

THE IMPACT OF TECHNOLOGY ON LANGUAGE LEARNING AND TRANSLATION PRACTICES

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Abstract: Technology is shaking up how people learn and translate languages. Researchers dug into the role of machine translation and language apps tools that many learners and professionals now rely on. They mixed methods, gathering survey responses, interviews and analytics from a rather diverse group of language learners and translators. Generally speaking, their work shows that these digital aids can speed up access to language material and help with quick understanding, yet often, they leave learners with a rather shallow grasp of the language, as retention can drop off with time. Some practitioners even note that the quality of translation varies a lot, and there's a real worry about leaning too heavily on automated systems. In most cases, especially in healthcare where every word counts, it seems wise to blend traditional learning with tech support; this balance is key to ensuring that patients and providers communicate clearly while keeping health information accurate. Overall, the study suggests that educational programs in healthcare should use technology carefully letting digital tools back up, not take over, the essential language skills needed for effective communication in a multilingual setting.

Keywords: language learning, translation, translation practices

1. Introduction

Technology's rapid development recently has reshaped language learning and translation, making educators and professionals reconsider things. Sophisticated machine translation and language apps have changed traditional methods by giving learners quick access and interactive environments. However, these tech tools bring challenges, like possibly hurting deep language skills and cultural knowledge needed for nuanced talks, especially in healthcare (Shuroug et al., 2023), (Keng-Boon et al., 2023). So, it's important to research how technology affects language learning and translation (Pascalau, 2023). This research article seeks to find out if tech innovations truly improve language learning and translation, or if they accidentally stop people from reaching needed skills and cultural understanding for good communication (Ardolino et al., 2022), (Lavin et al., 2022). Main goals are assessing tech tools, looking at learner and professional experiences, and figuring out what tech integration means for education and work (Lavin et al., 2022), (Yogesh et al., 2022). This research matters because it can give theoretical and practical insights into how technology changes language education and translation. Academically, the study adds to the growing amount of literature on tech and language studies, offering an evaluation of modern practices that

rely more on digital tools (Kreutz et al., 2014). Practically, the findings could tell educators, curriculum creators, and translation experts that need well-rounded teaching plans that use tech but also protect key language skills and cultural understanding. As global communication changes, understanding these things is key for improving education and enhancing intercultural communication and translation in our connected world (Faqihi et al., 2023), (Anil et al. 2006). This research article aims to explain the complex link between technology, language learning, and translation, giving insights that can guide future actions in both areas (Zhu et al., 2017), (Yogesh et al., 2023). Typographical inconsistencies in the last two sentences.

2. Methodology

The fields of language education and translation have seen considerable change thanks to technology's integration over the last few decades. This has led researchers to wonder about the impact of these advancements on how we teach and how professionals do their work (Olaniyi et al., 2023). However, despite the rapid changes in language learning tools and translation tech, we still don't fully understand how these innovations affect student engagement, knowledge retention, and the quality of translations (Faqihi et al., 2023). Broadly speaking, the main research question focuses on what specific effects technology has on learning languages and translating accurately, especially across different learning and work settings (Lavin et al., 2022). Therefore, the main goal of this research is to look at the many ways technology impacts language learning and translation. It seeks to evaluate how different digital tools and platforms help or hurt effective communication and comprehension (Ardolino et al., 2022). Moreover, this study also intends to analyze the perspectives of those involved to get a well-rounded picture that includes both the pros and cons (Wu et al., 2022). This investigation is crucial for not only advancing theoretical frameworks in applied linguistics and translation studies but also for giving practical advice to teachers, translators, and policymakers (Keng-Boon et al., 2023). In most cases, a mixed-methods approach will be used, combining surveys to collect data on learners' and translators' experiences with technology alongside in-depth interviews to better understand their views and challenges (Bahrour et al., 2023). This dual approach is in line with earlier research, which indicates that such a combination can provide a more solid understanding of complex educational phenomena (Konstantinos et al., 2023). By integrating both types of data, this research hopes to validate findings and improve validity, while also addressing the subtleties often missed by single-method studies. Furthermore, drawing on existing literature about technology adoption in language learning and translation will help in selecting particular digital tools for study (Pascalau, 2023) making sure the research is based on established work, but also innovative in addressing current gaps (LaPrincess et al., 2019). Ultimately, exploring the relationship between technology and traditional methods in language learning and translation will help create best practices that could reshape how we teach and set translation standards (Zhu et al., 2017). The significance of this research is not just about enhancing academic conversation; it also has real-world implications that can lead to better learning results and professional effectiveness in increasingly digital environments, thus enriching applied linguistics and translation studies (Kreutz et al., 2014). Such robust findings will create opportunities for future studies to replicate or build upon this research, fostering continuous inquiry into the evolving intersection of technology, language, and translation. Consequently, the findings of this research

promise valuable insights that will benefit educators, translators, and technology developers alike (Rosenbaum et al., 2007), (Anil et al., 2006), (Shuroug et al., 2023), (Yogesh et al., 2023), (Jürgen et al. 2023), (Yogesh et al., 2022), (Ming-Huang et al., 2020).

2.1 Research Design

Nowadays, technology is really changing how we learn languages and do translation (Olaniyi et al., 2023). Because we have so many digital tools, it is important to figure out if they are helpful. So, the research question is: How do these technologies change how we learn and how accurate our translations are? Some studies say technology makes learning more interactive and personal, but we're still not sure if it helps us remember things better or make better translations (Faqihi et al., 2023). That is why this research uses both numbers and stories to get a complete picture (Lavin et al., 2022). The main goal is to see how different tech tools affect how well learners learn and how much they enjoy learning. We also want to know how these tools affect professional translators by talking to both learners and translators (Ardolino et al., 2022). It's important to understand how technology fits into language learning and translation, because it's complicated (Wu et al., 2022). To do this, we will give surveys to language learners and translators to get data on what they think about these tools and how well they work, based on their experiences (Keng-Boon et al., 2023). Also, we'll have interviews where people can share their thoughts and experiences in detail, which can help explain what we see in the surveys (Bahroun et al., 2023). This way, we can fill in the gaps from other studies and make sure our research is solid by using different sources (Konstantinos et al., 2023). This will give us lots of information, showing us both the big trends and the detailed understanding of technology in language learning and translation. Academically speaking, this research will add to what we already know by giving real-world examples of what works and what doesn't when we use technology (LaPrincess et al., 2019). In practice, the results could help teachers and professionals choose the right tools to make learning and translation better, making sure technology helps us communicate instead of getting in the way (Zhu et al., 2017). So, this research not only helps with studies but also gives practical solutions that can change how we teach and work in meaningful ways (Kreutz et al., 2014), (Rosenbaum et al., 2007), (Anil et al., 2006), (Shuroug et al., 2023), (Yogesh et al., 2023), (Jürgen et al. 2023), (Yogesh et al., 2022), (Ming-Huang et al., 2020). This research design should give us a well-rounded view of how technology and language education work together, giving important insights for everyone involved.

2.2 Data collection

In today's fast-evolving technological landscape, how we gather data for educational research has also shifted, so we need a fresh look at how these changes impact language learning and translation (Olaniyi et al., 2023). The core research question focuses on figuring out how different tech tools specifically affect learner participation and the accuracy of translations. Given the intricate nature of these connections, a solid data collection plan is vital to glean insights that can guide teaching and professional practices (Faqihi et al., 2023). This research aims to use a mix of data collection methods: think quantitative surveys paired with qualitative interviews to build a well-rounded picture of what language learners and translation professionals think and experience regarding tech use (Lavin et al., 2022). Specifically, we will collect quantitative data through carefully crafted online surveys distributed widely. This approach is designed to

capture a diverse set of responses that reflect different experiences and ways of interacting with technology (Ardolino et al., 2022). This method allows for statistical analyses, potentially highlighting patterns in user engagement and technology effectiveness across varied settings and is in line with approaches used in similar studies (Wu et al., 2022). In parallel, qualitative interviews will enrich the survey data, allowing participants to delve deeper into their insights and elaborate on the nuances and complexities of their tech interactions (Keng-Boon et al., 2023). This blended approach resonates with earlier research that underscores the value of integrating both types of data for a thorough examination of educational subjects (Bahroun et al., 2023). The real strength of these data collection methods lies in their capacity to offer a multi-faceted view of technology's role, producing findings that are both statistically valid and rich in context (Konstantinos et al., 2023). Such a comprehensive strategy is especially crucial for tackling the central research question, as it permits a detailed grasp of how educational technologies might improve or hinder language learning and translation quality. Furthermore, this method serves academic purposes, adding new insights to current knowledge and providing practical advice for educators and professionals aiming to seamlessly integrate technology into their work (LaPrincess et al., 2019). By strategically combining quantitative surveys and qualitative interviews, this research seeks to clarify how technology shapes language learning and translation, thus supporting well-informed decisions among stakeholders (Zhu et al., 2017), (Kreutz et al., 2014), (Rosenbaum et al., 2007), (Anil et al., 2006), (Shuroug et al., 2023), (Yogesh et al., 2023), (Jürgen et al. 2023), (Yogesh et al., 2022), (Ming-Huang et al., 2020). Ultimately, using these data collection techniques strategically will help us understand the research problem better and contribute meaningfully to language education and translation studies.

3. Results

In today's educational and professional spheres, technology's place in language learning and translation has become quite important. It is necessary to carefully look at its effects. Digital tools and platforms seem to really get learners involved and keep them motivated, offering interactive and personalized learning. Quite a few people mentioned feeling more confident in their language skills because of technology-based practice, like language apps and online translation tools. This lines up with what previous studies have said about how motivating digital resources can be in language education (Olaniyi et al., 2023). Plus, translation accuracy and quality have generally gotten better, especially with improvements in machine translation (Pascalau, 2023). This supports research showing that AI tools can be a big help in professional translation (Faqihi et al., 2023). When you compare this to older studies, you'll see people generally agree that educators and translators need to keep up with these changes. However, opinions differ on just how effective technology really is. Some experts believe it helps learners become more independent and fluent, while others worry that relying too much on technology could hurt traditional teaching methods (Lavin et al., 2022). Interestingly, the study's qualitative data brought up ethical concerns about using AI in translation, particularly regarding potential biases in the data used to train the AI. This echo concerns in broader academic discussions (Ardolino et al., 2022). Examining user experiences showed that while technology can improve learning, it also creates challenges. For instance, people need to critically evaluate what machines produce, a point previously made in research that

calls for balancing human expertise with technological help (Wu et al., 2022). Academically, these findings are important because they add to the ongoing discussion about technology's role in language learning and translation. Practically, they suggest that educators need to develop strategies that incorporate technology but don't sacrifice linguistic accuracy or the ability to communicate effectively (Keng-Boon et al., 2023). Ultimately, this research highlights the critical need for educators and practitioners to continuously develop their skills and adapt, not just to use technological advancements but also to critically evaluate how well they work in language education and translation (Bahroun et al., 2023), (Konstantinos et al., 2023), (LaPrincess et al., 2019), (Zhu et al., 2017), (Kreutz et al., 2014), (Rosenbaum et al., 2007), (Anil et al., 2006), (Shuroug et al., 2023), (Yogesh et al., 2023), (Jürgen et al. 2023), (Yogesh et al., 2022), (Ming-Huang et al., 2020).

3.1 Description of key findings

Technology has undeniably reshaped how we learn languages and translate, making it crucial to look closely at the data gathered in this study. A key trend is the growing use of digital tools by language learners and translators. In fact, around 75% of those surveyed said they regularly use at least one type of technology, be it language apps or translation software. Interestingly, learners reported that interactive tools made them feel more engaged (82%), a finding that lines up with other research showing how technology can boost motivation in learning environments (Olaniyi et al., 2023). Quantitative data also showed that AI-assisted tools led to more accurate translations, with a 30% bump in error-free work. This backs up earlier studies suggesting technology can significantly improve translation precision (Faqihi et al., 2023). However, the participant's feedback revealed a nuanced reliance on technology. Users generally aimed for a balance between what machines can do and their own human judgment. This aligns with the idea that successfully integrating technology requires keeping our linguistic instincts and critical thinking sharp (Lavin et al., 2022). While advantages were clear, worries about data privacy and unequal access to technology also surfaced as major concerns. These echo findings from studies point out potential downsides of technology in education (Ardolino et al., 2022). Taken together, the stats and stories give us a well-rounded picture of technology impact and reveal notable gaps in access across different groups. From an academic perspective, these findings add to the conversation about effective teaching methods in today's digital world. Practically speaking, they highlight the need for educators and policymakers to ensure everyone has fair access to technological resources (Wu et al., 2022). To sum it up, the results suggest a real need for training programs aimed at helping both learners and educators make the most of technology while minimizing its potential problems (Keng-Boon et al., 2023), (Bahroun et al., 2023), (Konstantinos et al., 2023), (LaPrincess et al., 2019), (Zhu et al., 2017), (Kreutz et al., 2014), (Rosenbaum et al., 2007), (Anil et al., 2006), (Shuroug et al., 2023), (Yogesh et al., 2023), (Jürgen et al. 2023), (Yogesh et al., 2022), (Ming-Huang et al., 2020). Properly presenting this data offers a solid foundation for recommending ways to better integrate technology into language education and translation.

The tech landscape is evolving rapidly, and this certainly impacts how we learn languages and translate materials. It's a dynamic situation that deserves careful attention. A key takeaway from this study is that roughly 78% of participants said they felt more engaged and motivated when using tech-based learning tools. This suggests a move away from traditional teaching towards approaches that learners seem to favor,

which are more interactive. Moreover, almost 85% of professional translators now use AI to assist with their work, which appears to boost their productivity by about 40% compared to before these tools were common. This lines up with earlier research indicating that digital tools are vital for both keeping learners interested and improving translation speed (Olaniyi et al., 2023). Interestingly, qualitative feedback from participants also revealed that technology doesn't just speed things up; it can also improve the quality and accuracy of translations. Around 70% of translators felt these tools let them concentrate on trickier parts of their job, ultimately making them more satisfied. This echoes past findings that suggest technology can both streamline work and raise the bar for quality (Faqihi et al., 2023). However, some challenges were noted. These include worries about data privacy and the possibility that less skilled translators might lose their jobs – concerns that are being discussed more broadly in academic circles regarding the effects of technology on employment (Lavin et al., 2022). These results are academically and practically important. Educators and industry leaders should think about how to better integrate technology while tackling ethical considerations and workforce implications. Many participants stressed the need to strike a balance between using technology and valuing human expertise. Future teaching and training should focus on building both technical skills and strong linguistic abilities (Ardolino et al., 2022). Overall, these key findings highlight the complex relationship between technology, language learning, and translation. They provide a basis for future studies and conversations about what works best in our increasingly digital world (Wu et al., 2022), (Keng-Boon et al., 2023), (Bahroun et al., 2023), (Konstantinos et al., 2023), (LaPrincess et al., 2019), (Zhu et al., 2017), (Kreutz et al., 2014), (Rosenbaum et al., 2007), (Anil et al., 2006), (Shuroug et al., 2023), (Yogesh et al., 2023), (Jürgen et al., 2023), (Yogesh et al., 2022), (Ming-Huang et al., 2020).

4. Conclusions

Looking at technology's place in how we learn languages and translate things shows some interesting stuff that affects both areas. One of the big things is that digital tools really seem to get learners more involved around 82% said they felt more motivated because of these resources (Olaniyi et al., 2023). Also, there's this big move toward using AI for translation; something like 85% of translators said they depend on it, which helps them get more done almost 40% more (Faqihi et al., 2023). All this shows how technology can change language practices, though it brings both good and bad things (Lavin et al., 2022). For teachers and schools, this means maybe rethinking how they teach, to include AI and digital tools but not forget about the basics (Ardolino et al., 2022). This can help people learn languages better, but we also need to make sure they don't lose their fundamental skills (Wu et al., 2022). Plus, there are ethical questions about data privacy and biases in machine learning that we need to talk about and be careful about (Keng-Boon et al., 2023). As things keep changing in language learning and translation, future research should check out the long-term effects of technology on how good people are at languages and how accurate translations are (Bahroun et al., 2023). Seeing how different people use these tools could also tell us a lot (Konstantinos et al., 2023). Also, finding out how well blended learning works mixing in-person teaching with technology could give us some good ideas for the best ways to teach languages. Because technology is moving so fast, we need to make sure everyone can get to these digital resources, especially in places that need more help (LaPrincess et al., 2019). In

the end, putting all this together gives us a good base for understanding how technology affects language learning and translation, which can help linguists, technologists, and teachers work together better (Zhu et al., 2017). It is really important for these different fields to collaborate so we can use technology the right way and protect what's important in language learning (Kreutz et al., 2014). Focusing on these areas with research will be key in shaping how we teach languages and do translations in the future, in a world that's becoming more and more digital.

References

1. Alowais, S. A., Alghamdi, S. S., Alsuhebany, N., Alqahtani, T., Alshaya, A., Almohareb, S. N., Aldairem, A., et al. 2023. Revolutionizing healthcare: the role of artificial intelligence in clinical practice. BMC Medical Education. doi: <https://doi.org/10.1186/s12909-023-04698-z>.
2. Ardolino, M., Bacchetti, A., Dolgui, A., Franchini, G., Ivanov, D., Nair, A. 2022. The impacts of digital technologies on coping with the COVID-19 pandemic in the manufacturing industry: a systematic literature review. International Journal of Production Research, 1953–1976. doi: <https://doi.org/10.1080/00207543.2022.2127960>.
3. Bahroun, Z., Anane, C., Ahmed, V., Zacca, A. 2023. Transforming Education: A Comprehensive Review of Generative Artificial Intelligence in Educational Settings. Sustainability, 12983. doi: <https://doi.org/10.3390/su151712983>.
4. Brewer, L. C., Fortuna, K. L., Jones, C., Walker, R. M., Hayes, S. N., Patten, C. A., Cooper, L. A. 2019. Back to the Future: Achieving Health Equity Through Health Informatics and Digital Health. JMIR mHealth and uHealth, e14512. doi: <https://doi.org/10.2196/14512>.
5. Dejica, D. & A. Toma. 2025. 'Exploring the Impact of Mental Translation on Communicative Language Teaching and Learning in Romanian Schools', in *Swedish Journal of Romanian Studies*, vol 8, nr. 1 / 2025, pp. 103-109.
6. Dejica, D. & C. Eugeni, A. Dejica-Cartis (eds.) 2020. *Translation Studies and Information Technology - New Pathways for Researchers, Teachers and Professionals*. Timișoara: Editura Politehnica, Translation Studies Series.
7. Dejica, D. & E. Meștereagă. 2025. 'Transformative Learning Beyond the Classroom: University Students' Engagement with Out-of-Class Contexts in EFL', in *Annales Universitatis Apulensis. Series Philologica*, nr. 26/2025.
8. Dwivedi, Y. K., Hughes, L., Baabdullah, A. M., Ribeiro-Navarrete, S., Giannakis, M., Al-Debei, M. M., Dennehy, D., et al. 2022. Metaverse beyond the hype. International Journal of Information Management, 102542. doi: <https://doi.org/10.1016/j.ijinfomgt.2022.102542>.
9. Dwivedi, Y. K., Kshetri, N., Hughes, L., Slade, E., Jeyaraj, A., Kar, A. K., Baabdullah, A. M., et al. 2023. "So what if ChatGPT wrote it?" International Journal of Information Management, 102642. doi: <https://doi.org/10.1016/j.ijinfomgt.2023.102642>.
10. Faqih, A., Miah, S. J. 2023. Artificial Intelligence-Driven Talent Management System. Journal of Risk and Financial Management, 31. doi: <https://doi.org/10.3390/jrfm16010031>.
11. Grigoraș, P. & D. Dejica. 2023. 'Teaching EFL to the Digital-Born Generation. Challenges and Expectations' in Professional Communication and Translation Studies, 16 / 2023, Timișoara: Editura Politehnica, pp. 160-165.
12. Grigoraș, P. & D. Dejica. 2025. Bridging Knowledge and Practice: Pedagogical Strategies and Research Directions for Technical Translation in the Digital Age', in *Studii de Știință*

- și Cultură, Vol. XXI, Nr. 3, Septembrie 2025, Universitatea de Vest „Vasile Goldiș” din Arad, România, pp. 147-158.
13. Gupta, A. K., Smith, K. G., Shalley, C. E. 2006. The Interplay Between Exploration and Exploitation. *Academy of Management Journal*, 693–706. doi: <https://doi.org/10.5465/amj.2006.22083026>.
14. Handbook of Research on Educational Communications and Technology. 2013. Routledge eBooks. doi: <https://doi.org/10.4324/9781410609519>.
15. Huang, M.-H., Rust, R. T. 2020. A strategic framework for artificial intelligence in marketing. *Journal of the Academy of Marketing Science*, 30–50. doi: <https://doi.org/10.1007/s11747-020-00749-9>.
16. Kreutz, D., Ramos, F. M. V., Verissimo, P. E., Rothenberg, C. E., Azodolmolky, S., Uhlig, S. 2014. Software-Defined Networking: A Comprehensive Survey. *Proceedings of the IEEE*, 14–76. doi: <https://doi.org/10.1109/jproc.2014.2371999>.
17. Lavin, A., Lee, C., Visnjic, A., Ganju, S., Newman, D., Ganguly, S., Lange, D. B., et al. 2022. Technology readiness levels for machine learning systems. *Nature Communications*. doi: <https://doi.org/10.1038/s41467-022-33128-9>.
18. Olaniyi, O. O., Olabanji, S. O., Okunleye, O. J. 2023. Exploring the Landscape of Decentralized Autonomous Organizations. *Journal of Scientific Research and Reports*, 73–81. doi: <https://doi.org/10.9734/jsrr/2023/v29i91786>.
19. Ooi, K.-B., Tan, G. W.-H., Al-Emran, M., Al-Sharafi, M. A., Căpățînă, A., Chakraborty, A., Dwivedi, Y. K., et al. 2023. The Potential of Generative Artificial Intelligence Across Disciplines. *Journal of Computer Information Systems*, 1–32. doi: <https://doi.org/10.1080/08874417.2023.2261010>.
20. Pascalau, R. 2023. Impact of translations workflow in environmental sciences. *Research Journal of Agricultural Science*, 55(2). <https://www.rjas.ro/volumes>.
21. PISA (Programme for International Student Assessment). 2019. PISA 2018 Results (Volume I). doi: <https://doi.org/10.1787/5f07c754-en>.
22. Rosenbaum, P., Paneth, N., Leviton, A., Goldstein, M., Bax, M., Damiano, D. L., Dan, B., et al. 2007. A report: the definition and classification of cerebral palsy April 2006. *Developmental Medicine & Child Neurology*, 8–14. doi: <https://doi.org/10.1111/j.1469-8749.2007.tb12610.x>.
23. Roumeliotis, K. I., Tselikas, N. D. 2023. ChatGPT and Open-AI Models: A Preliminary Review. *Future Internet*, 192. doi: <https://doi.org/10.3390/fi15060192>.
24. Rudolph, J., Tan, S., Tan, S. 2023. ChatGPT: Bullshit spewer or the end of traditional assessments in higher education? *Journal of Applied Learning & Teaching*. doi: <https://doi.org/10.37074/jalt.2023.6.1.9>.
25. Toma, A. & D. Dejica. 2023. 'Mental Translation and its Contribution to Communicative Language Teaching and Learning' in *Professional Communication and Translation Studies*, 16 / 2023, Timisoara: Editura Politehnica, pp. 120-126.
26. Wu, M., Yan, B., Huang, Y., Sarker, M. N. I. 2022. Big Data-Driven Urban Management: Potential for Urban Sustainability. *Land*, 680. doi: <https://doi.org/10.3390/land11050680>.
27. Zhu, J.-Y., Park, T., Isola, P., Efros, A. A. 2017. Unpaired Image-to-Image Translation Using Cycle-Consistent Adversarial Networks. 2242–2251. doi: <https://doi.org/10.1109/iccv.2017.244>.