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An Empirical Study of Translation Students' Documentary Research and Use of Information Resources in the AI Era

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Abstract:

This study attempts to look at how Master students in the Institute of Translation and Interpreting at the University of Algiers 2 use documentary research and information resources, both traditional and AI-powered, when translating specialized texts. Drawing upon a mixed-methods design combining a structured questionnaire with some interviews with 10 professional translators, this research explores students' perceptions and practices in relation to traditional resources (dictionaries, encyclopedias, corpora) and AI-based tools. The findings highlight the need to update translator training curricula to foster information literacy, critical thinking, and responsible AI use.

Keywords: Documentary Research ; Information Resources ; Artificial Intelligence ; Information Literacy; Translator Education.

Résumé:

Cette étude s'intéresse aux pratiques de la recherche documentaire et aux ressources informationnelles auxquelles recourent les étudiants en Master de l'Institut de Traduction et d'Interprétation de l'Université d'Alger 2, lors de la traduction de textes spécialisés. S'appuyant sur une méthodologie mixte combinant un questionnaire structuré et des entretiens avec 10 traducteurs professionnels, cette recherche examine les perceptions et pratiques des étudiants en matière de ressources traditionnelles et d'outils basés sur l'IA. Les conclusions soulignent la nécessité de mettre à jour les programmes de formation des traducteurs afin de renforcer la maîtrise de l'information, la pensée critique et l'usage responsable de l'intelligence artificielle.

Mots-clés : recherche documentaire ; ressources informationnelles ; intelligence artificielle ; maîtrise de l'information; formation des traducteurs.

دراسة ميدانية حول ممارسات البحث الوثائقي لدى طلبة الترجمة وتوظيفهم لمصادر المعلومات في عصر الذكاء الاصطناعي

الملخّص:

تتناول هذه الدراسة استخدامات طلبة الماستر في الترجمة بجامعة الجزائر 2 لمختلف أدوات البحث الوثائقي ومصادر المعلومات في ظل التطورات التكنولوجية السريعة وبروز أدوات الذكاء الاصطناعي. كما تستطلع، بناء على تصميم متعدد الأساليب يجمع بين استبيان ومقابلات مع عشرة مترجمين متخصصين، عادات الطلبة وممارساتهم وتصوراتهم والتحديات التي واجهوها فيما يتعلق بالمصادر التقليدية (قواميس وموسوعات ومدونات موازية) والأدوات الرقمية المدعومة بالذكاء الاصطناعي (أدوات الترجمة بمساعدة الحاسوب ومحركات الترجمة الآلية ومحركات البحث المدعومة بالذكاء الاصطناعي). وتُبرز نتائج البحث الحاجة إلى تحديث مناهج تدريب المترجمين لتعزيز الثقافة المعلوماتية، والتفكير النقدي، والاستخدام المسؤول للذكاء الاصطناعي.

الكلمات المفتاحيّة: ترجمة؛ بحث وثائقي؛ مصادر معلومات؛ ذكاء اصطناعي؛ ثقافة معلوماتية؛ تدريب المترجمين.

1. Introduction: The translation landscape has witnessed rapid digital developments and an increasing use of artificial intelligence (AI) that profoundly changed translators' workflows and competencies, as well as their tools commonly used in accomplishing their tasks. This shift poses, in fact, both opportunities and challenges for translator training programs, requiring equipping

students with advanced information-seeking skills and technical literacy in addition to cultural and linguistic competencies. AI has become part and parcel of many fields, including translation, particularly through machine translation (MT), offering quick and easy solutions for any communication process. Traditionally, translators regularly consulted conventional documentary research tools such as dictionaries (paper or electronic), books, journals, articles, and scientific or technical references to extract the information they needed to complement what they already had stored in memory. These resources have long provided lexical equivalents, but at the same time they require in-depth analysis to identify the correct meaning and the ability to ensure consistency of terminology in specialized fields such as economics, medicine, law, and technical sciences.

However, in light of technological transformations, the field of translation has witnessed the rise of numerous programs that assist practitioners and trainees alike through MT of texts and tools that provide translation memories (TM), thereby facilitating their tasks and saving both time and effort. The aim of this research is to shine new light on the increasing integration of tools such as MT engines, large language models (LLMs), terminology databases, parallel corpora, and computer-assisted translation (CAT) systems, in translation curricula, and to highlight the importance of information literacy, documentary research, and critical digital competencies. The study was conducted on a total of 20 MA students from the Institute of Translation and Interpreting at the University of Algiers 2, to measure the respondents' frequency of resource use, familiarity with AI tools, perceived reliability of AI technologies, and their integration into nowadays translation workflows. In parallel, we had interviews with 10 professional translators with experience in specialized fields to capture their real-world documentary research practices as well as the challenges they often face when translating highly specialized contents.

To fulfil the purpose of this study, we attempted to address the following research questions:

1. What are the predominant information resources used by MA translation students?
2. How do students integrate AI tools into their documentary research practices?
3. What challenges and training gaps emerge from such an integration?

2. Information Literacy as a Core Skill: Information literacy, an ability to acquire, analyze, and process information, and to distinguish among sources in terms of quality, authenticity, and

credibility, is a skill that translators must acquire and master in today's world (Massey & Ehrensberger-Dow, 2011). However, the search for information literacy, or for information itself, must always begin from a clearly defined starting point in the knowledge process: namely, the *need for information*, which precedes any stage of information searching. To be information literate, according to Robert Burnheim (1992), there must be an ability to recognize the need for information, as well as the ability to evaluate, locate and use information effectively. Burnheim also stressed that every student who is information-literate must be capable of autonomous learning, knowledge acquisition, and information-seeking, through mastery of a set of practical skills that encompass search strategies, research methodologies, and information quality assessment across various sources.

3. Translators' Documentary Competence: Documentary competence is an essential element in translation workflow, regardless of the type of text or field of specialization. It is an indispensable requirement in the world of translation and constitutes part of a broader concept, namely *translation competence* (Enriquez Raído, 2014). The documentary competence lies in the translator's ability to "handle a variety of reference sources available", to seek solutions to the conceptual, linguistic and terminological problems during the translation process, and to "make effective use of dictionaries, encyclopedias, parallel texts, and other documentary sources—whether print or electronic—as well as human sources, such as experts and specialists" (Berrabah & Bekouche, 2025: 548). The importance of documentary competence has been highlighted in various models of translation competence developed by scholars in the field (Kelly, 2002; Göpferich, 2009a) and by the PACTE research group (PACTE, 2009). According to the PACTE group (2009) and Susanne Göpferich (2009a), *instrumental competence* is considered one of the three sub-competences that make up translation competence. The PACTE group (2009) notes that instrumental competence encompasses prior procedural knowledge of the use of documentary sources and information and communication technologies (ICT) applied to translation. From the above literature, we can discern the importance of information searching and acquisition in the field of translation—an issue that has only recently begun to receive significant attention in translation studies.

Until not long ago, university translation departments did not attach much importance to this aspect. Daniel Gile (2005) notes that academic translation training tends to neglect the dimension of information searching, which is an essential component of professional translation, being limited instead to references to lexicographical sources such as bilingual dictionaries. Similarly, Christine Durieux (1988) addressed the necessity of integrating documentary research into translation pedagogy, and emphasized its crucial role, given the extent of knowledge it provides translators in order to understand and analyze texts and to render meanings accurately—particularly when dealing with specialized terminology in technical fields.

4. AI and translation practice: Technology has brought numerous advances in the field of translation, particularly in text processing, natural language processing (NLP), and the development of neural networks for analyzing, processing, and translating texts. This progress has led to the rise of several tools that facilitate translation, such as DeepL, Google Translate, Bing Translate, and many others widely used in machine translation—not only by a large number of students but also by professional translators, thus resulting in much more productivity and higher quality (Lihua, 2022). In addition to these tools, various translation management systems (TMS) have emerged to support MT processes, including Memsource, MemoQ, and SDL Trados. These are often complemented by project management and publishing tools, further expanding the ecosystem of translation technologies. AI tools have also greatly contributed to the field of translation, with systems such as ChatGPT, Google Gemini, and others providing translations of a quality far superior to that of earlier statistical machine translation systems (SMT) (Bekouche, 2024).

5. Methodology:

5.1 Research Design: This paper is an empirical study that employed a mixed-methods approach consisting of both a quantitative survey, and open-ended qualitative interviews conducted with 10 professional translators in specialized fields.

5.2 Survey population: The questionnaire was administered to 20 MA students in the Institute of Translation and Interpreting at the University of Algiers 2. A total of 10 professional translators with experience in specialized fields were also interviewed as part of this empirical study in order to

capture their real-world documentary research practices as well as the challenges they often face when translating highly specialized contents.

5.3 Data collection and Analysis: The survey included sections on general resource use, AI familiarity, challenges, and perceived training needs. To conduct the study and collect data, we chose an online survey because it is fast and inexpensive, thus reaching more participants than other methods. To analyze survey responses, we used descriptive statistics, and applied a thematic coding and analysis to interview data in order to identify strategies and recurring challenges.

6. Results and discussion:

6.1 Information Resource Usage:

Information Resource	Usage Percentage (%)
Online dictionaries	100%
AI-powered tools	100%
LLMs (Large Language Models)	100%
General search engines	45%
Terminology databases	30%
Corpora	15%
TM tools (Translation Memory)	15%
Printed dictionaries	10%
Academic resources	5%

Table 1: information resource usage by MA students

From the findings above, we notice that MA students highly preferred online dictionaries (100%) over printed volumes, showing their reliance on quick resources like Reverso, WordReference, and Linguee, while emerging AI-powered translation tools (50%) such as Google Translate, DeepL, etc., and large language models (LLMs) (35%) such ChatGPT, Gemmini or Perplexity are gaining ground, likely due to their easy access and fast outputs. For general purpose, search engines (45%) are the heavily used tools, likely for background research. They play a critical role in the specialized translations as they allow us to verify contexts, triangulate meanings, and find real-world usage examples. In contrast, terminology databases (30%), TM tools (15%), corpora (15%), and specialized academic sources (5%) are significantly underutilized, indicating a gap in terms of training in

specialized tools. We have also underlined a dominance of digital and AI resources (100%) over traditional sources, reflecting a deep shift in translation practices towards efficiency, immediacy, and AI assistance when it comes to content generation or linguistic accuracy. Indeed, the 100% use of LLMs such as Gemmini, ChatGPT, and Perplexity signifies that these tools are, to a great extent, integrated tools into students' daily workflows at our universities. On the other hand, specialized TM tools and corpora, though essential in achieving professional, high-quality translations, are underused (15%), suggesting limited training in these complex tools at the MA level.

By asking 10 professional translators about the information sources that they frequently use for their specialized tasks, we found that they also use the online dictionaries (100%). The comparison between students and professionals showed a consistent reliance on such tools. However, MA students depended more heavily on AI-powered translation tools, as compared to professionals, pointing to this strong reliance on automation and fast results. While open to AI, professional translators deal with it selectively and critically as is showed in their interviews, citing that they initially use it for drafts and idea generation, not for final output, before conducting post-editing and carrying out correction tasks. When asked about the information sources used in translation, one of the 10 interviewees, a financial translator with 20 years' experience, said that he usually used LLMs such as ChatGPT, Gemmini, and Claude for glossaries, especially to test conformity of style, adding that he needs to conduct heavy deep post-editing. As of his opinion, he views AI as a productivity booster- not a translator. This aligns with another translator who indicated that he begins by checking reputable bilingual and monolingual dictionaries, then look into specialized terminology databases. If necessary, he turns to domain-specific corpora to examine usage in context. This is, in fact, a very important step in documentary research. Afterwards, he may also consult subject matter experts or colleagues if the term remains ambiguous for him. Another comparison that can be made is on the use of corpora. Professionals extensively use them (70%) to validate meaning in the context, whereas only three students (15%) of 20 used corpora. This difference may lead to say that there is insufficient training in developing investigative strategies that emphasize process over product. Although students are digitally literate in control of tool literacy, they may often lack the critical

digital literacy which allows them to understand when not to trust AI outputs and contents, know how to be able to verify specialized terms, and judge their appropriateness.

6.2 Judicious use of AI and productivity enhancement:

Response Category	Percentage (%)
Strongly Agree	35%
Agree	45%
Neutral	10%
Disagree	5%
Strongly Disagree	5%

Table 2: Judicial use of AI and enhancement of productivity

Data shown in the table reveal that 35% of students (n=7) strongly agree with the fact that the judicious use of AI tools significantly enhances their productivity as translators, while 45% of them (n=9) agree that these AI tools have a strong impact on their productivity. 10% of the students remained undecided, whereas another 10% either disagree or strongly disagree. The students' agreement tends often to handle more specialized and complex texts, which require efficient research of terminology. Moreover, the high agreement levels suggest that students have moved beyond early skepticism, by integrating AI tools into their translation workflow. Professional insights from experienced translators showed that AI is mostly used for rough drafts as quoted by Translator A who said that he mostly uses AI tools for rough drafts—they save him time, but he always revises thoroughly. This aligns with the explanation of another translator who highlighted the importance of AI tools for productivity and the necessity to use them carefully. In this context, we conclude that experience is crucial in choosing when and how to use such tools for time-sensitive, high-quality translations, especially when it comes to post-editing where previous experience is of vital importance.

In conclusion, MA students strongly support the integration of artificial intelligence tools in translation workflows, particularly in terms of improving productivity. The students' perception aligns with nowadays' industry trends, though professionals tend to focus on critical use and human

oversight, stressing the need for translator education programs to find the right balance between teaching MT, AI tools, post-editing skills, and ethical awareness.

6.3 Primary challenges when using AI translation tools:

Challenges Encountered	Number of Students
Inaccuracy / Errors in translation	15
Lack of nuance or contextual understanding	15
Inability to handle highly specialized terminology	14
Over-reliance leading to reduced critical thinking	12
Ethical concerns (data privacy, IP)	10
Difficulty in post-editing AI-generated translations	12
Cost of subscription/access	5
Limited language pairs	6
Other (specify)	1
I do not encounter significant challenges	1

Table 3: Challenges encountered by students when using AI translation tools

The table above highlights the challenges encountered by MA students when dealing with AI tools. It showed that inaccuracy and errors in translation were selected on top by 90% of students (18/20), whilst the lack of nuance or textual understanding was mentioned in the answers of 85% of MA students. A percentage of 70% (14 students) stated their inability to handle highly specialized terminology as one of the challenges encountered, whereas 12 of 20 students (60%) said they encounter difficulties in post-editing AI output. The analysis of these challenges reveals a clear predominance of some concerns related to accuracy among the sample of students. Indeed, a total of 18 students (90%) reported that inaccuracy of AI-generated translations was one of the most common limitations they encountered. This corroborates some literature highlighting that AI-driven systems such as NMT often achieve high fluency, even at the expense of accuracy (Bojar et al., 2016), thus being prone to mistranslation of technical terms, semantic drift, and grammatical inconsistencies, particularly in complex or specialized contexts. Closely following this, 17 students

(85%) stated the loss of nuance and contextual meaning, underscoring that AI is still facing ongoing difficulties when rendering idiomatic expressions, pragmatic subtleties, and any culturally embedded references.

A significant proportion of respondents (n=14) also reported challenges with handling specialized terminology. This finding corroborates research demonstrating the necessity for AI systems to be trained on highly specialized corpora in order to attain domain-specific accuracy in translation (Bowker & Buitrago Ciro, 2019). Moreover, a total of 12 students cited the complexity of post-editing AI output as a barrier. This finding highlights the importance of incorporating a structured training in post-editing within the realm of translation at universities. The aspect of ethical and cognitive considerations was, on the other hand, selected by 11 students who expressed their concerns about over-reliance leading to diminished critical thinking skills, while eight (8) highlighted ethical issues, including privacy, intellectual property, and authorship.

While fewer students reported challenges related to language pair availability (6) and subscription costs (5), these challenges are still considered potential barriers to access. Only one (1) student reported no significant challenges, confirming that AI-assisted translation is not considered a seamless or completely autonomous solution. These findings highlight the need for translator training programs to address the dual requirements of technological proficiency and critical engagement. This aligns with Pym's work (2013), highlighting the necessary skills to deal with statistical machine translation (SMT) and translation memories (TMs) in professional environments. In his work, he insisted on learning to trust and mistrust data, and learning to learn and to revise these data with more attention to detail. Therefore, training should incorporate post-editing proficiency, terminology management, and ethical awareness to ensure that graduates can effectively leverage AI while maintaining translation quality and professional standards.

To get better insights, we cross-compared the students' answers above with some interviews conducted with some professional translators to find out more about their views regarding the question related to the primary challenges or limitations they encounter when using AI tools for translation. The first translator stressed the importance of AI for saving time, warning in the same

time from the serious consequences of its errors in legal terminology. He said that he always has to check line by line. In the field of medicine, names of pathologies or procedures are often mistranslated. Post-editing takes time, especially to avoid ambiguity, as he mentioned this specialized translator. His fear aligns with the response of another technical translator who pointed out that AI doesn't always master technical jargon and sometimes creates imprecise wording that can pose security issues. As of the literary field, the style and musicality of the text can be lost, according to a literary translator, who said that AI does not grasp the creative intent.

Professionals and students share a major observation: inaccuracy and a lack of nuance remain the two main limitations of AI tools. However, professionals emphasize the concrete consequences of these errors in high-risk contexts (legal, medical, technical), while students express these limitations more generally. Specialized terminology is a problem for both groups, but students often associate it with a lack of appropriate resources, while professionals, despite their terminology tools, note that AI struggles to achieve the required level of accuracy.

In contrast, ethical concerns are significantly more prevalent among professionals, who work with confidential documents and are subject to contractual obligations. Students, less exposed to these types of constraints, attach more importance to tool dependency and aspects related to cost or language coverage. Thus, while the perceived challenges overlap, the priorities differ: students focus on accessibility and technical proficiency, while professionals emphasize reliability, terminological accuracy, and ethical risk management.

6.4 Combining AI Tools with tradition information resources

Frequency	Percentage of Students (%)
Never	0%
Rarely	10%
Sometimes	25%
Often	40%
Always	25%

Table 4: Frequency of Combining AI Tools with Traditional Resources

The table above illustrates that 40% of students appreciate "often" the integration of AI tools for speed, syntactic help, and vocabulary suggestions, although they still rely on traditional resources

such as bilingual corpora, dictionaries, and domain-specific resources for idiomaticity and accuracy. 25% of respondents show strong tendency to "always" combine AI with traditional resources, representing systematic or frequent use. Their behavior suggests that they are typically involved in research-intensive or highly specialized texts, and only 10% of them do so "rarely," and no student responded "never". This trend confirms students' shift from traditional resources toward a certain degree of hybridization, where AI complements traditional documentary tools rather than replacing them. This complementarity consists in verifying AI-generated translations by using specialized corpora and authoritative dictionaries to fine-tune the MA outputs. The respondents' answers indicate that the combination of traditional resources and AI compensates for the limitations of these tools. More importantly, artificial intelligence tools provide speed and initial suggestions, while corpora, specialized dictionaries, and termbases guarantee contextual reliability and accuracy. This finding is consistent with O'Brien's (2007) and Guerberof's (2009) observations that MT output enables translators to operates at speeds faster than typically achievable and to translate more and more words per hour.

This also highlights that documentary expertise remains essential for validating and enriching automatically generated proposals. However, a minority (10%) report rarely using this combination, citing either a lack of training in the joint use of the tools or a distrust of the AI output quality. Moreover, interviews with the 10 professional translators reveal that the integration of AI tools into their daily translation workflow is primarily driven by the pursuit of efficiency. In fact, the majority reported utilizing these tools as a time-saving measure during the initial translation phase, particularly for rapidly generating a workable draft. However, none consider AI a standalone solution; the human post-editing stage is consistently deemed indispensable for correcting inaccuracies, terminological errors, or stylistic infelicities. Professionals also highlight a targeted and strategic use of AI, frequently combining it with traditional resources such as specialized terminological databases (e.g. TERMIUM Plus) and bilingual corpora. They emphasize that the added value of AI is not solely measured in terms of speed but also in its capacity to broaden the scope of documentary research, while maintaining vigilance regarding the reliability of generated data. Finally, several translators express persistent mistrust towards AI for the translation of texts

with significant cultural, legal, or technical dimensions, where precision and contextualization are paramount.

6.5 AI's impact on translators' professional competencies:

Competency	Percentage of Students (%)
Post-editing skills	80%
Critical thinking	75%
Digital literacy	70%
Domain-specific knowledge	60%
Project management	45%
Reduced linguistic mastery	30%
Other (ethics, copyright)	15%
No change	10%

Table 5: Students' perceptions of AI's impact on competencies

The findings in the table above illustrate that 80% of MA students (n=16) recognized that post-editing is emerging as one of the most widely recognized impacts that AI tools (e.g., machine translation engines, CAT tools with AI integration, or generative AI like ChatGPT) may have on the professional competencies expected of translators today. 15 students (75% of the sample) stated that AI tools, when used correctly, emphasize their critical thinking. Digital literacy follows closely (70%), with 14 students indicating that it is necessary to acquire such a competence, particularly AI interfaces and prompt engineering, etc. This aligns with Shopova's findings (2014) that digital literacy encompasses all sets of competences and skills needed for finding, searching, assessing and handling information and computerized outputs, as well as to Bowker & Buitrago Ciro's findings (2019) about MT literacy which refers to skills to MT-friendliness of a text and suitability of the machine translation tool), plus the capacity to know how and when to modify MT outputs. This finding points out that knowing how to talk to AI, through prompt design and tool adaptation, is emerging as essential as dictionary skills. AI tools can also have moderate impacts on the promotion of a domain-specific knowledge (60%), showing awareness that machine translation/artificial intelligence still struggles in some specialized domains as was mentioned in a study conducted by Castilho et al. (2017a), who found that NMT's performance might still be inconsistent when applied

to different specialized domains. Closely follows the project management/oversight (45%), with 9 respondents amid MA students who might perceive their professional identity expanding beyond pure translation. Moreover, AI tools have lower impacts on the reduction of reliance on linguistic mastery (30%). This suggests that most students still value linguistic expertise, echoing Bowker & Buitrago (2019), who argue MT literacy complements but doesn't replace language skills. Only two students (10%) said that there is no significant change in core skills, reflecting a minority resistant to the "AI disruption" discourse.

In the option "Other" of the question, a minority of students (15%) emphasize copyright/data sensitivity and ethical awareness issues, suggesting a growing recognition of the emergence of new, non-technical competencies due to AI's increasing role in the translation field. While the majority of students focus on skills related to critical thinking, post-editing, and digital literacy, nearly 15% of them do believe that artificial intelligence creates legal and ethical challenges that nowadays' translators must address. In fact, translators should reflect on transparency, fairness and accountability when dealing with AI tools. For instance, being aware of artificial intelligence biases in MT or the risk of over-reliance, in addition to copyright sensitivity and intellectual property rights since most of AI tools use existing texts or corpora. As of data sensitivity, translators must avoid to input sensitive client documents, in order to protect privacy, ensure confidentiality, and guarantee professional responsibility because translators became nowadays "ethical guardians of information" in the era of artificial intelligence.

Through some semi-structured interviews with some professional translators and interpreters, we attempted to highlight different angles and to provide a synthetic analysis of how AI tools can have an impact on their professional competencies as compared to trainee students. In fact, one of these professionals said that AI tools help him save time for initial drafts, although in legal settings, nuance and precision are irreplaceable, suggesting the necessity to do more risk assessment and critical reading of AI outputs. Therefore, post-editing plays a major role in correcting and assessing risks. It has become routine to him, but he is also more careful with confidentiality because most AI engines process texts in the cloud, as he said. In the technical field, a translator with ten years' experience, we asked him if AI tools reduce his need for linguistic mastery. He answered that they

do not really reduce it, highlighting that unit conversions, engineering jargon and technical terms always require human oversight, i.e., the need for post-editing with the help of domain-specific expertise. In this respect, he maintained that AI boosts his productivity, but linguistic mastery is still his strongest competency. In another interview with an experienced translator in literary translation, we sought to figure out if AI tools are relevant in this field. The respondent said that literary translation is about style, rhythm, and cultural allusions, and that AI outputs are often flat. But he experiments with them for rough drafts, then rewrite creatively. The biggest shift is in critical thinking and editorial skills, as he mentioned. A conference interpreter, interviewed whether AI tools change how he sees translation, answered affirmatively, indicating that while his main work is oral, he does written translations too. AI tools change expectations—clients ask for faster delivery because the machine already does it. This shifts his role toward quality assurance and sometimes project management.

By cross-analyzing both students and professional translators' answers, we notice that post-editing is a dominant skill (80% in the survey), followed by critical thinking and decision-making (75%), with more and more professionals, across technical, legal and medical domains, stress post-editing as a new core skill that should be given considerable attention in translation curricula. All these insights match empirical findings by Castilho et al. (2017a), who highlighted the variety of MT performance, thus requiring more human oversight and intervention. Nearly all translators reported being analytical about MT outputs, reflecting risk assessment in such specialized contexts and stylistic judgment in the literary field.

6.6 Translation programs and AI tools:

Response	Number of Students
Strongly Disagree	1
Disagree	4
Neutral	5
Agree	7
Strongly Agree	3

Table 6: Students' perceptions of AI tools integration in translation programs

Findings above show that overall preparedness is moderate**.** With a mean of 3.35 and 50% positive, MA students perceive, in their answers, a partial but in complete level of preparedness. This reflects the growing but uneven incorporation of AI-MT literacy into translator training programs. A quarter of students remained unconvinced, with 25% negative suggesting some notable training gaps such systematic post-editing practice, ethics and data handling, or critical evaluation of LLMs and machine translation outputs. Bowker & Buitrago Ciro (2019) argue for MT/AI literacy as a learning objective, to go beyond simply "using tools" by including why and when to trust MA outputs and how to assess risks related thereto. A neutral bloc of respondents (25%) signal inconsistent exposure to AI across translation courses and uneven assessment practices. Students who answered "agree" report exposure to LLM/MT tools and some PE exercises in translation curricula, but less practice on domain-specific cases (legal, medical, etc.). Central to translator training design are the recurring themes of ethics, client data protection and copyright which are to some extent under-taught in translation programs. This implies strengthening of such skills, and focusing more a structured post-editing training against "ISO 18587" to convert generic "AI exposure" into measurable competence. Embedding AI literacy, according to Bowker & Buitrago Ciro (2019), in translation courses, across: domain adaptation, ethical use policy and prompt engineering, is also of paramount importance to the translation programs, where students defend AI decisions (assess, modify or reject), justify risk mitigation and document sources. In fact, programs that integrate post-editing and machine translation report an improved degree of readiness, while also acknowledge the need for longitudinal, consistent assessment and practice (Guerberof & Moorkens, Ibid.). Training must, therefore, evolve to critical artificial intelligence literacy, including error/bias detection, workflow management and document-level evaluation, areas where students in our survey are still unsure.

7. Pedagogical implications and recommendations: The results obtained in our study show the necessity for educators and curriculum designers at translation departments or institutes to think about incorporating training in evaluating the reliability of information sources. It is also recommended to encourage students to adopt a balanced resource usage, including both general and specialized sources, so as to enhance their translation quality and research rigor. A training gap

was also noticed in the documentary research and information-seeking behaviors. To address this issue, students must evolve from being "passive occasional users" of information sources to become "active strategic information seekers". Emphasis should, therefore, be placed on using parallel corpora, domain-specific terminology databases, and credible multilingual resources. Such a transition is of paramount importance to develop a professional translation competence in a complex and resource-driven translation environment, and to foster "students' cognitive-behavioral competences to conduct effective research and resolve terminological problems" (Berrabah & Bekouche, 2025).

Moreover, to cultivate evidence-based decision-making and rigorous research habits, courses should be designed to require students to justify their translation choices, annotate translations, comment on terminological decisions that document the search process and criteria used for selecting such resources. Embedding these vital tasks within translation curricula can significantly enhance students' information-seeking behaviors or information literacy, contribute to the development of self-reliant translators, and ultimately encourage methodological reflection.

To address this, it is necessary to design and teach a course on post-editing of AI output in order to develop a culture of stylistic refinement and quality control, and to foster a critical mindset ensuring that technologically enthusiastic and professionally underprepared students have "digitally empowered and professionally competent profiles". Furthermore, the integration of ChatGPT, DeepL, and other AI tools into MA translation curricula and students' workflows requires the development of their critical evaluation skills and their source triangulation habits during classes in order to allow them to understand the biases, limitations and ethical implications of AI-generated contexts. This method will also promote hybrid research practices, through encouraging students to justify translation choices using AI-generated drafts and traditional sources (specialized corpora, terminology databases, etc.).

8. Conclusion: The study concluded that MA students highly prefer online dictionaries (100%) over traditional printed versions, and rely on quick resources such as Reverso, WordReference, and Linguee. Emerging AI-powered translation tools (50%) like Google Translate, DeepL, etc., and large language models (LLMs) (35%) such ChatGPT, Gemmini or Perplexity are also gaining ground.

Search engines (45%) are heavily used as tools for general purpose, likely for background research, due to their critical role in specialized translations in order to verify contexts, triangulate meanings, and find real-world usage examples. Terminology databases (30%), TM tools (15%), corpora (15%), and specialized academic sources (5%) are significantly underutilized. It has also underlined a dominance of digital and AI resources (100%) over traditional sources. Indeed, the 100% use of LLMs such as Gemmini, ChatGPT, and Perplexity signifies that these tools are, to a great extent, integrated tools into students' daily workflow at our universities. On the other hand, specialized TM tools and corpora, though essential in attaining professional, high-quality translations, are surprisingly underused (15%), which suggests limited training in these more complex tools at the MA level. In contrast, professional translators were also found to frequently use online dictionaries (100%) for their specialized tasks. The comparison between both groups showed a consistent reliance on such tools. However, MA students are heavily dependent on AI-generated translations, as compared to professionals, pointing to this strong reliance on fast results. While open to AI, professional translators deal with it in selective and critical way as is showed in their interviews, citing that they initially use it for draft and idea generation, not for final output, before proceeding to MT post-editing and carrying out correction tasks.

Professional translators tend to prefer AI tools as solid aids for first drafts, after which they carry out a thorough post-editing to avoid mistakes and use the translation cautiously. In this respect, they consider that AI tools enhance productivity and allow them to attain quick first drafts, though high-stakes translations need more research and focus on the terminology and the context. This cautiousness illustrates that professionals are more experienced in dealing with AI tools as compared to MA students who still lack information literacy. Although AI tools are shifting students' documentary research practices and information-seeking behaviors, these tools are best seen as complementary instruments, underscoring the need for a translator training program that equips university students to navigate, evaluate and integrate resource types in a critical and complete way.

Declaration of AI Refined: This document has benefited from the application of AI-driven tools, including Grammarly and Scholar AI Chat, to refine its linguistic aspects. These tools were utilized to correct grammar and spelling and improve the overall writing style. It is acknowledged that the use

of these technologies may introduce certain AI-generated linguistic patterns. However, the core intellectual content, data interpretation, and conclusions presented remain the sole work of the authors.

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Appendix:

Questionnaire:

<u>Section A: General Information Resource Usage:</u>

1. Which of the following information resources do you most frequently use for your translation tasks? (Please select all that apply).

☐ Printed dictionaries (e.g., traditional paper dictionaries)

☐ Online dictionaries (e.g., WordReference, Linguee, Reverso).

☐ Terminology databases (e.g., TERMIUM Plus, specialized client glossaries).

☐ Corpora (e.g., specialized corpora).

☐ General search engines (e.g., Google, Bing).

☐ AI-powered translation tools (e.g., DeepL, Google Translate, Microsoft Translator).

☐ Large Language Models (LLMs) used for translation-related tasks (e.g., ChatGPT, Gemmini, Claude).

☐ Translation Memory (TM) tools (e.g., Trados, MemoQ, MateCat).

☐ Specialized academic resources (e.g., academic books, peer-reviewed journals, research papers)

☐ Other (please specify): _____

Section B: Technological Advancement & Artificial Intelligence:

2. To what extent do you agree with the following statement: "The judicious use of AI tools significantly enhances my productivity as a translator.".

☐ Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree.

3. What are the primary challenges or limitations you encounter when using AI tools for translation? (Please select all that apply).

☐ Inaccuracy/Errors in translation.

☐ Lack of nuance or contextual understanding.

☐ Inability to handle highly specialized terminology.

☐ Over-reliance leading to reduced critical thinking.

☐ Ethical concerns (e.g., data privacy, intellectual property).

☐ Difficulty in post-editing AI-generated translations.

☐ Cost of subscription/access.

☐ Limited language pairs.

☐ Other (please specify): _____

☐ I do not encounter significant challenges.

Section C: Integration and Perceptions:

4. How often do you combine the use of AI tools with other traditional information resources (e.g., dictionaries, corpora) in a single translation task?.

☐ Never ☐ Rarely ☐ Sometimes ☐ Often ☐ Always.

5. In your opinion, what impact do AI tools (e.g., machine translation engines, CAT tools with AI integration, or generative AI like ChatGPT) have on the professional competencies expected of translators today? Please select all that apply:

☐ They reduce the reliance on traditional linguistic and syntactic mastery.

☐ They increase the importance of post-editing skills, particularly the ability to assess and refine machine-generated output.

☐ They require the acquisition of digital literacy and technical competencies, such as familiarity with AI interfaces, prompt engineering, or tool customization.

☐ They emphasize the need for critical thinking and decision-making skills in evaluating the appropriateness and reliability of AI outputs.

☐ They shift the translator's role toward that of a language services manager, overseeing workflows that include both human and machine contributions.

☐ They promote domain-specific knowledge and research skills, especially in specialized fields where AI tools may lack precision.

☐ They do not significantly change the core skills required of translators.

☐ Other (please specify): _____

6. Do you believe that your translation program adequately prepares you to effectively use and critically evaluate AI tools for translation?

☐ Strongly Disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly Agree