The Status Quo of Translation Technology Tools in Translator Training Programs at Jordanian Universities

Musa A. Alzghoul[1], Jaber Abualasal[2], Tahani S. Alazzam[3], Saif Al-Deen Al-Ghammaz[4], Raghad M. Alzghoul[5]

[1] Assistant Professor of Translation Studies, Department of English, Dean of the Faculty of Arts, Al-Zaytoonah University of Jordan, Jordan. E-mail: malzgho1@binghamton.edu

[2] Assistant Professor, Department of French and English Language and their Literatures, Faculty of Arts, Al-Zaytoonah University of Jordan, Jordan. E-mail: j.abualasal@zuj.edu.jo

[3] Assistant Professor of Translation Studies, Princess Alia University College, Al-Balqa Applied University, Jordan. E-mail: tahani.azzam@bau.edu.jo

[4] Assistant Professor of English Literature, Department of French and English Language and their Literatures, Faculty of Arts, Al-Zaytoonah University of Jordan, Jordan. E-mail: s.alghammaz@zuj.edu.jo

[5] M.A. of Translation Studies, University of Jordan, Jordan. E-mail: rgd8240834@ju.edu.jo

Correspondence: Musa A. Alzghoul, Assistant Professor of Translation Studies, Department of English, Dean of the Faculty of Arts, Al-Zaytoonah University of Jordan, Jordan. E-mail: malzgho1@binghamton.edu

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Abstract

This quantitative study investigates the status quo of integrating translation technology tools in translator training programs at Jordanian universities. Adopting a descriptive approach with a questionnaire, the study explores students' perceptions of various aspects of translation technology tools, focusing on their adoption, ease of use, and impact on learning outcomes. The study sample consists of (400) translation students from the University of Jordan, Mutah University, and Al-Zaytoonah University of Jordan. The study tool is a structured Google Forms survey comprising several factors, addressing specific aspects of TT tools usage. The statistical analysis of the questionnaire data reveals that students generally have a positive perception of translation technology tools in terms of usability, future profession, and learning and development, which increase translator productivity. The findings also emphasize the need for universities to enhance the integration of translation technology tools training, address accessibility issues, and equip students for a technology-integrated translation profession. In addition, it is recommended that educational institutions continue to invest in translation technology tools. Furthermore, the study's implications are reflected in advising collaboration between academia and industry professionals to anticipate and predict future trends and ensure that students are adequately ready to work with emerging tools and workflows.

Keywords: Computer-Assisted Tools (CAT), Jordan, machine translation (MT), training, translation, technology

1. Introduction

The demand for accurate translations within very tight deadlines has grown significantly over the last three decades due to the globalization of businesses, COVID-19, and technological advancements. This growth highlighted the need to integrate translation technology tools to accommodate these increasing demands. Due to the increasing demand, translation technology tools have advanced significantly (Briva-Iglesias, 2023), specifically their use in educational contexts (Al-Mutawa & Izwaini, 2015). Translation technology tools can potentially improve educational experiences in Arabic-speaking countries with linguistic diversity and a high need for cross-language contact (Al-Ghammaz et al., 2025; Al-Hamad et al., 2021). According to Aldossary (2023), translation technology tools encompass a range of tools designed to assist translators in their work, including machine translation (MT) and computer-assisted translation (CAT) tools (Al-Dabbagh & Othman, 2024; Hawamdeh, 2022).

Machine translation (MT) is automatically translating text from one language into another using software algorithms that do not require human participation (Al-Hamad et al., 2021; Khader, 2023). MT systems can be rule-based, statistical, neural, or a combination of these methods, called a "Hybrid," such as Google Translate, DeepL Translator, and Microsoft Translator. Haqamdeh (2022) states that MT tools analyze incoming text and create translations using predetermined rules or statistical patterns.

Computer-assisted translation (CAT) tools are software tools that help human translators with translation (Aldossary, 2023). Mohammadi (2017) notes that CAT tools frequently incorporate capabilities such as translation memory (TM), terminology management (Mahadin & Olimat, 2022), and alignment tools to help preserve consistency and efficiency between translations. Some of the most prominent CAT tools include SDL Trados, MemoQ, and Wordfast. Similar programs allow translators to work more effectively by using previously translated segments stored in TM databases and suggesting terminology and phrases (Aldossary, 2023; Al-Mazrooa, 2018).

Translation theory is widely used in higher education in Arab-speaking countries, such as Jordan. This is especially noticeable in English as a Medium of Instruction (EMI) classrooms, where translanguaging (the use of various languages in a single discussion) is prevalent (Al-Mutawa & Izwaini, 2015). Translation from Arabic into English, specifically literary genre, is often criticized for its numerous challenges (Alzghoul & Alazzam, 2021). This includes cultural misrepresentation, linguistic inaccuracies, and a lack of contextual relevance. Using multiple translation theories—such as literal translation, text-linguistics, and Skopos Theory— can help avoid these issues by providing students with a wide range of translation methodologies and translation technology tools, making their training more thorough and contextually relevant. In addition, before translating a text, students and translators should understand the specific features of the text before translating it (Khasawneh et al., 2025).

The comparison between Machine Translation and Human Translation is a significant area of study (Al-Hamad et al., 2021; Al-Mutawa & Izwaini, 2015). Research indicates that while MT tools, like Google Translate and Babylon Translate, are becoming increasingly popular due to their accessibility, their output often requires human post-editing to ensure accuracy and cultural relevance (Abduljawad et al., 2020; Al-Mutawa & Izwaini, 2015). This is especially true for complex translations involving specialized terminologies and nuanced meanings that apply to Arabic and English translations.

The use of technology in language learning contexts, including translation technology tools, has been found to increase student motivation and engagement (Alassaf, 2025; Briva-Iglesias, 2023). Khasawneh (2023) states that mobile applications and network-based resources are helpful for language acquisition because they provide interactive and contextually rich content. On the other hand, Aldossary (2023) notes that workshops and training events used by educators to utilize these technologies can enhance their confidence and skill in using digital resources for translation teaching.

In this research, we are encouraged to focus on the impact of educational technologies on learning and teaching, as they enhance the overall education-based experience. Additionally, exploring the specific effects of various digital tools on learner attitudes in translation education can provide deeper insights into optimizing educational strategies (Mohammadi, 2017). The continuous development and assessment of both human and machine translation methods are crucial for advancing the field and enhancing educational outcomes (Al-Anazi, 2019). This review underscores the importance of modern technological tools to create a holistic and practical learning environment for translation students in Arabic-speaking regions, including Jordan.

2. Literature Review

Recent literature emphasizes numerous major trends and insights surrounding the use of translation technology in educational settings within Arabic-speaking cultures, notably concentrating on the benefits and problems of incorporating such technologies into the curriculum (Abushihab, 2020). For example, Al-Hamad et al. (2021) have examined the key factors influencing the adoption of Google Translate in higher education in Jordan. The research adopts the traditional Technology Acceptance Model (TAM) by incorporating additional variables such as perceived usefulness, ease of use, and facilitating conditions. The findings highlight that perceived usefulness and ease of use significantly impact the acceptance of Google Translate among students, while facilitating conditions and technological support play crucial roles in successful integration.

On the other hand, Aldossary (2023) explores how translator training at Saudi universities prepares students to use CAT tools. It reveals a significant gap between academic training and market needs, with insufficient applied courses and training in CAT tools. Most instructors lack practical experience with translation software, and students report a shortage of translation labs and software. The study recommends integrating more practical training and technology into curricula to align with industry requirements. Moreover, Al-Mutawa & Izwaini (2015) highlighted that MT is becoming increasingly popular but still faces skepticism regarding its reliability compared to human translation (HT). The study reveals that while MT is widely used, there is a need for improved quality and training to enhance its effectiveness. The research suggests integrating MT with human oversight could bridge the gap between technology and professional translation practices.

Another study by Mahadin & Olimat (2022) examined how Jordanian translators utilize MT and manage COVID-19-related terminology in Arabic. The study highlights resistance among translators towards MT due to concerns about accuracy and reliability. Additionally, it underscores the challenges in translating COVID-19 terms accurately into Arabic, emphasizing the need for a unified glossary to ensure consistency and understanding across the Arab world. Besides, Al-Mahasees & Jaccomard (2020) reveal that most Facebook users (87.3%) have used Facebook Translation Service (FTS) to translate English posts into Arabic, and 83.8% specifically have translated COVID-19-related posts. Despite the high usage, many users reported minor errors in translation adequacy and fluency, highlighting both the utility and limitations of FTS in providing accurate translations during critical times.

Similarly, Su et al. (2023) investigate how well current translation technology training programs equip students with the necessary skills to use CAT tools. The study sample includes (385) Master of Translation and Interpreting (MTI) students in China. The study combines quantitative and qualitative interviews to assess students' experiences and perceptions. In addition, it utilizes the Kirkpatrick model to evaluate training effectiveness, revealing strengths and areas needing improvement. Key findings indicate that while many students find the training beneficial for gaining knowledge about CAT tools, others report significant challenges. The challenges include insufficient practical training, lack of experienced instructors, and inadequate technology integration into the curriculum. Overall, the research suggests that to bridge the gap between academic training and industry requirements, translation technology training programs must enhance their practical components and provide better resources and support for students and instructors.

In another related study, Khasawneh (2023) explores how AI technologies like ChatGPT and GPT-4 revolutionized translation and

interpretation services. These advancements break down language barriers, enhance communication, and promote understanding across different cultures. AI-powered tools have improved the accuracy and efficiency of translations, benefiting various sectors such as business, healthcare, education, and tourism. The article emphasizes the importance of AI in fostering global cooperation and understanding by enabling seamless cross-cultural communication.

Additionally, Al-Anazi (2019) examines the effectiveness and challenges of using CAT tools among Arabic language translators. The study involves a detailed evaluation based on surveys and experiments with translators. Identified key issues include language-specific complications such as segmentation, punctuation, and script-related problems. Despite these challenges, translators find CAT tools beneficial for improving productivity and consistency. The study suggests improvements, including better tool integration and robust support for Arabic language nuances. Mohammadi's (2017) study explores the satisfaction of translators with MT and translation memory (TM) systems through an ethnographic approach. Ethnography involves observing and understanding human behavior within specific cultural contexts, in this case, how translators interact with and perceive MT and TM systems. Several studies have explored TT from different perspectives. Hawamdeh (2022) examined translators' competence and their training challenges, focusing on Jordan and other Arab countries. Briva-Iglesias (2023) provided a comprehensive literature review of the evolution of translation technologies from the early beginning to the present day. In contrast, Aldossary (2023) focused on the difference between the translation training offered at Saudi Arabia universities and the translation industry's actual needs. However, the current study problem is articulated in exploring the status quo of integrating translation technology tools in translator training programs at Jordanian universities. With this in mind, the research problem is reflected in delving into usability, accuracy, efficiency, and overall satisfaction of translators using these technologies, providing insights into their practical implications and user experiences in professional translation settings.

3. Theoretical Framework

Considering the current research scope, the theoretical framework is constructed to address pros of using mt and cat tools for training university translation students, Cons of Using MT and CAT Tools for Translation Students in Universities

3.1 Pros of Using MT and CAT Tools for Training University Translation Students

With the most recent breakthroughs in translation technology tools, CAT tools, and their pedagogical consequences for translation students (Briva-Iglesias, 2023), many researchers shed light on how these tools increase efficiency, improve translation quality, and prepare students for the demands of professional translation practice (Al-Hamad et al, 2021). For university translation students, using Machine Translation (MT) and Computer-Assisted Translation (CAT) programs have various advantages in their studies and future careers. These advantages include the following:

- Efficiency: MT and CAT tools streamline the translation process, allowing students to translate faster and handle larger volumes of text (Al-Mutawa & Izwaini, 2015).
- Consistency: CAT tools maintain consistency in terminology and style across translations using translation memories, ensuring high-quality output (Al-Anazi, 2019).
- Learning aids: These tools serve as valuable learning aids by providing instant feedback and suggestions, helping students improve their translation skills and understand complex language structures (Al-Anazi, 2019).
- Access to resources: MT and CAT tools give students access to vast bilingual corpora and reference materials, which enrich their understanding of language nuances and cultural contexts (Al-Anazi, 2019; Al-Mutawa & Izwaini, 2015).
- Preparation for industry: The translation industry increasingly values proficiency in MT and CAT tools. Exposure to these tools during education prepares students for professional practice and enhances their employability (Aldossary, 2023).

3.2 Cons of Using MT and CAT Tools for Translation Students in Universities

Translation technology can significantly improve educational environments in Arabic-speaking countries. Although MT and CAT programs have numerous benefits, they have several drawbacks for university translation students. These drawbacks include the following:

- Accuracy and reliability: MT can be error-prone, especially for complex or nuanced texts. Inaccurate translations can lead to misunderstandings (Al-Mutawa & Izwaini, 2015).
- Cultural nuances: Translation technology often fails to capture cultural context, idiomatic expressions, and local dialects, which are crucial for meaningful learning (Khasawneh, 2023).
- Technical issues: Dependence on technology requires stable internet connections and device access, which can be a challenge in some regions (Su et al., 2023).
- Teacher training: Effective use of translation technology requires teachers to be trained in its application and potential pitfalls (Khoury, 2022; Su et al., 2023).

While obstacles exist, particularly regarding accuracy and cultural relevance, the benefits of increased accessibility and resource availability are significant. (Aldossary, 2023; Al-Shahwan, 2024; Khoury, 2022). Future efforts should focus on enhancing the reliability of these tools, providing adequate training for educators, and developing solutions that cater to the specific contexts of these regions.

4. Methodology

4.1 Research Approach and Design

This study involves utilizing descriptive design approach alongside using a survey methodology to explore the status quo of translation technology in translator training programs at Jordanian universities. The study focuses on understanding students' perspectives regarding various aspects of TT tools, including their adoption, ease of use, and influence on learning outcomes.

4.2 Research Instrument

The survey method used for data collection is divided into the following sections:

- Demographic information: This section collects participant data regarding gender, specialization (English, French), degree of study, and year of study. This information was crucial to identifying any demographic factors influencing the outcomes.
- Study Items: This section includes (31) items addressing the participants' familiarity with TT tools. The items are answered using a 5-point Likert scale (strongly agree = 5, agree = 4, neutral = 3, disagree = 2, strongly disagree = 1).

The primary data collection tool for this study is a structured Google Forms survey that consists of several factors, each addressing specific aspects of TT tools usage:

- Technological Adoption: Assessing the extent to which students have adopted TT tools in their translation work.
- Ease of Use: Evaluating how user-friendly students find these tools.
- Impact on Learning: How TT tools influence students' learning experiences and outcomes.
- Efficiency and Productivity: Measuring TT tools' perceived efficiency and productivity gains.
- Reliance on Technology: Investigating the degree to which students rely on TT tools.
- Learning and Skill Development: Understanding the impact of TT tools on developing students' translation skills.
- Future of Translation Profession: Gauging students' perceptions of how TT tools might shape the future of the translation profession.
- Challenges and Barriers: Identifying students' challenges and barriers when using TT tools.
- Translation Technology from a Linguistics Perspective: Exploring the impact of TT tools on linguistic accuracy and quality.
- Translation Technology from a Cross-Cultural Communication Perspective: Assessing how TT tools affect the cross-cultural communication aspect of translation.
- Translation Technology from the Estimated Student or Translator Work Perspective: Evaluating the impact of TT tools on the overall quality and accuracy of students' translation work.
- Cronbach's Alpha is used to validate the questionnaire items as it estimates consistency and reliability. Its values range from 0 to 1, where:
- 0 means no correlation exists between the items, indicating poor quality.
- 1 means the items measure the same construct flawlessly, indicating perfect correlation.
- A value of 0.7 or higher is commonly used as a reliability benchmark, signifying that the items are consistent and that the scale is dependable for research purposes.

Table 1. Cronbach's Alpha Coefficient Values for the Questionnaire

	Domain	Alpha Value
1	Technological Adoption	0.72
2	Ease of Use	0.73
3	Impact on Learning	0.7
4	Efficiency and Productivity	0.7
5	Reliance on Technology	0.71
6	Learning and Skill Development	0.73
7	Future of Translation Profession	0.71
8	Challenges and Barriers	0.7
9	Translation Technology from a Linguistics Perspective	0.72
10	Translation Technology from a Cross-Cultural Communication Perspective	0.7
11	Translation Technology from the Estimated Student or Translator Work Perspective	0.74

As illustrated in Table (1), Cronbach's Alpha value for all the domains ranges from (0.7) to (0.74), indicating acceptable internal consistency. This means that the items in each domain are sufficiently related to one another and considered reliable.

4.3 Survey Distribution

The survey was distributed to students currently enrolled in translation studies at the University of Jordan, Mutah University, and

Al-Zaytoonah University of Jordan. The targeted sample includes undergraduate and postgraduate students in translation programs. The survey link was sent via email, social media, and university networks to guarantee a broad audience.

4.4 Study Sample

The study sample consisted of (400) students selected using the non-probability convenience sampling method. This method ensures that a wide range of perspectives are presented, though it may limit the generalizability of the findings. The survey was distributed to students currently enrolled in translation studies at the University of Jordan, Mutah University, and Al-Zaytoonah University of Jordan. The targeted sample includes undergraduate and postgraduate students in translation programs.

4.5 Data Collection

The Google Forms survey was open for responses for over one month. Respondents were required to answer all questions, ensuring completeness and consistency in the data collected. The survey was designed to be anonymous to encourage honest responses.

4.6 Data Analysis

Data collected from the survey was analyzed using the Statistical Package for the Social Sciences (SPSS). Descriptive statistics were used to summarize the data, including means, standard deviations (Std), and frequencies. In addition, a scatter plot with a regression line and confidence interval was generated using SPSS to show how students' responses to various questions interrelate.

4.7 Ethical Considerations

Ethical approval was attained from the relevant university committees before the survey was distributed. Participation in the survey was voluntary, and all respondents provided informed consent. The survey was designed to protect the anonymity and confidentiality of respondents, with no personally identifiable information collected.

4.8 Limitations

The study acknowledges potential limitations and uses the convenience sampling method, which may lead to bias. Also, the reliance on self-reported data may be subject to response bias. Additionally, the study sample was selected from the University of Jordan, Mutah University, and Al-Zaytoonah University of Jordan, which may affect the generalizability of the findings to other study populations.

5. Results

In this section, an insight into the Descriptive Statistics: Mean and Standard Deviation and Detailed Correlation Analysis is thoroughly provided. In this study, 400 participants were reached, comprising 307 females (77.1%) and 91 males (22.9%). The study sample includes 363 (90.8%) undergraduate students, 22 (5.5%) master's students, and only 15 (3.7%) Ph.D. holders, all specializing in either English or French. Analyzing the collected data required calculating the means and standard deviations of each item in the questionnaire to derive the study results.

Regarding the status quo of translation technology, the study categorizes different factors under consideration for evaluating translation technology's effectiveness and integration. According to the table below, "Ease of use" and "Future of Translation Profession" have scored the highest scores (mean = 3.96, Std = 0.044; mean = 3.94, Std = 0.212, respectively). However, "Ease of use" is seen as more critical and impactful in translators' training programs, and participants feel confident in their ability to adapt quickly to new technologies, reflecting the accessibility and usability of modern translation tools. With a marginal difference, "Learning and skill development" and "TT from estimated student or translator work perspective" (mean = 3.86, Std = 0.019; mean = 3.85, Std = 0.087; respectively) ranked next. This indicates that technology is seen as a valuable source for improving and acquiring new translation skills. Moreover, technology is perceived as valuable in practical translation work with slight variations. The following are "Technological Adaptation" and "Efficiency and Productivity" (mean = 3.83, Std = 0.055; mean = 3.79, Std = 0.009; respectively). This reflects a willingness to adopt translation technology as students will likely be exposed to these tools in the classroom or while training, building confidence and trust. Technology enhances the workflow speed and output, reducing repetitive tasks such as glossary matching. "Impact on Learning" (mean = 3.67, Std = 0.153) shows a moderate agreement that technology enhances learning. This is because some students may still prefer traditional methods.

With a marginal difference, "TT from linguistics perspective" and "TT from cross-cultural communication perspective" come next (mean = 3.65, Std = 0.038; mean = 3.63, Std = 0.087, respectively). This shows that technology helps in linguistic analysis and bridging cultural gaps, but it has its downsides as TT might fail in nuance and cultural-specific expressions. The following is "Reliance on Technology" (mean = 3.62, Std = 0.029) which shows an agreement between students that they depend on technology. "Challenges and Barriers" (mean = 3.29, Std = 0.92) ranks last, suggesting that some students face some limitations or gaps, while others do not face any barriers at all.

Table 2. The Status Quo of Translation Technology Tools in Translator Training Programs at Jordanian Universities

Rank	No.	Domain	Mean	Std. Devi.	Degree
1	2	Ease of Use	**3.96**	**0.044**	High
2	7	Future of Translation Profession	**3.94**	**0.212**	High
3	6	Learning and Skill Development	**3.86**	**0.019**	High
4	9	TT from the estimated student or translator work perspective	**3.85**	**0.087**	High
5	1	Technological Adaptation	**3.83**	**0.055**	High
6	4	Efficiency and Productivity	**3.79**	**0.009**	High
7	3	Impact on Learning	**3.67**	**0.153**	High
8	11	TT from a cross-cultural communication perspective	**3.63**	**0.087**	High
9	10	TT from a linguistics perspective	**3.65**	**0.038**	High
10	5	Reliance on Technology	**3.62**	**0.029**	High
11	8	Challenges and Barriers	**3.29**	**0.920**	High

5.1 Descriptive Statistics: Mean and Standard Deviation

The mean and standard deviation (Std) for each question provide insights into general tendencies and the variability in students' responses. A high mean indicates general agreement with a statement, while a low mean reflects disagreement. On the other hand, standard deviation reveals the degree of consensus among respondents; a low Std indicates that responses are clustered closely around the mean, while a high Std suggests diverse opinions.

- High Mean and Low Std:

- **"I think human translators will always be needed despite technological advances**": a high mean (4.03) and a low Std (0.84) suggests a widespread perception of technology as a tool, not a replacement —a key idea in current translation studies and professional practice. Accordingly, TT cannot fully replace human translation, replace human interpretation, cultural understanding, and context-sensitive decision-making in translation.

- High Mean and High Std:

- **"I feel confident in my ability to translate without the use of technology**": A high mean (3.83) and a high Std (0.87) suggest that students show a strong and consistent belief in their independent translation skills, even in the absence of technological assistance. This could imply that their training has equipped them with foundational linguistic and translation abilities.

- Low Mean and Low Std:

- **"TT can show the exact technical scientific terms":** A low mean (3.64) and low Std (0.88) suggest that students generally find TT reliable for producing technical terminology accurately, which is essential in fields requiring precise language (e.g., legal, medical, or scientific translations).

- Low Mean and High Std:

- **"I encounter technical difficulties when using translation tools":** A low mean (3.40) and high Std (1.14) suggest that students occasionally face technical issues, but the level of difficulty varies among students. This indicates a need for more training or technical support using TTs.

5.2 Detailed Correlation Analysis

Correlations provide insight into how students' responses to various questions interrelate. In the context of data analysis, we used the "r" which represents the Pearson correlation coefficient; it is a statistical measure that quantifies the strength and direction of a linear relationship between two variables. The value of r ranges from -1 to 1:

- **r=1** indicates a perfect positive linear relationship (as one variable increases, the other increases proportionally).
- **r=−1** indicates a perfect negative linear relationship (as one variable increases, the other decreases proportionally).
- **r=0** suggests no linear relationship between the two variables.

The following points are presented as the most controversial among participants:

a) Technological Adoption and Learning (r = 0.61)

- **Interpretation**: The correlation between "TT Technological Adoption" and "TT Learning Outcomes" indicates that students perceive learning advantages are higher for students who use TT as technologies more actively.
- **Implication**: This suggests students value TT for translating words and learning subtleties. This perception could enhance confidence when engaging in learning, as TT is a bridge between language learning and translation. However, high reliance on TT in this domain may limit the development of learning interpretive skills.

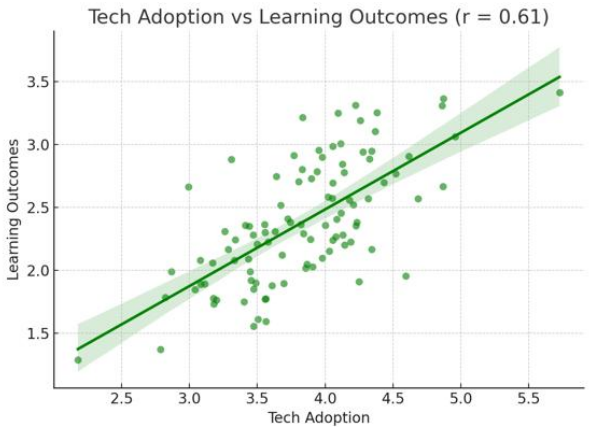

Figure 1. A moderate correlation between Technological Adoption and Learning Outcomes (r = 0.61, p < 0.01) implies that learning advantages are higher for students who use TT technologies more actively

b) Productivity and ease (r = 0.74)

- **Interpretation**: A positive correlation between "Using translation tools increases my productivity" and "TT is a good factor in easing the translation process" implies that students who find translation tools productive also appreciate their speed.
- **Implication**: The increased efficiency offered by TT tools allows students to handle larger workloads or meet tight deadlines. For future professionals, these factors could be advantageous in work environments that value ease and output. However, it is important to ensure that the quality is not compromised by productivity.

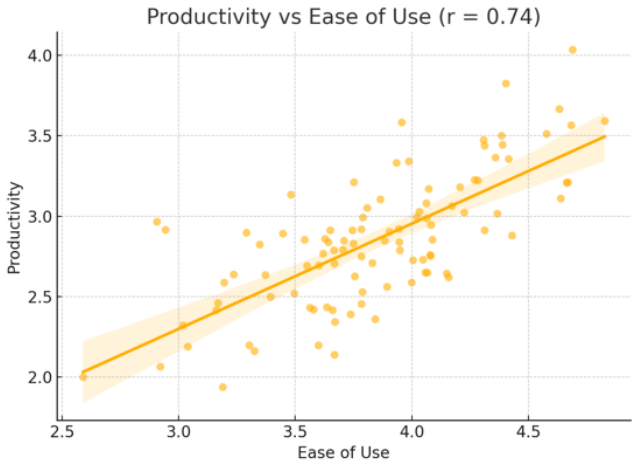

Figure 2. The scatter plot illustrates the positive relationship (r = 0.74) between "Using translation tools increases my productivity" and "TT is a good factor in easing the translation process." The red regression line emphasizes the positive trend, suggesting that students who find translation tools enhance productivity also perceive them as effective for improving speed.

c) Confidence and Reliance on translation technology tools (r = -0.56)

- **Interpretation**: A negative correlation between the items stipulating "I feel confident in my ability to translate without technology" and "I often rely on translation technology tools as the first step" suggests that students who are less confident in their abilities without translation technology tools are more likely to rely on them as a starting point.
- **Implication**: This highlights a possible dependency on translation technology tools among students who lack confidence in manual translation. While translation technology tools can be beneficial, over-reliance may hinder the development of essential translation skills, impacting their ability to work independently in future roles.

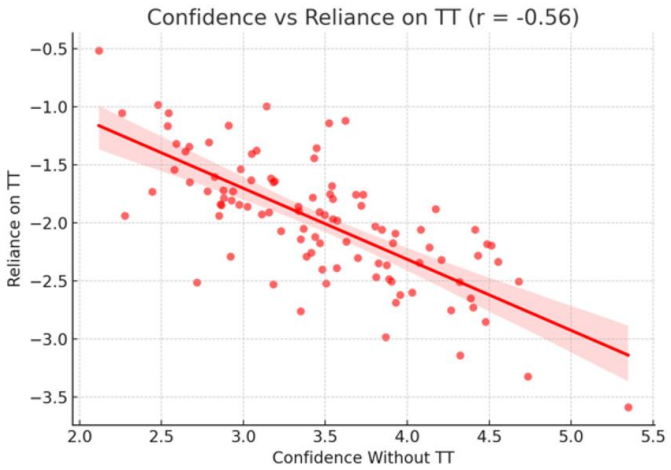

Figure 3. The scatter plot visualizes the negative correlation ((r = -0.56) between the items stipulating "I feel confident in my ability to translate without the use of technology" and "I often rely on translation technology tools as the first step in my translation process". The red regression line highlights this inverse relationship, indicating that students with lower confidence in manual translation tend to rely more on translation technology tools

d) Career Readiness and Satisfaction (r = 0.67)

- **Interpretation**: The correlation between items stipulating “translation technology tools show efficiency for a career as a student or future professional translator" and " translation technology tools leads to positive results and satisfaction" shows that students who view translation technology tools as beneficial for their future careers also experience higher satisfaction with the outcomes produced using these tools.
- **Implication**: This indicates that students are generally optimistic about the role of translation technology tools in their career paths. The satisfaction derived from using translation technology tools suggests that students are likely to continue leveraging these tools professionally. However, balancing translation technology tools used with the development of core translation skills will be key to long-term satisfaction and success.

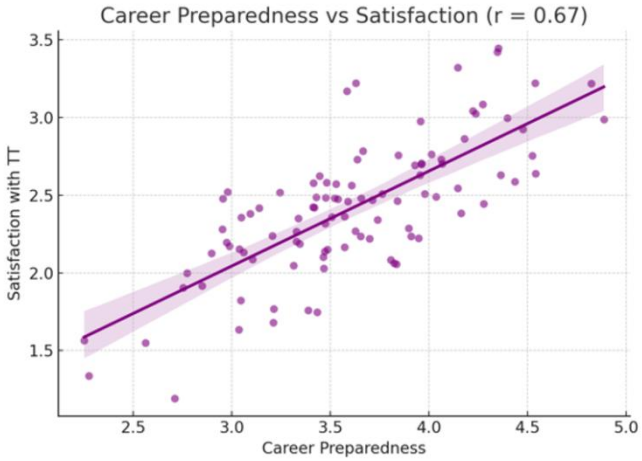

Figure 4. The scatter plot illustrates the positive correlation (r = 0.67) between "translation technology tools show efficiency for a career as a student or future professional translator" and " translation technology tools lead to positive results and satisfaction." The red regression line highlights this strong relationship, suggesting that students who view translation technology as career-enhancing also report higher satisfaction with its outcomes

The study results align with findings from multiple studies, suggesting a common trend in both Jordanian and broader Middle Eastern contexts. While translation technology tools are appreciated and widely used, practical training, reliability, and language-specific support challenges persist. There is a clear need to enhance translation curricula with more hands-on experience, better technology resources, and instructor training, similar to recommendations from Aldossary (2023) and Su et al. (2023). Additionally, consistent with (Al-Mutawa & Izwaini, 2015; Mahadin & Olimat, 2022), the reliability and accuracy of MT remain concerning, especially for Arabic, suggesting that

ongoing improvements in TT tools algorithms and possibly the integration of AI technologies could address these challenges and bridge the gap between academic training and industry needs.

6. Conclusion

In a nutshell, the statistical analysis of this questionnaire data demonstrates that students view translation technology tools positively regarding usability and learning impact. Moderate positive correlations between "ease of use", "future profession", and "learning impact" validate that as students become more comfortable with translation technology tools, they see greater benefits in their educational outcomes and understand that the translation industry has become more reliant on technology. Accordingly, training programs need to equip students with TT. However, variability in responses about "Efficiency and Productivity" and "Challenges" implies that while universities are successfully teaching tools that deliver consistent workflow improvement, leaving small room for disagreement, students still facing challenges which can be the result of uneven training across institutions due to variability of resources such as funding and access to tools. This aligns with Hawamdeh's (2022) study, which found that training institutions lack practical training and some use outdated teaching methods.

Moreover, the findings highlight key areas for universities to focus on, such as improving TT tools training, addressing accessibility challenges, and preparing students for a technology-integrated translation profession. It is also recommended that educational institutions continue to invest in tools, software, and resources that boost students' training and provide user-friendly tutorials to improve accessibility for new or beginner users. This is consistent with the findings of Aldossary (2023), who indicated that applied translation training and courses are significantly deficient.

Furthermore, educational institutions and industry professionals should cooperate to predict future trends and guarantee that students are ready and well-equipped to work with new and advanced tools and workflows. By addressing these factors, educational institutions in Jordan could enhance the learning experience for translation students, making them more adept at utilizing translation technology tools effectively while understanding the broader implications of technology in their future careers. Overall, this analysis underscores the importance of a balanced approach to translation technology tools integration in education—one that enhances efficiency and learning without diminishing students' critical language and translation skills.

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Authors' contributions

Dr. Musa Alzghoul and Dr. Tahani Alazzam were responsible for study design and revising and for drafting the manuscript. Ms. Raghad M. Alzghoul was responsible for data collection. Dr. Jaber Abualasal and Saif Al-Deen Al-Ghammaz revised it. All authors read and approved the final manuscript.

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