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# ChatGPT in Language Teaching and Learning: Exploring the Road We're Travelling

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## Abstract

This introduction to the special issue examines the integration of ChatGPT and similar generative AI technologies in language teaching and learning. It examines the rapid evolution of AI tools since 2022, with particular focus on their applications in educational settings and the mixed responses they have generated among educators and learners. While some educators embrace these tools for their potential to automate and enhance instructional tasks, others express concern over issues such as academic integrity, accuracy, and potential job displacement. This special issue explores various perspectives on the use of ChatGPT, including its benefits in providing non-judgmental feedback, aiding material creation, and enhancing language practice, alongside challenges like ethical use, student over-reliance, and the evolving digital literacy demands for both teachers and students. The collection of articles in this special issue seeks to balance the hype with practical insights and offers a framework for understanding the nuanced impacts of generative AI on second language education.

**Keywords:** ChatGPT, generative AI, language education, research

## Introduction

It was in November 2022 that the mainstream media first picked up on OpenAI's most recent technology, ChatGPT. The way in which it not only easily and seamlessly comprehended complex prompts inputted by users, but also responded with naturalistic human-like responses that brought together immense volumes of information in seconds astounded many who saw this. This was, we were told, Generative Pre-trained Transformer technology, based on immensely complex large language models (LLMs) that had gone through intensive training from both humans and computers to produce a tool that allowed interactions between technology and humans such as had never been seen before. This version of ChatGPT was, as we are now all aware, based on GPT-3.5, a 2023 updated version of GPT-3

that was released in 2020, comprised of an astounding 175 billion parameters that made sense of the gargantuan database at its core. This by far superseded the earlier versions of GPT-2 released in 2019 with 2.5 billion parameters, which already made GPT-1—released just one year earlier in 2018—seem hopelessly obsolete with "just" 1.7 million parameters. It is not only the mind-boggling increases in complexity of these tools over these version updates that deserves attention, but also the short amount of time between these releases, with exponential increases in complexity taking place in the one year between them.

The next major release came in 2023 with GPT-4, with an increase in complexity that brought with it not only excitement, but also tones of gloom and danger, as the public realised that they had only just witnessed the beginning of what generative artificial intelligence (GenAI) was capable of. With the staggering power of 170 trillion parameters, this new version of ChatGPT was capable of not only of even more human-like responses than its predecessors, but it could also synthesise complex reports based on data already in its database—much of which had been gleaned from the Internet and other massive repositories—as well as files uploaded directly by users. It could help with brainstorming of ideas, create engaging fictional storylines, generate academic reports, manuscripts, and images, as well as assist with proofreading and paraphrasing of chunks of text, debug software code, and even identify trends in submitted data files, all in a matter of seconds. Workers in a wide range of industries expressed genuine concern about their own future, founded on fears that their jobs could and would quickly become redundant in the face of such phenomenal processing power. Education has not escaped these concerns, and amidst a situation where many institutions were already cutting back on language teaching programs because of the perceived effectiveness of language learning apps and software, language teachers have felt that they are quickly in danger of becoming extinct in a world where GenAI is advancing at a speed that could almost be referred to as frightening. Others have, however, seen the potential for these technologies to take over some of the more labor-intensive areas of their workload to allow them to focus on other areas that they feel could benefit their learners, where GenAI can assist with creation of teaching materials, come up with ideas that go beyond their own immediate expertise, and assist with providing feedback on learner writing relatively painlessly. These two perspectives have resulted in a division of views that has the potential to divide the language teaching profession itself between those that are willing to incorporate these tools into their teaching contexts and those who feel that they are not able to keep up with the exponential changes that are taking place around them and choose to reject them.

## Reflecting on the Developments in AI in Language Teaching

Given the changes that have been seen in the evolution of AI since late 2022, it is easy to forget that AI has featured in research in language education for over half a century. As early as the 1970s, researchers were already exploring the possibility of computers understanding, replicating, and learning human language (Winograd, 1973; Pinker, 1979). Many of the concepts that have now been associated with GenAI have been around for decades, such as chatbots (Underwood, 1982), modelling of teacher behavior (Bailin, 1988) including intelligent tutors (Nyns, 1989), automated error correction (Heift, 2003; Dodigovic, 2007), and automatic writing evaluation (Warschauer & Grimes, 2008; Hegelheimer et al., 2016). The scale and scope of these most recent developments, however, bring with them a need for reconceptualization of many aspects of our teaching. These technological advancements have been referred to as a "paradigm shift" (Har, 2024), and as much consternation there is about their potential impact on language education, ultimately GenAI tools like ChatGPT are here to stay. Whether these technologies can ultimately replace teachers is still very much a topic of contention, but what is slowly becoming apparent is that those teachers who choose to reject these technologies are at risk of losing ground to those who are willing to explore how they can used in their individual contexts, even if not

"embracing" them per se. While the technologies have certainly advanced, at the same time there is still much to be learned from the research that has taken place over the several decades since before the dawn of ChatGPT including, but not limited to, task design, user interface, levels of support, feedback, self-regulation, and teacher and learner training.

This special issue seeks to look through some of the hype (be that either positive or negative) surrounding ChatGPT, as we are beginning to come to terms with its affordances and how to make the most of them, with sufficient consideration of issues related to pedagogy, research, teacher wellbeing, ethics, and legal implications. Through exploring the affordances of ChatGPT, we know that it generates very human-like responses to prompts that are written in human language, making it very different from many earlier technologies which required some degree of programming knowledge or understanding of parameters for narrowing down queries to generate the desired output.

As AI technologies evolve, and this has been particularly evident with the emergence of generative AI tools such as ChatGPT, various challenges surrounding AI have also become apparent. While there are those teachers who are willing to embrace these tools, there are others who undervalue or prohibit them. The reasons for these perspectives are certainly not invalid, as there are worries about inaccuracies in translation or information (Kocoń et al., 2023; Lee, 2021 and fears of over-reliance on translation and/or cheating (e.g., Moon, 2021; Mustroph & Steinbock, 2024). The lack of clear source attribution by ChatGPT has been an ongoing concern (Ali & Djalilian, 2023), as well as the dangers of hallucination (Babl & Babl, 2023), where information generated by AI appears plausible at first glance but is in fact false. There are countless examples of references being created by AI using names of real researchers with a track record in that field, cited as being published in actual journals—sometimes even with a DOI—but the information is false in that the reference does not actually exist. Other serious issues include ownership of textual data created by ChatGPT (Buendgens-Kosten, 2024), which brings us to other legal issues that will be discussed later.

There is the danger that teachers impose their own positive or negative views on the learners (cf., Stockwell, 2013) rather than allowing learners to develop their own perspectives. It is also possible that there may be gaps between learner and teacher perspectives towards the use of tools like ChatGPT; on the one hand, teachers are concerned about inappropriate use and academic dishonesty, but learners are often worried about "breaking the rules" (Nino Alonso, 2022). In one study, as many as a third of learners indicated a lack of clarity regarding what these "rules" of permissible use are (Wang, 2024). Herein lies other potential concerns, where teachers may hold negative stereotypes towards learners, often assuming that they wish to use generative AI unethically. AI detection tools have been notoriously inaccurate (Dadkhah et al., 2023), and learners who have been accused of inappropriate use of tools like ChatGPT when this was not actually the case may suffer long-term insecurities or even psychological distress about their studies as a result.

As alluded to above, at the time of writing, clear policies and guidelines are still forthcoming in many institutions. Some have internal guidelines, yet others leave the final decisions up to teaching staff, resulting in differences between what each teacher does, even within the same institution. This can confuse learners, who need to be aware of different rules for different subjects. This inconsistency can lead to greater anxiety on the part of learners, and at the same time, more stress on the part of teachers who feel that their individual guidelines (should they be clearly articulated to learners) are not being followed. In extreme cases, there may even be hypocrisy, with teachers telling students not to use AI but then using it themselves. There can be little doubt that AI has the potential to reduce the burden of development of teaching materials, but practices of both teachers and learners overusing these tools can result in an AI paradox (Crocker, 2023), where teachers create tasks for students using AI that students carry out using AI.

This brings us to the question of why some learners choose to use AI tools to complete assigned tasks and activities with very little effort on their own part rather than actively engaging in them, using AI as a support rather than as a replacement for their own work. This practice has been referred to as *false engagement*, which is an instrumental approach to engagement where learners carry out tasks or activities merely as a means to an end (Bryson & Hand, 2008) instead of seeking out their academic or pedagogical value. While the technology has been deemed responsible for this behavior, it is conceivable that the reason why learners look for the "easy way out" is that they not fully understanding the pedagogical purposes of a task.

This clearly has implications for assessment practices as well, where many teachers are concerned about the ways in which learners engage in assessment tasks and their use of AI in completing it, as discussed earlier. There is a clear need to consider if assessment practices adopted by teachers align with the available tools. This has been an issue since the spread of the Internet and machine translation (see Lee, 2021, where learners are easily able to easily access a vast amount of information and collate this with little effort and possible even with minimum comprehension of the content, translating chunks of text into the target language using tools such as Google Translate and DeepL. With generative AI tools like ChatGPT, the temptation for learners to use these tools to completely write assignments and submit them as if they were written by themselves is real. To avoid this, assignments can be re-thought to make the general nature of generative AI responses inappropriate (Perkins, 2023; Riley, 2023). Furthermore, assessment practices that look not only at the *products* of assessment but also at the *processes* are likely to become necessary, but how to do this remains an issue for further discussion.

A good deal of current research into generative AI tools such as ChatGPT make claims about the ability of these tools to enhance learners' L2 proficiency. This has been particularly evident in writing, where it has been used as an "ideas bag" at the drafting stage of writing (Barrot, 2023), a "writing buddy" for advanced writers (Strobl et al., 2024), for proofreading and paraphrasing (Liu & Ma, 2023), and as a means of identifying errors and avoiding them in future (Wang, 2024). The chatbot function of generative AI has also been reported as a means of seeking non-judgmental feedback and to assist learners in setting learning goals (Liu et al., 2024) as well as a rehearsal for human-human interactions (Liu & Ma, 2023). The range of potential innovative uses of generative AI is indeed though-provoking, and as the technology continues to develop, there is no doubt that the possibilities will also continue to expand.

## Looking Critically at ChatGPT

Despite the obvious potential of generative AI, and its current flagship, ChatGPT, there are also many areas of concern. As a disruptive technology (cf. Hampel, 2019), it is natural that generative AI has brought about—and will continue to bring about—change in educational settings. As with almost all disruptive technologies, some of these changes are positive while others are somewhat less so, but the key point to bear in mind is that the technology is here to stay, and that means in some shape or form, all of us need to come to terms with the broad range of impacts that GenAI is having on our educational settings. This is only possible with a shift in perception (Kohler, 2024), and if it is viewed as a threat rather than a potential ally, then this can have consequences on our practices using it (see Stockwell & Wang, 2023). Thus, keeping an eye on the practicalities along with the possibilities is an essential part of making best use of the technologies. Equipping ourselves with appropriate digital literacy skills is key in achieving this, but as these new tools are appearing, pinning down what these skills is difficult. As Son (2024) contends, knowing what the tools are, what they can do, and how to use them ethically are central factors of digital literacy.

While there are many others that could be included, I would like to focus on four main areas that need to be considered in this rapidly changing technological evolution of generative AI tools. Firstly, as Żammit (2024) points out, the knowledge base of AI tools is not consistent across languages, demonstrated by the difficulties her learners encountered while interacting with ChatGPT in Maltese. It is well known that most LLMs are skewed towards English (see Wang & Stockwell, 2023, for a discussion), and this is reflected not only in the language, but also in the concepts that are stored in their repositories. This allows for not only linguistic difficulties but also skews and biases that are related to the source information that is accessed through generative AI tools, that can end up producing output that is inappropriate on many levels. The authority with which generative AI produces text can result in assumptions about the truth of this output, and without the skills to differentiate between what is factual, what is impartial, and what is potentially offensive or discriminatory.

Secondly, with the massive amount of attention that generative AI tools are attracting in the literature, it is easy to make assumptions about its ability to contribute to second language development. At present, the evidence for learner development as a result of the use of AI is tenuous. Much of the published research still focuses on *perceptions* rather than actual *measurable* outcomes. Most studies have focused on the feedback provided by the AI tools (e.g., Barrot, 2023), but a search at the time of writing this introduction was unable to locate any reliable studies that looked at the direct impact of AI on writing outcomes. Even less evident is research that attempts to explore whether there is any positive impact from using generative AI when this support is withdrawn. One would assume that while using AI tools, we would expect to see improvements in learners' writing in terms of, at the very least, grammatical accuracy. But do any of the textual corrections made by generative AI actually "stick"? This could well be likened to what might termed as a "calculator effect" where most people are quite capable of carrying out quite complex calculations when they have access to calculators, but unable to do even relatively simple calculations if they do not have that access, even though they may have been able to before they started relying on calculators.

The parallels with AI usage are obvious. Learners may be better writers when they have access to AI tools, but less able to write—perhaps even less able than they were before using AI—when they no longer are able to use them. So, to equate better writing with AI with better L2 writing in general may be naive. In saying this, in the way that most people these days have little need to function without calculators, it is not unfeasible that the day will come when learners always have AI tools handy, and as such are able to make the most of them whenever required to. In this case, the assessment of L2 writing may need to extend beyond just looking at learners' ability to write in the target language, but to also explore how effectively they are able to use AI tools to assist them in their writing as a skill in itself.

Thirdly, given the stresses that many teachers are finding with the rapid advances of AI technologies, there is a need to carve out their own existence amongst them. There is a growing body of research that shows that there are significant differences between how human teachers and AI tools evaluate writing in second language (e.g., Kim et al., 2024), suggesting that where AI tools focus more on the mechanical aspects, teachers are typically able to provide feedback on the content. This can allow for a division of duties that enable a symbiotic relationship between teachers and GenAI rather than a mutually exclusive one. Coming to the realization that there are serious limitations with AI technologies in certain tasks can enable teachers to come to terms with them, providing them with better opportunities for digital wellbeing in an AI era (Bentley et al., 2024). Furthermore, finding ways to open dialogue between all levels of management with teachers and students can avoid these technologies from being an "elephant in the classroom" (Loock, Lechauguette, & Holt, 2022) that no one is willing to come to terms with.

Finally, teachers, learners, and administrators will need to face the emerging legal issues associated with AI. This is a multifaceted problem that spans both education and research (Manyengo, 2023). Frank questions need to be asked, such as who owns AI output? How much is too much assistance from GenAI and when does it become unacceptable usage? These relate directly to problems of copyright, royalties, or other benefits such as promotion that may be gained using generated text from AI tools (see Smits & Borghuis, 2022). As researchers, it is possible to misrepresent our skills and knowledge by having text produced by tools such as ChatGPT and then claiming it as our own, leading to securing a job or promotion. What are the legal implications in this case? Furthermore, what happens when there are errors or if there are security breaches? While AI developers are now including an increasing number of disclaimers, is this enough to clear them from blame (see Elliott & Maccarthaigh, 2024)? There are no clear answers to many of these questions at this point, but it should be kept in mind that legal issues are very much in the background behind the use of generative AI tools, of which we as teachers, researchers, administrators, or learners need to be aware.

## Conclusion

The purpose of this special issue is to open dialogue about the most well-established generative AI tool at this time, ChatGPT. It was indeed the tool that prompted the discussions and speculations that we have seen over the past two years, and the articles in the issue come from various perspectives that examine the roles and perceptions of teachers and learners, exploring policy, teacher well-being, psycho-social, ethical, and pedagogical issues regarding ChatGPT. The eight articles that appear in this special issue come from different contexts and focus on different elements, highlighting the complexities that are experienced in this time of rapid change caused by ChatGPT and other generative AI tools that have appeared since. These should each provide a vaulting block to move on to further discussion and consideration of the possibilities, realities, and the potential dangers of generative in second language teaching and learning, and I am sure that they can provide insights into GenAI to help make the most of this powerful tool.

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