Rethinking language education in the digital age: The impact of digitalisation on language learning and teaching

Olena MARINA
Edina KROMPÁK
Stefanie WYSS
Pedagogische Hochschule Luzern
Pfistergasse 20, 6003 Luzern, Schweiz
olena.marina@phlu.ch
ORCID: 0000-0001-6296-2609
edina.krompak@phlu.ch
ORCID: 0000-0002-8526-2784
stefanie.wyss@phlu.ch
ORCID: 0000-0001-6580-7815

Modern technologies are transforming our lives every moment of every day. Advances in engineering and IT technologies continue to shape the way we work, interact, socialise and learn. With access to multiple digital resources and platforms, humans are continually discovering new ways to convey and exchange meaning.

At the same time, the emergence of new technical opportunities is transforming the way learning and teaching processes are organised, perceived and evaluated. Digital technologies offer new and exciting ways to motivate students in language learning, while also offering new contexts and environments for language encounters and exploration. This special issue addresses the digitalisation of education, particularly in language learning and teaching (Gee & Hayes 2011), by integrating transdisciplinary perspectives on language education.

This special issue builds on the conference "Language Learning and Teaching in Digital Transformation" held in Lucerne on 1–2 September 2023. It brings together empirical evidence related to digitalisation and contributes to a deeper understanding of how digital technologies are applied in contemporary education (see also Krompák 2025). The issue explores topics such as the use of digital devices, online language teaching opportunities, social media and language learning, and the role of artificial intelligence (AI) in formal and informal language learning. It also discusses how these developments can foster digital literacy.

Bulletin suisse de linguistique appliquée
No 120, 2025, 1-10 • ISSN 1023-2044 • DOI: 10.26034/ne.vals.2025.9023

By highlighting recent developments in multimodal and digital literacy in language learning and teaching (Brown & Hao 2022; Hilfsdorf Rocha 2022 et al.), this special issue focuses on everyday digital language practices (Androutsopoulos & Juffermans 2014; Androutsopoulos 2016; Thurlow 2018) and examines the relationship between these practices and language ideologies in contemporary language education, as well as in the ongoing discourse on "rewilding" language education (Thorne et al. 2021).

The notion of rewilding language education considers the ways language learning in the digital era occurs beyond the classroom, particularly through informal learning on social media and language learning in the wild (Thorne et al. 2021). It highlights a "pedagogical approach termed *rewilding* for its emphasis on designing supportive conditions for goal-directed interaction in spaces outside of classrooms" (Thorne et al. 2021: 107; emphasis in original). This approach explores opportunities for language learning that emerge from new forms of online interaction such as online games that foster high levels of motivation and engagement, as well as the contextualised use of language (Thorne 2008) and the applications of social media in language learning (Androutsopoulos 2016).

As education tends to be reactive rather than proactive in the development and use of technologies, language education in particular searches for ways to adapt authentic resources and materials "from the wild" for educational purposes to foster learners' language competences. It draws on the potential, popularity and appeal of such resources to enrich and optimise language teaching methodologies and approaches. Online platforms that provide easy access to storing, accessing and exchanging information, as well as YouTube videos that offer a wealth of multimodal opportunities for language and cultural encounters and widely used in language education, serve as examples. However, their full potential for language education is still to be explored.

In addition to online platforms and social media, AI tools are challenging language education and prompting educators to rethink language learning in the digital age. With their rapidly evolving features, these tools hold immense potential for promoting inclusivity and differentiation in the classroom, while at the same time introducing new ethical and technological challenges for language education.

From an educational perspective, various AI tools support the so-called "internal differentiation", in which "the learning group remains together, and differentiation takes place, for example, via different learning materials, approaches or social forms" (Science on Stage 2016). They enable educators to adapt teaching materials to students' individual levels, saving lesson preparation time and offering a wide range of options. Furthermore, AI tools offer ample opportunities for fostering students' autonomous learning.

From a research perspective, the growing body of literature on AI that has emerged in recent times explores its impact on teaching methodologies, the ethical dilemmas it raises and the potential disadvantages of using generative AI tools in education. This rapid integration has outstripped the pace at which academic research can adapt, as noted by Huang et al. (2023). The discourse on AI covers a wide range of topics, including evaluations of its effectiveness in language learning and assessment, its role in providing lasting feedback, and its contribution to specific language skills. Furthermore, educational discourse examines the effectiveness of AI in teaching languages with limited datasets and its application in adaptive learning environments that enhance critical thinking. In language learning contexts, AI is most frequently used in automated writing evaluation, intelligent tutoring systems for reading and writing, and automated error detection (Huang et al. 2023).

Recent studies argue that AI can "hallucinate", producing output that is not entirely accurate (Lander 2024: 22) and may also "evidence gender and racial biases" (Montemarano & Williams 2024/2025: 27) or demonstrate "bias and discrimination (e.g. against women or ethnic minorities)" (Lander 2024: 23). Overall, such systems are also highly susceptible to all kinds of false information. The behaviour of Large Language Models (LLM), in particular, can often be neither explained nor predicted (Williamson & Prybutok 2024). Moreover, they lack the ability to interpret their own data or make ethical judgements about it (Lander 2024).

In educational contexts, AI tools need careful prompting to generate texts that align with the learners' levels (Montemarano & Williams 2024/2025) or to produce output in specific language varieties such as American English (Hunt 2024). Despite these limitations, AI tools hold immense potential for the second language classroom, offering significant benefits for both teachers and learners.

The advances in technologies inevitably raise questions about learner engagement and competences. This special issue aims to explore how students actively engage with digital technologies in both online and offline communities and in education, as well as how education contributes to the development of digital citizenship. "Competent digital citizens are able to respond to new and everyday challenges related to learning, work, employability, leisure, inclusion and participation in society, respecting human rights and intercultural differences" (Richardson & Milovidov 2019: 11–12).

The emergence of AI, in particular, is reshaping the educational landscape, prompting the crucial question of which future skills should be prioritised. Part of this human transformation is the abandonment of certain skills in the sense of "deskilling" (Rafner et al. 2021). It is therefore necessary to ask whether it is still

worthwhile to demand basic reading and writing skills if future language models can produce more elaborate texts than the average person.

Educational institutions now face a significant challenge: as elementary skills are increasingly outsourced to machines, dependency grows and the seemingly most convenient path may lead to the impoverishment of critical thinking. Even more concerning is that these basic skills are no longer being practised, even though they are essential for the critical evaluation of AI-generated content (Zhai et al. 2024; Gerlich 2025). It remains unclear how schools and other educational institutions should deal with digital tools; ideally, they would act less reactively and instead use their pedagogical expertise to actively shape digitalisation.

The scope of this volume

The contributions in this special issue are based on the relevant theme sessions of the aforementioned conference, "Language Learning and Teaching in Digital Transformation": (1) digital tools and methodologies in language education, (2) multimodal and digital literacy, and (3) AI and language education.

Digital tools and methodologies in language education

The contributions in this section explore the ways digital tools are being integrated into language learning and teaching, examining their impact on traditional learning paradigms, intercultural communication, and the ways in which they foster new pedagogical approaches.

The first contribution, by **Milan D. Todorović & Nataša A. Spacić**, sheds light on the current state of online language teaching, focusing on Serbian educators working with students from China. In their article entitled "Advantages and challenges that Serbian teachers face when teaching English as a foreign language to Chinese students online", the authors present the results of a survey conducted with 53 participants.

The respondents, predominantly female and aged between 26 and 35, including 36 with a linguistic educational background, reported several advantages of online teaching: enhanced creativity and flexibility, lower levels of stress, opportunities to meet students from around the world, the ability to build a good rapport with learners, access to a variety of tools, better support from companies compared with schools, and the high motivation and dedication of Chinese students compared to Serbian learners.

Challenges highlighted by the respondents included technical difficulties, parental interference, some students' lack of commitment, varying levels of IT support from companies, inappropriate learning environments on the students' side and

Chinese learners' high sensitivity to criticism. The authors conclude that English teachers generally make effective use of the opportunities offered by online teaching and suggest that a more competitive market could ensure better working conditions and rights for teachers.

The second article in this section, by **Diana Gross and Heike Wendt**, "Interkulturelle virtuelle Kooperationen mit eTwinning in der Primarstufe als Potenzial für den Sprachenunterricht?" [Intercultural virtual collaborations with eTwinning in primary education: opportunities for language teaching?] examines the way Austrian primary school teachers use eTwinning, an EU platform that facilitates virtual international projects. Despite its potential to develop language, cultural and digital skills, few primary teachers currently use it. The research analysed online training sessions where teachers learnt to implement eTwinning projects with European partner schools.

The findings show that teacher motivation, support and effective organisation are key to successful collaboration. Reported benefits included increased student confidence, openness to languages and authentic intercultural experiences, while challenges mainly included technical issues and coordinating with partners. Overall, eTwinning supports innovative teaching by integrating foreign languages with intercultural and digital education, but it requires targeted training and strong teacher commitment.

Multimodal and digital literacy

The contributions in this section highlight recent advancements in multimodal and digital literacies and explore their implications for language learning and teaching in contemporary language classrooms.

In his contribution, **Akra Chowchong,** "National flags and language learning: representing German in virtual schoolscapes", explores the use of national symbols such as the German flag on social media platforms created for language teachers in Thailand. Against the theoretical frameworks of schoolscape and virtual linguistic landscape studies, the author investigates the way semiotics in virtual spaces contributes to identity construction, as well as the inclusion and exclusion of languages. Using ethnographic interviews with the content producers and a content analysis of over a thousand multimodal posts, Chowchong discusses the role of profile and cover photos in representing the identity of the creators and the German language. Statistical analysis of the posts revealed significantly more semiotic elements referencing Germany than Austria or Switzerland. Similarly, ethnographic analysis showed that the platform creators employed national symbols as indexical markers linking Standard German with Germany. By discussing these key findings, the author draws attention to the importance of

critically reflecting on the stereotypical representation of German culture in the language classroom: "This approach not only enhances linguistic knowledge but also equips learners with the critical tools needed to navigate and question language ideologies in a globalized world" (Chowchong, in this special issue).

In their paper, "Machine translation literacy in the lower secondary classroom", **Meike Raaflaub and Brigitte Reber** investigate how teachers' and learners' attitudes to machine translation (MT) change during a six-week strategy training. The study involved 13- to 14-year-old Swiss students (grade 8) who learn French as a subject from grade 3 and English from grade 5. The intervention consisted of two units: the first introduced the learners to various strategies for using MT, while the second provided opportunities to apply MT during class. Using questionnaires (N = 112), focus group interviews (n = 15) and classroom observations, the researchers analysed perceptions of MT usefulness, MT literacy strategies and the emotions associated with MT use in the classroom. Findings indicated that participants' ratings of MT usefulness remained stable throughout the intervention. However, there was a significant change in emotions, as positive emotions increased after the intervention. In their discussion, the authors highlight the value of the reflective use of MT, particularly for learners with lower proficiency levels.

AI and language education

The contributions in this section delve into the rapid integration of AI in language learning, addressing both its potential benefits and the ethical dilemmas it presents.

In their article, "Les textes générés par l'IA comme modèle pédagogique en classe de FLE: aspects théoriques et pratiques" [AI-generated texts as a pedagogical model in the French as a Foreign Language classroom: theoretical and practical aspects], **Sara Cotelli Kureth** and **Hasti Noghrechi** examine the use of generative AI (GenAI), such as ChatGPT, in foreign language education, focusing on whether GenAI can effectively replace traditional corpus-based data-driven learning (DDL). While DDL involves learners analysing authentic language data to discover linguistic patterns, GenAI produces texts based on large language models, offering readily accessible examples and collocations. The authors conducted an action research study with 73 B1-level French learners at the University of Neuchâtel (Switzerland). Students were split into two groups: one used a traditional French corpus and the other used Microsoft Copilot to find verbs collocating with selected nouns. Results showed no significant difference in correctness or number of items found, although GenAI produced slightly more advanced vocabulary. Students found GenAI easier to use but required guidance to create effective prompts and critically interpret results. The study concludes that while GenAI is a useful additional tool, it does not necessarily outperform corpus-

based approaches and has limitations, including occasional errors, biases and overcomplex output for lower-level learners. Effective integration requires pedagogical framing, AI literacy and ethical considerations.

In the second contribution of this section, "The development and implementation of a video and AI-enhanced language learning platform", **Simone Ries** and **Irene Althaus**, investigate students' and teachers' experiences using the TONY language learning platform through the use of design-based research and qualitative content analysis of semi-structured interviews. The article consists of two parts: Phase I focused on the development and evaluation of the TONY platform, while Phase II described the integration of the AI-driven chatbot into the platform. The study, conducted in Switzerland, involved 28 students (aged 12-16) from three schools and four teachers from three schools. The findings showed generally positive perceptions of the use of authentic YouTube videos, highlighting their relevance to students' lives, increased enthusiasm for English classes, the platform's capacity to cater to various learner needs and language levels, and the appreciation of a wide range of topics. Recommendations for improvement from learners included providing a greater variety of videos and more interactive activities, while teachers noted the need for additional support for challenging video segments. The authors conclude that the use of authentic materials increases learners' motivation and engagement, while multimedia and multimodal customisation features cater for diverse student needs. They also suggest that the introduction of AI-driven features has the potential to shift the focus from differentiation to personalisation in language learning.

Conclusions and perspectives

The contributions in this special issue focus on digital advances in language learning and teaching, as well as on corresponding methodologies and forms of work, both inside and outside the classroom. More specifically, the issue offers novel approaches to investigating language education in a digital age by exploring the role of social media in language learning, the application of digital tools in multilingual classrooms, and the use of digital technologies and AI in language learning.

At the same time, the issue raises critical questions and encourages educators to reflect on pressing current concerns: How is contemporary language education being shaped and transformed in response to digitalisation? How can we ensure inclusion and equality of opportunity for all students and teachers? What should we prioritise and how can we maintain a focus on developing learners' basic competences while keeping pace with technological advances?

Looking at the past, it is clear that translation tools took considerable time to be developed, while AI features are now being designed and updated at an unprecedented speed. "Thus, those who adopt AI too swiftly may be missing the point about its proper use. For humans will always need to be in the driving seat" (Waites 2024/2025: 14). Some tools need time to develop, while others appear overnight, but learning itself should remain central regardless of the choice of technology.

Current digital developments compel teachers to rethink language education and explore new digital pathways. The application of these tools allows educators to learn alongside their students, discovering the opportunities offered by new technologies. Existing tools, however, do not provide us with a "fixed recipe" for their usage; instead, they invite us to engage in life-long digital learning.

The authors in this special issue have explored which tools can be applied in language education, how they can be used and the benefits they offer at the current stage of development. Future research in the area will need to address which skills educators and learners must develop to succeed in an increasingly technological era. Meanwhile, educators must remain critical and reflect on the added value of any tool before adopting it widely or without proper consideration.

Therefore, this special issue opens space for theoretical and critical debates on methodological innovations and empirical evidence, as well as the relationship between language learning and teaching digital transformation.

Acknowledgements

We express our sincere gratitude to our colleagues from Austria, Serbia, Switzerland and Thailand for their insightful and innovative articles, the experienced reviewers who contributed to this special issue with their valuable remarks and constructive criticism, and the main editor, Sara Cotelli, for her valuable support in the production of this special issue.

BIBLIOGRAPHY

Androutsopoulos, J. (2016). Digitale Medien: Ressourcen und Räume für interkulturelle Praktiken. *Networx,* (74). https://doi.org/10.15488/2965

Androutsopoulos, J. & Juffermans, K. (eds.). (2014). Digital language practices in superdiversity: Introduction. *Discourse Context & Media, Special Issue,* 4-5, 1-6. https://doi.org/10.1016/j.dcm.2014.08.002

Brown, S. & Hao, L. (2022). *Multimodal literacies in young emergent bilinguals: Beyond print-centric practices.* Clevedon: Multilingual Matters.

Gee, J. P. & Hayes, E. R. (2011). *Language and learning in the digital age*. Abingdon, UK, New York, NY: Routledge.

Gerlich, M. (2025). AI tools in society: Impacts on cognitive offloading and the future of critical thinking. *Societies, 15*, 6. https://doi.org/10.3390/soc15010006

Hilfsdorf Rocha, C., Coelho Liberali, F., & Heyden Megale, A. (2022). For a politically engaged and socioculturally just language education through critical multimodal literacy in Brazilian context. In S. Brown, & L. Hao (eds.). *Multimodal literacies in young emergent bilinguals: Beyond print-centric practices* (pp. 86-102). Multilingual Matters.

Huang, X., Di, Z., Cheng G., Chen X. & Xie, H. (2023). Trends, research issues and applications of artificial intelligence in language education. *Educational Technology & Society, 26*(1), 112-131.

Hunt, Ch. (2024). Spelling bias in AI chatbots and its implications. *ETAS Journal, 1*(2), 30-31.

Krompák, E. (2025). Introduction: critical multimodal literacy. Advancing educational linguistics in teacher education. *Educational Linguistics*. https://doi.org/10.1515/eduling-2025-0020

Lander, S. (2024/2025). Differences between human intelligence and AI. *ETAS Journal, 1*(2), 22-24.

Montemarano, F. & Williams, L. (2024/2025). AI in the language classroom: helping students continue learning in an age of possible shortcuts. *ETAS Journal, 1*(2), 25-27.

Rafner, J., Dellermann, D., Hjorth, A., Verasztó, D., Kampf, C., et al. (2022). Deskilling, upskilling, and reskilling: a case for hybrid intelligence. *Morals & Machines, 1*(2), 24-39. http://dx.doi.org/10.5771/2747-5174-2021-2-24

Richardson, J. & Milovidov, E. (2019). *Digital citizenship handbook*. Council of Europe.

Science on Stage. (2016, October 27). *How to provide support in a diverse classroom* [Teaching material]. Science on Stage Europe. https://www.science-on-stage.eu/material/how-provide-support-diverse-classroom

Thorne, S. L. (2008). Transcultural communication in open internet environments and massively multiplayer online games. In S. S. Magnan (ed.), *Mediating discourse online* (pp. 305-327). Amsterdam: John Benjamins.

Thorne, S. L., Hellermann, J. & Jakonen, T. (2021). Rewilding language education: emergent assemblages and entangled actions. *The Modern Language Journal, 105*(S1), 106-125.

Thurlow, C. (2018). Digital discourse: Locating language in new/social media. In J. Burgess, A. Marwick & T. Poell (eds.), *The SAGE handbook of social media* (pp. 135-145). New York: Sage.

Waites, C. (2024/2025). AI development since the 1960s: The good and the bad. *ETAS Journal, 1*(2), 12-14.

Williamson, S. M. & Prybutok, V. (2024). The era of artificial intelligence deception: Unraveling the complexities of false realities and emerging threats of misinformation. *Information, 15*, 299. https://doi.org/10.3390/info15060299

Zhai, C., Wibowo, S. & Li, L. D. (2024). The effects of over-reliance on AI dialogue systems on students' cognitive abilities: A systematic review. *Smart Learning Environments, 11*, 28. https://doi.org/10.1186/s40561-024-00316-7