

Rethinking Translator Competence in the Age of Artificial Intelligence: Towards a Revised Professional Profile in the Moroccan Context

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Received: 05 / 07 / 2026

Accepted: 13 / 08 / 2026

Published: 29 / 08 / 2026

Abstract: The translation industry is witnessing a rapid proliferation of smart technologies, especially neural machine translation (NMT) systems such as DeepL and large language models (LLMs) such as ChatGPT. This digital wave has strongly agitated the structure of the industry. These transformations have raised serious questions about the new definition of the translator's competence within the digitalized job market. This study aims to propose a revised model for translator competence by reviewing current theoretical frameworks and incorporating empirical evidence from recent studies. This model seizes the opportunities offered and counters the threats posed by AI-driven systems. In line with a body of literature on translator competence, including The PACTE group's 2003 translation competence model and the European Master's in Translation (EMT) Competence Framework (2022), this study argues that the sub-competences targeted in translator training must be considerably restructured in Moroccan higher education. Specifically, this study endeavors to demonstrate that translator training curricula should incorporate expertise in AI, technology, and post-editing. It also stresses the focus on human intelligence, which involves cultural mediation, transcreation, and pragmatic interpretation. This underlines the fundamental human value, particularly the skills that current AI systems cannot replicate. The study concludes by outlining a three-dimensional curricular framework for adjusting translator training to the requirements of an increasingly digitalized translation industry.

Keywords: *Translator competence; Artificial intelligence; Machine Translation; Translation Industry; Translator Training.*

Cite this article: Kasmi, M. (2026). Rethinking Translator Competence in the Age of Artificial Intelligence: Towards a Revised Professional Profile in the Moroccan Context. *MRS Journal of Multidisciplinary Research and Studies*, 3(8),18-22.

Introduction

The translation industry has undergone significant transformations in the digital age. This revolution began with the emergence of statistical machine translation (SMT) in the 1990s, continued with neural machine translation (NMT) tools in the 2010s, and now continues with generative large language models (LLMs) in the 2020s. The translation industry and its employability criteria have been restructured by the structural force of AI. As a result, translators' competence, training, and skills should be reshaped to align with job market demands.

The pace of change has never been as swift as it is today. In 2022, OpenAI's ChatGPT marked a revolutionary leap in AI automation, demonstrating higher efficiency than the old MT tools in translating texts from different domains; this is unprecedented in machine translation history (Penet et al., 2026). This rapid proliferation of AI in the translation industry increases the fears of many practitioners. Frey and Llanos-Paredes (2025) found that for each one-percentage-point increase in machine translation usage across US labor markets, translator employment growth declined by approximately 0.7 percentage points.

Meanwhile, research constantly demonstrates that human intelligence is an irreplicable factor in the process of translation, which AI tools repeatedly fail to replicate. Similarly, human translators evidently outperform even the most advanced NMT systems in cultural mediation, pragmatic nuance, ethical responsibility, creative transcreation, and management of domain-

specific specialized knowledge (Prieto Ramos, 2024; Constantin, Pop, & Sim, 2024). The challenge, then, is not whether the profession will survive AI but how translator competence frameworks and training curricula must be redesigned to ensure that graduates remain professionally relevant and economically competitive in a market increasingly mediated by automation.

This article makes three principal contributions to the ongoing discussion on translator competence in the Moroccan professional and academic context. First, it provides a critical synthesis of current competence models and their adequacy in the context of generative AI. Second, it reviews empirical evidence on how the job market for translators is being restructured by AI adoption. Third, it proposes a revised three-dimensional competence framework, which can guide curriculum design in Moroccan university translation programs and inform continuing professional development (CPD) for in-service translators.

Literature Review and Theoretical Background

Translator competence models revisited

The widely recognized translator competence model was introduced by the PACTE research group in 2003 at Universitat Autònoma de Barcelona. According to this model, translator competence consists of five interconnected sub-competences as well as psycho-physiological components. The bilingual sub-competence consists of pragmatic, linguistic, textual knowledge

about the two languages. The extra-linguistic sub-competence encompasses bicultural and encyclopedic knowledge. The knowledge about translation sub-competence involves translation processes, methods, theories, procedures, etc., which are the key principles that guide translation. The instrumental sub-competence is related to translation aids, and strategic sub-competence is made up of the skills that are effective for solving problems in the process of translation. The psycho-physiological components are threefold: The cognitive components, which involve memory, perception, attention, and emotion; the attitudinal aspects, which consist of intellectual curiosity, perseverance, rigor, and the ability to think critically; and the abilities, which include creativity, logical reasoning, analysis, and synthesis (PACTE, 2011). The model was empirically validated through a series of process-oriented studies that compared expert and novice translators (Hurtado Albir, 2017). Based on this model, translation competence is not all about linguistic knowledge but is predominantly procedural expertise that brings together a complex system of knowledge.

Although this model is foundational to translation pedagogy, the instrumental sub-competence, which is defined as predominantly procedural knowledge related to the use of documentation resources and communication technologies (PACTE, 2011, p. 4), does not reflect the digital revolution in the industry and does not capture the AI skills required in professional translation workflows. Therefore, translator competence should be updated based on what technological competence entails.

In 2022, the European Master's in Translation (EMT) network published an updated competence framework for the period 2023–2028. According to this framework's updates, the technology competence not only includes CAT tools and translation memories, but also machine translation post-editing (MTPE), corpus tools, and quality assurance software (EMT Board and Competence Task-Force, 2022). The framework explicitly acknowledges that 'technology has an ever-increasing impact on the way translation services are performed' while insisting that 'human intelligence, knowledge, and skills are still the key factors in delivering quality translations' (EMT Board and Competence Task-Force, 2022, p. 2).

These updates, developed by the EMT 2022 framework, underscored significant improvements in translator competence, but critics argue that they still do not match the pace of technological change. Prieto Ramos (2024) conducted a study on translator competence requirements in the translation of documents in legal institutions, where he surveyed 474 professionals from 24 international organizations. He found that respondents attributed significant importance to technology-related competence, particularly skills related to MTPE quality assessment, AI tool evaluation, and data security awareness. Therefore, it is obvious that academic frameworks, such as the EMT, do not match the job market realities in Morocco and abroad.

The rapidly evolving digital trend requires translators to adapt to technological changes in the age of AI. Several studies have sought to empirically identify the competences required to meet the expectations of the modern translation job market. Yang et al. (2026) identified seven core competencies for translators in the age of AI. Linguistic and cultural competence received the highest ranking, followed by adaptability and lifelong learning, cognitive and emotional abilities, professionalism and ethical standards, and technological proficiency (Yang et al., 2026).

Essentially, they emphasized the importance of adaptability and lifelong learning competence, which was discarded in previous frameworks. This creates an urgent need to update these frameworks to keep pace with the rapidly evolving AI tools employed in translation studies.

Similarly, the European Language Industry Survey (ELIS, 2024) concluded that translators' skills are no longer confined to linguistic knowledge. According to this survey, the highly required skills in the translation industry are related to technology, terminology management, project management, and post-editing and evaluation of MT output. In another survey of Polish translators, it was highlighted that the main concern of professionals was AI (Łukasik, 2024). Due to the negative impact of AI on the translation profession, the most available jobs for translators are post-editing the MT outputs, which are poorly remunerated. This status quo puts translators at risk of losing their status as 'experts in language and intercultural communication' and degrading their translation competence because of a lack of practice

Artificial Intelligence and the restructuring of the translation job market

The translation industry is experiencing evident displacement due to AI's replacement of human translators. Frey and Llanos-Paredes (2025) conducted a study based on the American Community Survey (2010–2023) and concluded that translators and interpreters are less needed in regions where MT tools are widely adopted. They estimated that 28,000 translation jobs would have been created in the U.S. alone if these MT tools had not been employed. These statistics illustrate that AI has significantly disrupted translators' employability.

In the age of AI, the translation profession has been dramatically reconfigured, as it no longer focuses on transferring texts from the ST to the TL. Owing to these occupational updates, translators must enhance their skills in post-editing and prompt engineering to ensure the quality of translation by reviewing, correcting, and adapting AI outputs. These skills have defining implications for translation training curricula in Moroccan universities, which should involve the competences that will ensure easy integration for translators into the modern translation industry and retain a competitive advantage.

The evaluation of the current translation job market should identify the strengths and weaknesses of AI to provide a comprehensive understanding of the status quo of the translation industry. Sebo and de Lucia (2024) compared DeepL, Google Translate, and CUBBITT performances in translating medical abstracts and found that CUBBITT consistently outperformed the other tools in terms of fluency and contextual accuracy. Cai (2024) demonstrated that ChatGPT-4 produced 'more coherent and readable' translations than NMT models on Chinese-English tasks (p.42).

AI translation systems have demonstrated significant asymmetries between languages and domains. They have performed well when translating high-resource language pairs, including English–French, English–German, and English–Spanish, because the NMT translation quality in these pairs has approached the human level when translating general and non-specialized texts (Naveen & Trojovský, 2024). Nevertheless, they perform poorly on low-resource languages, specialized legal and medical, and other technical domains, which require the reproduction of cultural,

pragmatic, and specialized dimensions of the ST in the TL. The translation of such texts depends heavily on human expertise because AI failed repeatedly to produce appropriate translations (Naveen & Trojovský, 2024; Castilho et al., 2023). This expertise is specifically necessary when translating legal documents, literary texts, and culturally embedded content for professional and ethical reasons (Prieto Ramos, 2024; ISO 20771, 2020). These limitations highlight precisely the competencies on which translator training curricula must capitalize.

Towards a revised competence framework for the age of AI

One of the major skills to be reconsidered in the age of AI is technological competence. First, this must include MTPE for its utmost importance in the translation process. It is a necessary competence that translators should possess. It includes the ability to identify errors in MT outputs, such as mistranslations, omissions, and cultural deviations. It also entails the capacity to opt for post-editing according to the MT output (EMT Board and Competence Task-Force, 2022). Second, another necessary skill is AI literacy, which enables translators to critically evaluate MT content, create well-engineered prompts, fix the repeatedly occurring technical issues of the LLM systems, and, most importantly, make informed decisions about when to use, modify, or discard MT translations (Gordon, 2024). Third, another dimension of technological competence is related to data security, privacy, and ethical use. Professional translators working on confidential documents, such as legal contracts, medical records, and other documents, must be aware of privacy policies and advise their clients on the risks of storing their documents on publicly accessible LLM platforms. This skill was not addressed in previous frameworks and must be integrated into translator training curricula (Sasmita & Marpaung, 2024).

The increasing use of AI in the translation industry has made distinctive human abilities more valuable in the digital age. The focus is more on the competencies that cannot be replicated by MT or AI tools. This includes cultural mediation, creative transcreation, pragmatic sensitivity, and the capacity to manage cross-cultural communication in high-stakes contexts. The communicative and cultural dimensions of translation involve forms of judgement and empathy that cannot be managed by algorithmic tools (Babazade, 2026). Such dimensions are implications to be considered when designing curricula for translation training, especially in literary translation, audiovisual translation, marketing localization, and sworn or certified legal translation; in such translation domains, human intelligence produces successful translations while AI exhibits poor performance.

Since the integration of AI tools and systems in the translation industry, a host of ethical issues must be addressed. Translators must be aware of the protocols of data privacy and the intellectual property implications of data training and AI translations. They should also assume the responsibility for the mistranslation in their post-edited versions. Cui et al. (2025) urged higher education institutions to promote comprehensive curricula to equip translators with modern translation technology skills and skills to reason about the ethical dimensions of AI use.

Adaptability and learning competence is a significant meta-competence that should be promoted to allow translators to continuously develop themselves professionally to adapt to updates in the translation industry. Failure to keep pace with the rapid

technological advancements in the field results in a persistent deficit in training and performance (Moukatib and Ben Seddik, 2026). Therefore, a curriculum designed for translators' training in the AI era must cover current technologies and instill learning strategies, information literacy, and autonomous professional development skills, enabling graduates to stay updated as technologies rapidly evolve. This view is consistent with Yang and others 'placement of adaptability and lifelong learning as the second-highest priority competence, after linguistic and cultural competence (Yang et al., 2026). This also resonates with the broader literature on cognitive capacity and psychological assets that enable translators to adapt and self-develop within the rapidly evolving translation industry (Kornacki & Pietrzak, 2024).

A curricular framework for Moroccan translator training in the AI era

The three-dimensional curricular framework suggested in the previous sections offers implications for translator training in Moroccan higher education institutions. This framework outlines the practical and pedagogical guidelines for translator training programs in Moroccan universities as well as continuous professional development for in-service translators.

The first dimension underscores the technological competence, which has become a prerequisite for professional practice in the translation industry. In the modern translation industry, translators should be competent in computer-assisted translation (CAT) tools and translation memory systems and skilled in both light and full MTPE. In addition, they should be proficient in critical AI literacy, which includes prompt engineering, output evaluation, and error typology for multiple NMT and LLM systems. This competence requires a host of other skills, including quality assurance tools and automated quality metrics (BLEU, TER, MQM), terminology management, data management, awareness of AI ethics, data privacy, and intellectual property frameworks. These competencies should be integrated into university programs as core modules, with a special focus on how to use them productively and critically evaluate their outputs.

The second dimension emphasizes areas of the translation profession in which translators hold a competitive advantage regardless of AI capability. The specialized translation is one of these significant areas, which necessitates careful attention to linguistic and extralinguistic factors, terminology, and typology of each domain. In addition, cultural mediation capacity is another important area, as it requires an appropriate translation of culturally specific terms and pragmatic connotations as well as creative adaptation (Prieto Ramos, 2024; ISO 20771:2020). Translation training programs should capitalize on specialization in these areas, permitting newly graduated students to shape competitive competencies in the digitalized translation industry.

The third dimension involves the meta-competences, specifically continuous professional development, which translators must develop to ensure career sustainability and adaptability in a rapidly growing professional environment. It comprehends project management and entrepreneurial competencies, which allow translators to act as active coordinators in the workplace rather than mere language and culture mediators, client communication and relationship management skills, and continuous self-development through reflective and critical self-assessment. In addition, translators must be well aware of the professional and ethical protocols necessary to navigate

accountability issues, mainly those arising from AI-integrated workflows. These issues include AI error responsibility, data privacy, and professional accountability. This dimension is consistent with findings that claim that adaptability and lifelong learning create top-tier professional competence for translators in the age of AI (Yang et al., 2026). This must be addressed across the modules that are part of the program with practical and real translation tasks rather than theoretical abstraction.

Conclusion

In the age of AI, automated translation tools have become more efficient at transferring texts across languages; however, the value of the human factor remains irreducible. LLM and NMT tools can translate general texts, but they fail to appropriately render specialized texts because of culturally bounded terms, specialized terminology, and pragmatic sensitivity. These texts are context-dependent and require a high level of creativity that cannot be performed by these tools. Up until now, data training cannot replicate what professional translators have accumulated through years of training, experience, and cultural and linguistic knowledge.

The current situation requires a strategic transition to successfully prepare future translators for easy integration into the job market. The inclusion of AI modules in the existing curricula is insufficient, as a comprehensive reconfiguration of goals, content, and pedagogy should be considered. AI literacy, MTPE competencies, and the adaptive meta-competencies will ensure career sustainability for translators through the technological waves that certainly lie ahead.

The proposed three-dimensional framework provides a practical outline for the required reconfiguration of translation programs in Moroccan universities. It is based on empirical evidence from previous studies and frameworks designed by experts and language industry stakeholders. For future research, the validity of this suggested framework should be tested through longitudinal studies of pre-service and in-service translators. They can also take the form of comparative analyses of curricula in different national and institutional contexts.

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