised financial and legal phrasing with absolute precision. LLMs exhibit persistent issues such as "hallucinations" the generation of plausible yet factually incorrect or entirely fabricated outputs as well as context window constraints and diminished inferential reasoning when confronted with complex financial cases (Chernyshev et al., 2026; Pesaranghader & Li, 2026; Peykani et al., 2025). Even state-of-the-art models demonstrate notable deficiencies when translating highly specialised fiscal and tax terminology, particularly across typologically diverse languages. These inherent limitations unequivocally underscore the persistent and critical need for human oversight, intervention, and substantive editorial judgement in financial translation workflows. Educationally, the integration of AI into financial translation raises fundamental and as-yet-unresolved questions regarding curriculum design, pedagogical approaches, and the precise competencies that future financial translators must develop (Khan, 2025; Naveen & Trojovský, 2024; Oncevay et al., 2025). The advent of generative AI necessitates a comprehensive reconceptualisation of translator education, compelling a decisive move beyond traditional skill sets to encompass AI literacy, prompt engineering, collaborative human-AI workflows, and the critical evaluation of machine-generated outputs (Bahroun et al., 2023; Massey & Ehrensberger-Dow, 2026; Ren & Wang, 2025). However, as Siu (2026) observes, existing studies fail to adequately address how human translators should strategically reposition themselves within the "human-in-the-loop" paradigm of AI-assisted translation, leaving a critical gap in pedagogical guidance. Managerially, the professional translation industry confronts unprecedented challenges in workforce planning, quality assurance, and sustainable business model adaptation. While AI-driven pipelines can significantly reduce turnaround times for financial content, they simultaneously introduce new complexities in project management, risk assessment, and ethical governance. Professional translators and language service providers must navigate the inherent tension between efficiency gains and accuracy imperatives, particularly when handling regulated or high-stakes financial documents. The strategic integration of AI into translation workflows thus demands not only technical proficiency but also strategic managerial foresight and adaptive organisational structures capable of responding to rapid technological change (Okafor et al., 2025; Plaza-Lara & Fuentes-Pérez, 2026; Rogl & Risku, 2024; Wang & Sawyer, 2023).

Critically, however, despite these individual scholarly contributions across disparate fields, no comprehensive meta-synthesis has systematically integrated the educational, managerial, and professional dimensions of AI-driven transformation specifically within the domain of financial translation. The existing literature remains profoundly fragmented along disciplinary

boundaries. Educational research typically published in translation pedagogy journals focuses on curriculum innovation and student outcomes, while management-oriented scholarship often appearing in industry and professional venues addresses workflow optimisation and business strategy. Concurrently, technical studies housed predominantly in computational linguistics and natural language processing outlets evaluate system performance in isolation from pedagogical or managerial contexts. This disciplinary fragmentation not only impedes the development of holistic, integrative frameworks essential for navigating the multi-faceted challenges facing financial translation in the age of AI but also perpetuates a cycle where educational, managerial, and professional responses remain misaligned and suboptimal.

The significance and imperative of this research are therefore threefold: theoretical, practical, and methodological. Theoretically, by providing an integrated, interdisciplinary analysis of AI's impact on a highly specialised translation domain, this study advances scholarly understanding of translation competence in the digital age, the evolving nature of professional expertise in AI-augmented environments, and the complex socio-technical dynamics of technological change within knowledge-intensive professions. Furthermore, by forging meaningful bridges between Translation Studies, Educational Technology, and Management Studies, the research contributes to the growing body of interdisciplinary scholarship on the future of work in an era of intelligent automation. Practically, the findings hold direct and actionable implications for multiple stakeholder groups. For translator educators and curriculum designers, the research provides evidence-based insights into the competencies and pedagogical approaches necessary to prepare financial translators for AI-augmented professional environments. For translation service managers and industry leaders, the study offers strategic guidance on workforce development, quality assurance protocols, risk mitigation, and the organisational conditions conducive to effective human-AI collaboration. For financial translators themselves, the research illuminates the evolving skill sets, professional development pathways, and career trajectories required to thrive in a technologically transformed profession. For policymakers and professional associations, the findings inform standard-setting, accreditation frameworks, and continuing professional development initiatives.

2. Methodology

This study employed a qualitative exploratory meta-synthesis to examine the implications of AI and MT for financial translation, with particular attention to educational challenges, management strategies, and professional implications. The study followed the seven-phase meta-synthesis framework proposed by Sandelowski and Barroso (2007), which provides a systematic procedure for identifying, appraising, comparing, and integrating findings across relevant empirical and conceptual studies. The approach was adopted to move beyond a study-by-study description of the literature and develop an integrated understanding of how AI is reshaping financial translation education, professional workflows, and managerial practices.

The review was guided by questions concerning the factors that shape the teaching, quality, and professional management of financial translation in the context of AI integration, as well as the educational, managerial, and professional strategies identified in the literature for effective human-AI collaboration. The research questions were operationalised in terms of the what, who, when, and how of the review, as shown in Table 1.

Table 1. Research Questions

Research Focus	Parameter
What criteria influence the teaching, quality, and professional management of financial translation in the context of AI integration?	What
Which researchers, educators, translators, managers, and industry stakeholders are addressed in studies concerning effective AI-human collaboration in financial translation?	Who
Which relevant studies published between 2020 and 2026 address AI, MT, financial translation, education, management, or professional practice?	When
How does the literature identify and synthesise educational, managerial, and professional strategies for integrating AI into financial translation?	How

A systematic literature search was conducted in Scopus, Web of Science, ERIC, Education Source, and Google Scholar. The search covered publications issued between 2020 and 2026 in order to capture recent developments in neural MT and generative AI. Searches were conducted in English and Persian and targeted titles, abstracts, and keywords. Search terms were combined across three conceptual groups:

- Financial translation: “financial translation”, “accounting translation”, “tax translation”
- AI and MT: “artificial intelligence”, “machine translation”, “ChatGPT”, “large language models”
- Educational and professional dimensions: “education”, “training”, “curriculum”, “management”, “professional development”

The search and selection process followed the PRISMA 2020 framework (Page et al., 2021). Retrieved records were screened progressively by title, abstract, and full text. The review focused on research addressing the intersection of AI or MT and financial, fiscal, accounting, or corporate translation, particularly where the studies reported implications for education, management, professional practice, workflow adaptation, or translator competence.

The eligibility criteria were established before the final screening stage to ensure that the selected studies were directly relevant to the research questions and sufficiently informative for the synthesis.

Inclusion criteria:

- Studies addressing AI integration in financial, accounting, fiscal, or corporate translation.
- Qualitative, quantitative, or mixed-methods studies reporting findings relevant to educational, managerial, or professional dimensions.
- Theoretical or conceptual studies providing sufficient methodological and analytical transparency.
- Studies reporting information relevant to pedagogical strategies, curriculum design, workflow management, quality assurance, professional development, or AI-supported translation practice.
- Peer-reviewed, full-length publications.
- Studies published between 2020 and 2026, inclusive.
- Studies providing substantive discussion of AI or MT in translation rather than AI applications unrelated to translation.

Exclusion criteria:

- Studies lacking sufficient information relevant to the research questions.
- Duplicate or substantially overlapping publications.

- Studies lacking an identifiable methodological or analytical framework.
- Non-peer-reviewed publications and outlets that did not meet the review's scholarly requirements.
- Conference abstracts, editorials, opinion pieces, and book chapters.
- Studies whose primary focus was unrelated to AI/MT and financial translation.

The methodological and analytical quality of the retrieved studies was assessed using an adapted ten-item appraisal checklist informed by the Critical Appraisal Skills Programme. Because the corpus included both empirical and conceptual studies, the appraisal criteria were adapted to address the range of study types represented in the review. Each criterion was scored from 1 (very poor) to 5 (excellent), producing a maximum possible score of 50.

The appraisal criteria were:

1. Research objectives: alignment of the study with the objectives of the present review.
2. Up-to-dateness: currency of the data, evidence, and discussion in relation to recent AI developments.
3. Research design: appropriateness and clarity of the research design.
4. Sampling method: appropriateness of the population and sampling procedures, where applicable.
5. Data collection: adequacy and transparency of data-collection procedures.
6. Transferability: potential applicability of findings across languages, institutional settings, or related contexts.
7. Ethical considerations: attention to referencing, data integrity, transparency, and relevant ethical principles.
8. Data-analysis accuracy: rigour and appropriateness of the analytical procedures.
9. Clarity of findings: clarity and coherence of the presentation and interpretation of findings.
10. Research value: contribution of the study to understanding AI-mediated financial translation.

The resulting scores were interpreted using five categories:

- 41–50: Excellent (E)
- 31–40: Very Good (VG)
- 21–30: Good (G)
- 11–20: Fair (F)
- 0–10: Poor (P)

Studies scoring 31 or higher were retained for the final synthesis.

The search process initially identified 190 records. These records were progressively screened according to the predefined eligibility criteria. Studies focusing on general translation, non-financial domains, or AI applications unrelated to translation education, management, or professional practice were excluded during the screening process. Titles, abstracts, full texts, and methodological information were considered in successive stages.

The screening and quality-appraisal procedures resulted in a final corpus of 30 studies that met the relevance, methodological, and quality requirements of the review. Figure 2 presents the overall

selection

process.

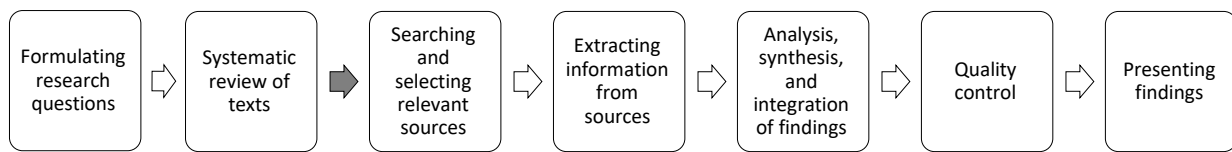


Figure 1. The Seven-Step Meta-Synthesis Model (adapted from Sandelowski & Barroso, 2007)

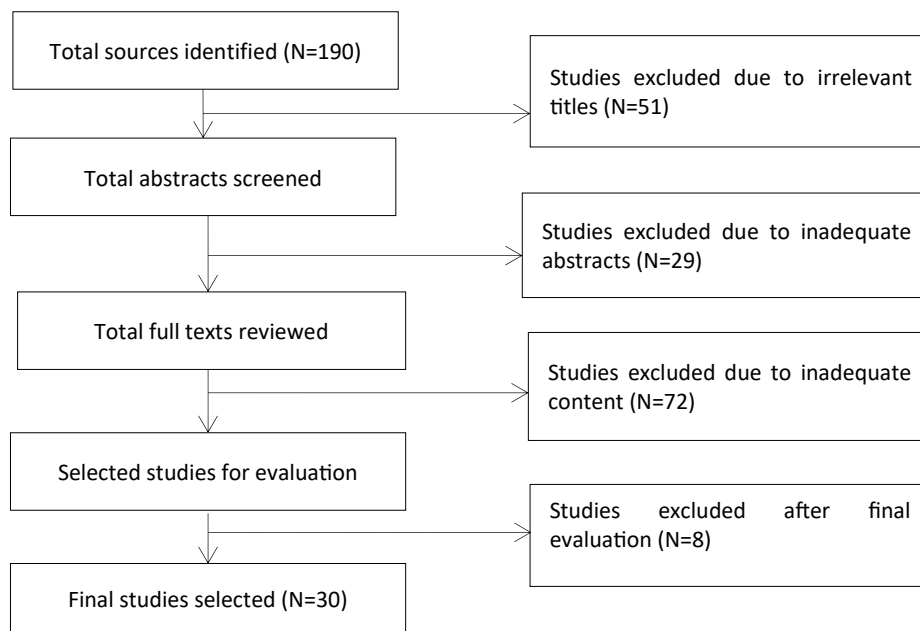


Figure 2. Review and Selection Process

A standardised extraction form was used to record the author and publication year, geographical and institutional context, research design, AI/MT tools, pedagogical or managerial interventions, reported challenges, and outcomes relevant to financial translation.

The extracted evidence was synthesised through three levels of thematic analysis. Open coding identified discrete concepts and issues reported across the studies, including terminological inaccuracies, limited AI literacy, prompt-engineering practices, workflow adaptation, and ethical risks. Axial coding grouped related codes into broader categories, such as technological limitations, curricular gaps, human–AI collaboration, quality assurance, and governance. Selective coding integrated these categories into three overarching domains: educational challenges, management strategies, and professional implications. These domains provided the analytical structure for the findings presented in the Results section.

Two researchers with expertise in Translation Studies and educational technology independently coded the 30 included studies. Inter-coder agreement was assessed using Cohen's kappa in SPSS and yielded $\kappa = 0.897$, $p < .001$, indicating almost perfect agreement according to Landis and Koch (1977).

Trustworthiness was further addressed through Lincoln and Guba's (1985) criteria of credibility, transferability, dependability, and confirmability. Credibility was supported through independent coding and third-expert review. Dependability and confirmability were strengthened through a reflexive record of methodological decisions, coding rules, and interpretive choices, together with an

audit trail. Transferability was supported through detailed reporting of the search strategy, selection criteria, and characteristics of the included studies.

The final corpus comprised 30 studies published between 2020 and 2026. Table 2 presents the studies retained for the meta-synthesis.

Table 2. Selected Articles

No.	Title	Source
1	Translating Finance and Economics	(Chen et al., 2026)
2	Translation Technology in the Age of AI	(Saduov & Banaś, 2026)
3	Generative AI for Financial Translation: Opportunities and Challenges in Hong Kong	(Siu, 2026)
4	Balancing Automation and Human Expertise: The Role of FinTech in Financial Translation Workflows	(Sun & Chen, 2026)
5	Prioritizing translator competencies in the era of artificial intelligence: a Delphi method study	(Yang et al., 2026)
6	AI-Integrated Translation Training and Translators' Competence System Using Neural Machine Translation (NMT)	(Alshaikhi, 2026)
7	Efficiency and quality enhancement for university business English translation teaching using generative artificial intelligence	(Quan, 2026)
8	Human-in-the-Loop AI Feedback in Interpreter Training: An ASR-Based Platform Analysis of Instructor Annotations, Comment Functions, and System Constraints	(Lee, 2026)
9	AI-assisted translation of regulated financial documents: A case study on the auditor's report and memorandum of a French company	(Bouziane & Bouziane, 2025)
10	New-Form Business Translation Teaching Materials: Features, Development Trends and Challenges	(Lu, 2026)
11	Metaphor Translation Revisited in the Age of AI: A Case Study with English Financial and Economic Reports Translated into Spanish and French	(Serón Ordóñez, 2026)
12	Terminological Variation in the Language of Finance and Its Impact on Translation Quality	(Wasilewska, 2026)
13	Language Service Management and Operations	(Yu & Yao, 2026)
14	ChatGPT Prompt Engineering Methods for Financial News Translation	(Pu & Liu, 2025)
15	Artificial Intelligence and Financial Crises	(Danielsson & Uthemann, 2025)
16	AI-Powered Arabic Translation of Business and Finance Acronyms and Abbreviations: Evidence from Gemini, ChatGPT, and Google Translate	(Haider et al., 2025)
17	Using AI in Translation Quality Assessment: A Case Study of ChatGPT and Legal Translation Texts	(Alghamdi & Alotaibi, 2024)
18	Automating translation checks of financial documents using large language models	(Pielka et al., 2025)
19	Artificial intelligence and the transformation of human translation: a study of the translation industry in Jordan	(Al-Tarawneh et al., 2025)
20	Hybrid Translation Production: The Whole-Process AI-Empowerment	(He, 2026)
21	Human Intelligence and Artificial Intelligence in Professional Translations — Redesigning the Translator Profession	(Constantin et al., 2024)
22	FinSentGPT: A universal financial sentiment engine?	(Mahdavi Ardekani et al., 2024)
23	Domain Adaptation for Arabic Machine Translation: Financial Texts as a Case Study	(Alghamdi et al., 2024)
24	Artificial Intelligence in Translation Studies: Benefits and Challenges	(Charles-Kenechi, 2024)
25	AI in the Financial Sector: The Line between Innovation, Regulation and Ethical Responsibility	(Ridzuan et al., 2024)

No.	Title	Source
26	Financial concepts extraction and lexical simplification in Spanish	(Carbajo Coronado & Moreno Sandoval, 2024)
27	Translation, hegemony and accounting: A critical research framework with an illustration from the IFRS context	(Laaksonen, 2022)
28	Translation of International Financial Reporting Standards and implications for judgments and decision-making	(Hellmann & Patel, 2021)
29	Interlingual translation of the International Financial Reporting Standards as institutional work	(Kettunen, 2017)
30	Machine translation literacy instruction for international business students and business English instructors	(Bowker, 2020)

(Source: Research findings)

3. Results

The meta-synthesis of the 30 selected studies produced three overarching domains: Educational Challenges, Management Strategies, and Professional Implications. These domains were derived through open, axial, and selective coding and represent the main areas in which AI and MT are reshaping financial translation education and practice. The thematic structure is presented in Table 3.

Table 3. Three-Level Thematic Analysis of Findings

Second-Level Constructive Theme	First-Level Constructive Theme	Initial Theme
Educational Challenges	AI Literacy and Competency Development	AI literacy as a core competency for financial translators (Siu, 2026; He, 2026)
		Seven prioritized competencies: linguistic-cultural, adaptability, cognitive-emotional, professionalism, technical, project management, domain knowledge (Yang et al., 2026)
		Emphasis on prompt engineering skills for financial translation (Pu & Liu, 2025; He, 2026)
		Human-in-the-loop feedback architecture for translation training (Lee, 2026)
	Curriculum and Pedagogical Innovation	AI-integrated training leads to skill progression with medium-to-large effect sizes (Alshaikhi, 2026)
		GAIT increases students' willingness to use translation tools driven by learning motivation and translation effectiveness (Quan, 2026)
		Machine translation literacy workshops for business students and instructors (Bowker, 2020)
		New-form teaching materials with multimedia-rich content, real-time updates, and higher interactivity (Lu, 2026)
		Scenario-based and AI-responsive translator training models (Yang et al., 2026)
		Balanced theoretical approach between AI tool usage and traditional translation practices (Quan, 2026)
		Rethinking translator training and sustainability of professional activity (Constantin et al., 2024)
		AI in TQA for translator training settings with strategic implementation (Alghamdi & Alotaibi, 2024)
	Quality Assessment and Feedback	High agreement between ChatGPT-4o and instructors' evaluation in TQA ($p > 0.05$) (Alghamdi & Alotaibi, 2024)
		Feedback behavior varies substantially by instructor and feedback category (Lee, 2026)

Second-Level Constructive Theme	First-Level Constructive Theme	Initial Theme
		Corrective feedback as dominant instructional function in interpreter training (Lee, 2026)
Management Strategies	Workflow Optimization and Human-AI Collaboration	Automation manages ~63% of routine document workflows but declines to ~32% for complex financial reports (Sun & Chen, 2026)
		Labor costs decreased from 61.85% to 41.38% but training and security costs increased (Sun & Chen, 2026)
		Modern workflows as modular, node-based systems with dynamic reconfiguration (Yu & Yao, 2026)
		Team structures moving from discrete roles to hybrid human-AI collaboration with new functions (Yu & Yao, 2026)
		Translator role shifting from linguistic executor to strategic mediator (He, 2026)
		Hybrid practice model: human translators as post-editors of machine-generated text (Al-Tarawneh et al., 2025)
		Smaller fine-tuned models outperform large multi-purpose models for automated translation checking (Pielka et al., 2025)
	Quality Assurance and Risk Management	Domain-specific fine-tuning of NMT models on few in-domain segments leads to noticeable improvement (Alghamdi et al., 2024)
		ChatGPT translation quality superior to other models based on automatic and human evaluations (Alghamdi et al., 2024)
		Need for human supervision for accounting judgments, materiality thresholds, and auditor responsibilities (Bouziane & Bouziane, 2025)
		Hallucinations, context window constraints, and limited reasoning capacity in complex cases (Siu, 2026)
		Three-tiered prompt engineering strategy: macro contextual framing, meso logical segmentation, micro lexical clarification (Pu & Liu, 2025)
		Combination of heuristic matching and transformer encoder for automated translation checking (Pielka et al., 2025)
	Governance and Ethical Responsibility	AI amplifies financial system vulnerabilities through superior information processing, common data, speed (Danielsson & Uthemann, 2025)
		Challenges include data privacy, bias and fairness, accountability, transparency, and skill gap (Ridzuan et al., 2024)
		AI governance framework requires rules and guidelines (Ridzuan et al., 2024)
		Translation as contested area of expertise involving multiple, recurrently changing constituents (Kettunen, 2017)
		Regulatory statements and industry-specific demand shape FinTech implementation (Sun & Chen, 2026)
		Ethical safeguards needed for translation reliability in financial contexts (Bouziane & Bouziane, 2025)
Professional Implications	Translator Role and Identity Transformation	AI leads to 40-70% decrease in number of human translators (Al-Tarawneh et al., 2025)
		AI results fully acceptable and competitive with human-generated versions for economic texts (Constantin et al., 2024)
		Translator role redefined from linguistic executor to strategic mediator (He, 2026)
		New hybrid practice: human translators as post-editors (Al-Tarawneh et al., 2025)
		AI not dependable for culturally appropriate or academic texts requiring human input (Al-Tarawneh et al., 2025)

Second-Level Constructive Theme	First-Level Constructive Theme	Initial Theme
	Domain-Specific Challenges and Limitations	Complex and chained metaphors unproblematic for human translators but increase difficulty for MT tools (Serón Ordóñez, 2026)
		ChatGPT shows significant challenges in precisely conveying specialized terminology and legal phrasing (Bouziane & Bouziane, 2025)
		Five primary error types: word choice inaccuracies, syntactic disarray, inappropriate style, cultural mismatches, omissions (Pu & Liu, 2025)
		All AI tools showed some cases of mistranslation of acronyms; Google Translate highest, followed by ChatGPT and Gemini (Haider et al., 2025)
		Vast majority of AI mistranslations stem from literal renderings (Serón Ordóñez, 2026)
		Terminological variation as inherent characteristic of financial discourse with impact on translation quality (Wasilewska, 2026)
		mT5 model detected 96% of terms not manually annotated before (Carbajo Coronado & Moreno Sandoval, 2024)
	Professional Development and Career Trajectories	Targeted professional development in generative AI including AI literacy and collaborative learning (Siu, 2026)
		Business models evolving from labor pricing to platform productization and risk-aware pricing (Yu & Yao, 2026)
		Need to rethink translator training and sustainability of professional activity in economic market (Constantin et al., 2024)
		Technology acceptance model and transaction cost theory for financial translation analysis (Sun & Chen, 2026)
		Cultural adaptability shapes learning experiences and interacts with course design (Quan, 2026)

(Source: Research findings)

3.1. Educational Challenges

The first major domain concerns the transformation of financial translation education. Across the synthesised studies, AI literacy emerges as an increasingly important component of translator competence, but the findings do not reduce competence to technological proficiency. Yang et al. (2026), for example, identify seven competency domains spanning linguistic-cultural competence, adaptability, cognitive-emotional abilities, professionalism, technical competence, project management, and domain knowledge. Similarly, Siu (2026) emphasises AI literacy, while Pu and Liu (2025) and He (2025) highlight the importance of prompt-engineering skills in AI-assisted financial translation.

The studies also indicate a shift towards AI-integrated and practice-oriented curricula. Alshaikhi (2026) reports skill development following AI-integrated training, while Quan (2026) identifies increased willingness to use translation technologies when learning motivation and perceived translation effectiveness are incorporated into the instructional process. Bowker (2020) demonstrates the relevance of MT-literacy instruction for business students and instructors. Lu (2026) further identifies multimedia-rich, interactive, and regularly updated teaching materials as features of emerging business-translation education.

At the same time, the findings indicate that AI integration does not replace conventional translation education. Quan (2026) stresses the importance of balancing AI-tool use with traditional translation practices, while Constantin et al. (2024) call for renewed attention to translator training and the sustainability of professional activity. The literature therefore presents AI integration primarily as a

curricular transformation involving new competencies, new instructional materials, and new forms of interaction between human expertise and technological tools.

Quality assessment and feedback constitute another important educational dimension. Alghamdi and Alotaibi (2024) report substantial agreement between ChatGPT-4o and instructors in translation quality assessment, whereas Lee (2026) shows that feedback patterns vary according to instructors and feedback categories. These findings indicate that AI-supported assessment may provide additional feedback resources, but the design and interpretation of feedback remain dependent on human instructional practices.

3.2. Management Strategies

The second domain concerns the organisational integration of AI into financial translation workflows. The reviewed studies consistently describe a movement towards hybrid human-AI workflows rather than complete automation. Sun and Chen (2026) report that automation accounts for approximately 63% of routine document workflows but approximately 32% of complex financial reports. Their findings also indicate a reduction in labour costs from 61.85% to 41.38%, accompanied by increases in training and security costs. These findings show that efficiency gains coexist with new organisational expenditures.

Yu and Yao (2026) describe language-service operations as increasingly modular and dynamically reconfigurable, while also identifying a shift from discrete professional roles towards hybrid human-AI teams. He (2025) similarly characterises the translator's emerging role as strategic mediation. Al-Tarawneh et al. (2025) identify post-editing as an important component of hybrid translation production. Together, these findings indicate a reorganisation of workflow responsibilities rather than a simple replacement of translators by automated systems.

Quality assurance represents a second management concern. Alghamdi et al. (2024) report improvements associated with domain-specific adaptation of NMT models, while Pielka et al. (2025) demonstrate the potential of automated translation checking using specialised models and hybrid checking procedures. However, the reviewed evidence also identifies persistent limitations. Siu (2026) reports hallucinations and constraints associated with complex cases, while Bouziane and Bouziane (2025) emphasise the need for human supervision in accounting judgements, materiality assessments, and auditor responsibilities. Pu and Liu (2025) further identify prompt engineering as a potential mechanism for improving the management of AI-assisted translation tasks.

Governance constitutes a third management dimension. Ridzuan et al. (2024) identify privacy, bias, fairness, accountability, transparency, and skills gaps as major challenges. Danielsson and Uthemann (2025) further argue that AI can amplify vulnerabilities in financial systems because of the speed and scale of information processing. These findings indicate that AI adoption in financial translation requires organisational rules governing data, responsibility, quality assurance, and human oversight.

3.3. Professional Implications

The third domain concerns changes to the translator's role, professional competence, and career trajectory. Al-Tarawneh et al. (2025) report a 40–70% reduction in the number of human translators in the Jordanian context examined in their study. Constantin et al. (2024), meanwhile, report cases in which AI-generated economic translations were considered acceptable and competitive with human-generated versions. These findings indicate that AI can alter the distribution of translation tasks, although the evidence remains context- and text-type-dependent.

The synthesised studies also identify clear areas in which human expertise remains important. Al-Tarawneh et al. (2025) report limitations in culturally appropriate and academically demanding texts, while Serón Ordóñez (2026) identifies particular difficulties in translating complex and chained metaphors. Bouziane and Bouziane (2025) identify difficulties with specialised terminology and legal phrasing, and Haider et al. (2025) report mistranslations involving financial acronyms and abbreviations. Pu and Liu (2025) identify word-choice inaccuracies, syntactic problems, inappropriate style, cultural mismatches, and omissions among recurring error types.

Professional development consequently emerges as an important response to changing workflows. Siu (2026) emphasises targeted development in generative AI, AI literacy, and collaborative learning. Yu and Yao (2026) describe changing business models involving platform-based services and risk-aware pricing, while Constantin et al. (2024) emphasise the need to reconsider translator training in relation to the sustainability of professional activity. Quan (2026) further demonstrates that cultural adaptability interacts with course design, indicating that professional competence remains broader than technical familiarity with AI tools.

3.4. Integrated Interpretation of the Findings

Across the three domains, the synthesis identifies a recurring dual pattern of opportunity and constraint. AI and MT expand the possibilities for automation, workflow optimisation, training, quality assessment, and professional productivity, while simultaneously generating challenges related to factual reliability, terminology, cultural appropriateness, governance, and human responsibility. This pattern corresponds with Lyu et al. (2024), who report high fluency alongside factual limitations in specialised domains, and with Oncevay et al. (2025), who identify limitations of neural MT in legal and regulatory texts.

The educational findings also extend the competence-oriented perspective of the PACTE Group (2020). The seven competency domains identified by Yang et al. (2026) incorporate technological and AI-related competence while retaining linguistic-cultural, strategic, and domain-specific dimensions. This is consistent with Hazaea and Qassem (2024), who argue that translation pedagogy needs to respond to digital transformation while preserving the interpretive and human dimensions of translation.

The management findings indicate that AI adoption involves organisational change rather than merely technological substitution. The reduced labour costs reported by Sun and Chen (2026) coexist with increased training and security costs, while Yu and Yao (2026) identify changes in workflow structure and professional roles. These findings indicate that effective AI integration requires coordination among technology, workforce development, quality assurance, and governance.

The professional findings similarly point towards hybridisation rather than a simple human–machine opposition. Massey and Ehrensberger-Dow (2026) describe AI as a force that reconfigures translators' professional identities and cognitive labour, while the present synthesis identifies post-editing, quality assessment, and strategic mediation as emerging components of professional practice. At the same time, the findings from Al-Tarawneh et al. (2025), Constantin et al. (2024), and Serón Ordóñez (2026) show that the effects of AI vary according to context, text type, and task complexity.

Finally, the studies addressing accounting and financial institutions introduce a broader institutional dimension. Laaksonen (2022) and Hellmann and Patel (2021) conceptualise IFRS translation as involving linguistic, institutional, and cultural dimensions rather than functioning solely as a technical transfer of information. Kettunen (2017) likewise frames interlingual IFRS translation as institutional work. In an AI-mediated environment, these perspectives suggest that questions of translation quality cannot be separated entirely from institutional responsibility, professional judgement, and the norms embedded in financial discourse.

Overall, the meta-synthesis identifies three interconnected transformations: financial translation education is becoming more AI-literate and practice-oriented; translation management is becoming more hybrid, modular, and governance-dependent; and professional roles are increasingly centred on post-editing, quality assurance, strategic mediation, and continuous technological development. The evidence therefore portrays AI integration as a reconfiguration of financial translation practices across educational, organisational, and professional levels rather than as a single technological intervention.

4. Conclusion

This meta-synthesis systematically examined the educational challenges, management strategies, and professional implications of AI-driven transformation in financial translation, synthesising findings from 30 peer-reviewed sources across four major academic publishers. The analysis yields three principal conclusions that contribute to the theoretical, practical, and policy discourse on AI in specialised translation.

At the micro level of individual translators and educators, the findings establish that AI literacy has become an indispensable competency for financial translators, yet it must be integrated with rather than substituted for linguistic-cultural proficiency, domain expertise, and ethical awareness. The seven competencies prioritised by Yang et al. (2026) Linguistic and Cultural Competence, Adaptability and Lifelong Learning, Cognitive and Emotional Abilities, Professionalism and Ethical Standards, Technological Proficiency, Project Management and Interpersonal Skills, and Domain-Specific Knowledge provide an evidence-based framework for curriculum design and professional development. Educational institutions must move beyond traditional skill sets to incorporate prompt engineering, collaborative human-AI workflows, and critical evaluation of machine-generated outputs. However, the enduring primacy of linguistic-cultural competence cautions against over-prioritising technical skills at the expense of foundational translation expertise. The translator's role is being fundamentally reconfigured from linguistic executor to strategic mediator, a transformation that demands new forms of cognitive labour, judgment, and responsibility.

At the meso level of organisations and translation service providers, the analysis reveals that AI adoption in financial translation is not a straightforward efficiency intervention but a complex organisational transformation. Automation delivers substantial gains for routine documents but demonstrates sharply diminishing returns for complex financial reports, establishing a clear boundary condition for AI deployment. Cost structures are being reconfigured, with labour cost reductions partially offset by increased training and security expenditures. Workflows are shifting from linear, file-centric processes to modular, node-based systems with dynamic reconfiguration, while team structures are evolving from discrete roles to hybrid human AI collaboration incorporating new functions such as prompt engineering, data stewardship, and workflow orchestration. Business models are moving from labour-based pricing to platform productisation, capability bundling, and risk-aware pricing. These changes demand strategic managerial foresight, workforce development initiatives, and adaptive governance frameworks capable of responding to rapid technological change.

At the macro level of the translation profession and broader society, the findings indicate that AI is structurally transforming the translation industry, with documented reductions in human translator demand and the emergence of hybrid practice models wherein translators serve as post-editors rather than primary producers of translated content. Yet AI does not render human expertise obsolete; rather, it redefines the boundaries between human and machine capabilities. Complex and chained metaphors, culturally sensitive content, legally binding financial documents, and accounting judgments remain domains where human judgment is indispensable. The professional implications extend beyond immediate employment concerns to encompass broader questions of professional identity, ethical responsibility, and institutional legitimacy. Financial translation is not merely a technical exercise but a

professional undertaking with direct and material consequences for corporations, investors, regulatory bodies, and the broader macroeconomic environment.

Taken together, these conclusions underscore the need for an integrated, interdisciplinary approach to financial translation in the age of AI. The educational, managerial, and professional dimensions examined in this meta-synthesis are not discrete domains but interconnected components of a unified socio-technical system. Transformations in one dimension have cascading effects on others: changes in translator competencies reshape educational curricula, which in turn influence workforce availability and organisational practices, which ultimately affect professional identity and career trajectories. This systemic interdependence demands holistic, integrative frameworks that transcend disciplinary boundaries and engage with the full complexity of AI-driven change in specialised translation domains.

The study also reveals several areas requiring further investigation. The long-term effects of AI integration on translation quality, professional autonomy, and labour market dynamics remain poorly understood. The cultural and political dimensions of financial translation particularly the potential for AI systems to perpetuate linguistic and conceptual hegemonies warrant critical examination. The sustainability of hybrid human AI translation models, including the psychological and cognitive demands placed on post-editors, merits empirical research. Finally, the development of robust governance frameworks for AI in financial translation, encompassing quality assurance protocols, ethical guidelines, and professional standards, constitutes a pressing priority for policymakers, professional associations, and industry leaders.

AI Declaration

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