

Artificial Intelligence – scary paradigm shift or opportunity to evolve?

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Abstract

This feature article sets out to offer some ideas and provoke discussion on the future of Artificial Intelligence Large Language Models in language education. The brief I was given is simple, to draw on my own observation, understanding and experience to set out a positive take on the development of AI Large Language Models in the education sector. So, caveat lector, this is not written from a neutral perspective, all opinions are my own unless stated otherwise.

I've set out to offer a brief survey of the major opportunities AI presents for language learners and teachers. These include an expansion in capacity and types of practice, support for the study environment and the roles of student and teacher. I set out a vision of a disruptive but ultimately beneficial impact on major aspects of language learning such as assessment and access to instruction. I have concluded by reflecting on the continuity and future possibilities of deep and ubiquitous AI augmentation of human language use.

Keywords AI, artificial intelligence, large language models, natural language processing, language learning, educational technology, future of language learning

I tend to hold the view that if you think AI can replace you as a teacher, you might be right. However, this article aims to encourage the hope that there is still a place for human teachers in the future.

pictures of novel, movie and TV characters in unfamiliar situations, and trying to understand what AI can do that is relevant to language teaching and learning. AI can definitely write and grade essays, it can produce and respond to poetry, it can play a lot of language based games that you might use in the classroom. It can even do some things that some teachers and learners can't or won't - it can appear to listen carefully and change its mind. It can also cooperate in a way that almost matches my experiences with some of the very best human teachers I've had the pleasure of working with. Please hold that "almost" in your mind, it's going to be important later.

1. Introduction

In my own teaching practice and research I've tried to make a distinction between playing around with AI, mainly by having debates with ChatGPT at 2am and drawing

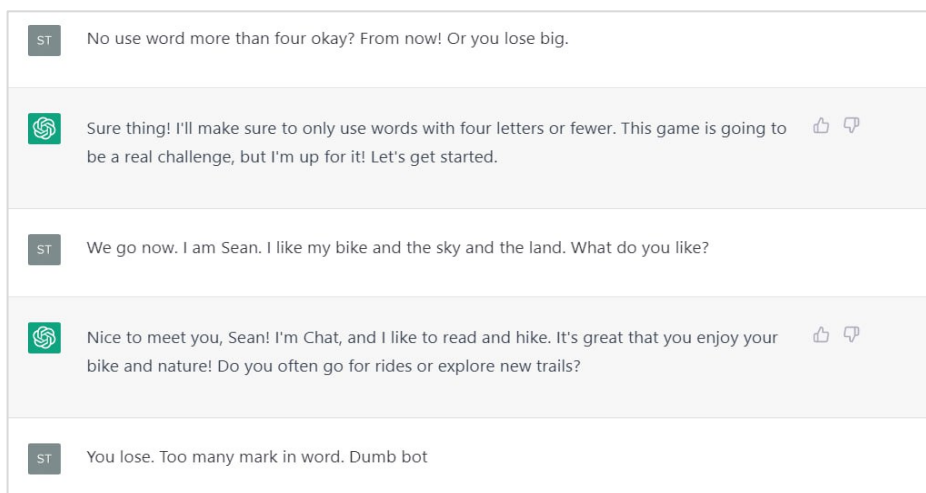


Figure 1. Chat records between the author and ChatGPT.

While there is definitely strong evidence on both sides of the debate about the positive or negative impact of AI on language education, these sides are not as polarised as might first appear to be the case – nobody seems to disagree about the transformational impact of AI in language education. Huge challenges are posed by AI integrating with the profoundly human field of education (leaving aside the bigger question of whether AI is a step towards the end of our species as we know it). I choose here to assume that we will recognise and respond to these challenges. I believe that we will reflect, mitigate, adapt, and to some extent fail, as part of the cycle of improving how we face change. I choose to believe this because it seems clear that the opportunity offered by AI far outweighs the threat. Paradigm shifts have always seemed scary, always contained implicit threat, and generally appeared inevitable with hindsight. AI can deliver enhanced learning experiences that transcend the current status quo, so logically a new balance between progressive and conservative forces will be negotiated. This process will likely be equally uncomfortable and exciting.

2. AI's Analytical Power

The power of an AI Large Language Model (LLM) lies in its ability to read vast amounts of linguistic data swiftly and accurately. Natural Language Processing (NLP), a subset of AI, enables machines to understand, interpret, and respond to human language. By analysing language structures, AI identifies patterns in speech/text, syntax, and grammar. For instance, an AI language application or plugin can identify and highlight common grammatical errors in learner sentences and offer targeted exercises for improvement. AI also offers the possibility of real-time feedback for language users. An AI-powered app offers the possibility of instantly identifying pronunciation errors, suggesting corrections, and modelling pronunciation through a real-time conversation. This personalised approach could in time develop to the point of maintaining an optimal level of challenge, preventing learners from feeling overwhelmed or under stimulated. AI-driven language platforms can create immersive and responsive environments that facilitate practical language use. Learners can engage in simulated conversations with AI characters, replicating real-life scenarios. These interactions enable learners to apply language skills authentically, bridging the gap between classroom learning and real-world communication. The opportunity here is for a widely accessible language partner for speaking practice, around the world, 24 hours a day, the impact on accuracy and fluency in language learning is literally incalculable. Of course, there are attendant questions – will the remaining barriers to accessing this technology deepen existing inequalities? Will the convenience of technological solutions lead to learners preferring language practice mediated by devices rather than the challenge of unpredictable and risky human interaction? As AI advances, ethical considerations are being increasingly highlighted in the attendant debate. This necessitates serious discussions on data privacy, AI bias, policy, governance and enforcement structures, and

equitable access to education. Educators will play a vital role in shaping these conversations, ensuring that AI technologies are harnessed responsibly to create a fair and inclusive learning landscape. These issues appear to be of real concern, but not insurmountable if we choose to bring focus and resources to them in the service of community and individual values. Ultimately these are questions of social conscience, political will, and underlying economic structures as well as technological ethics.

3. Enhanced Learning Experiences Through AI

A key advantage of AI is the ability to adapt to learner needs, ensuring challenges that match their proficiency levels and facilitating a dynamic learning journey. Imagine an AI language app that focuses on pronunciation, powered by the most complex library of human language ever built. As a learner practices speaking, the AI analyses their speech and identifies areas for improvement. It might detect specific sounds that are challenging for the learner and offer targeted exercises to enhance their pronunciation, it might be able to compare the individual learner profile with a pattern library based on their L1. AI's analysis goes beyond individual words. It can evaluate the flow of sentences and the natural rhythm of conversation. For example, if a learner's sentences sound disjointed, the AI can suggest techniques to achieve smoother transitions between words, resulting in more fluent speech.

This level of personalised feedback allows learners to address their own unique linguistic needs. In my own teaching practice, to the limits of my modest ability, I have always found that bringing learners into the process supports their progress. Learners are often fascinated and engaged as they develop their understanding of the methods that underlie language practice. The potential of AI to develop these individual profiles and inform language teachers and learners is undeniable. However, as noted previously, the question of the impact on the relationship between learners, teachers and language users will be raised to even greater prominence. In a world where everyone with a mobile phone and an internet connection has access to the most comprehensive linguistic data set ever created, and an intelligence focused on their specific needs, what will human teachers be for?

AI-enabled adaptive immersion will certainly be one of the biggest opportunities offered by LLMs. Learners will engage in dialogues with AI characters set in various scenarios, such as ordering food in a restaurant or asking for directions. These interactions will closely resemble real-life situations, providing learners with valuable experience in practical language use. As learners respond to AI characters, they will receive instant feedback on their choices, helping them to better realise the subtleties of conversational language. This will no doubt be a huge shift from the current state of the automatic translation art, but it does lead one to wonder whether an AI LLM will ever bridge the gap between “almost human” and human. Human language is possibly the most complex, chaotic system we've ever produced, and it seems that there remains, for now a clear distinction between “intelligent”

and “conscious”. Language models respond to prompts by using incredibly complex statistical models, vast data sets, and technical processes like “backwards chaining”, so let us accept that AI LLM’s pass the test for intelligence. However, it does not follow that AI’s are currently conscious, we do not have evidence that they have experiences. This seems to me to be irreducible. There remains a fundamental difference between human cooperation and human-machine interaction. The two may be almost indistinguishable in many contexts, but the specific qualities of each remain separate and important. I’ll return to this, let’s look in more detail at teacher-AI cooperation.

4. AI’s Role in Empowering Educators and Learners

Recently I was in conversation with some former colleagues. We were discussing the idea (and reality) that AI can be used for academic misconduct. One university tutor spoke at length about the difficulty in detecting AI generated text, and the huge potential negative impact on learning if students can reliably “contract out” their essays to an LLM. When they had finished, another one of my former colleagues, fairly reserved by nature, quietly said “I think we’re going to have to go back to giving verbal exams on student work”. The rather uncharitable and unprintable reply was centred on the amount of time it would take to conduct a *viva* for each extended writing assessment in a university year. The consensus eventually emerged that just about enough time could be saved, if ChatGPT could be coaxed into marking the essays written by students (and their helpers) and that a verbal exam could be a reliable way of checking if any actual learning had taken place, certainly at least as reliable as the average essay. Education has entered an arguably long overdue period of transformation, which could ironically see technology facilitate a strengthening of student-teacher connections. AI disrupts traditional assessment methods by amplifying the voices that have long been calling for more authentic, dynamic and continuous evaluation of learning. Traditional exams often measure memorisation and highly specific communicative genres ahead of critical thinking and problem-solving skills. AI-powered assessment platforms analyse a student’s responses, across a range of dimensions, but no less significantly, AI pushes teachers and leaders to reconsider their assumptions about assessment. This may be a less comfortable relationship with technology, but it will certainly be a productive one.

It is easy to optimistically imagine a scenario where students would benefit from the kind of contact with educators that was previously only the privilege of a tiny minority. NLP-driven AI will make language education more accessible. Learners with disabilities, such as dyslexia, benefit from AI tools that offer real-time text-to-speech and speech-to-text conversion. It would be irresponsible to throw out the opportunity in front of us in order to avoid engaging with the challenge of modernising assessment. I’ve provided a sample of relevant resources on how this challenge and others are already being initially addressed in the “Further Reading” section at the end of

this article.

AI-powered virtual tutors bridge the gap between learners and educators, extending learning beyond the classroom. Learners can seek immediate clarifications and explanations for complex language concepts, breaking down barriers that might hinder progress. Whether it’s unraveling the intricacies of verb conjugation or understanding the nuances of idiomatic expressions, AI can act as a companion that offers guidance on-demand. AI can recommend relevant articles, podcasts, and videos, catering to learners’ passions and deepening their language proficiency in areas that resonate with them.

Through AI-generated insights, educators can gain valuable data-driven perspectives on their students’ learning journeys, far beyond the utility of traditional corpora. Imagine an AI system that tracks learners’ progress, identifying features such as commonly misunderstood grammar rules, usage idiosyncrasies, or challenging vocabulary. Consider an AI platform that assesses language learners’ writing samples. By analysing common errors and patterns, the AI generates a personalised roadmap for improvement, suggesting exercises that directly target identified weaknesses. There’s nothing to stop AI from analysing spoken language interactions, providing insights into pronunciation challenges and recommending focused practice. Language learners can engage in group discussions, practice conversational skills, and collaboratively work on assignments through AI-mediated platforms. With the concerns already mentioned in mind, these interactions can mirror, if not substitute perfectly for, real-world language use, instilling confidence and improving overall communication abilities, all while capitalising on the power of AI as a facilitator. Educators can then tailor their teaching strategies, crafting targeted lessons and exercises to address these specific areas of concern. As AI evolves, it may gain further access to real-time language data from diverse sources, including social media, news articles, and academic texts. This will enable AI to stay current and equip learners with more up-to-date language skills, preparing them more effectively for the linguistically dynamic world beyond the classroom. Researchers in diverse fields like sociolinguistics and World Englishes will have access to data and analytical insights never previously possible. We are already beginning to realise the impact of the need to interact with AI through natural language, in prompt engineering, content creation and the ability of AI LLM’s to tailor their output to requirements. When access to rhetorical and logical development is limited by the maximum boundary of what the human mind can process, how much better can our species get at communicating?

If we accept for a moment the possibility of a partnership between human educators and AI technologies this could become a cornerstone of enriched language learning. I see this as not only optimising language acquisition but creating space and time for a renewed focus on the well-being of learners, and for human connection between teachers and learners to broaden and deepen. Again, perhaps optimistically, I see it as self evident that while AI remains at the level of intelligence rather than consciousness, the learning process for humans will remain necessarily fundamentally

human. We have adopted some technological idioms to describe our human experience, such as “hard wired” and “plugged in”, but we are not creatures of wires and plugs, our connections are intrinsically human, mammalian, organic. As far as we are currently aware, the only thing in the universe that is capable of thinking, feeling and caring about human beings is....a human being. We can only thrive as socialised beings. We are psychologically and biologically primed to respond to one another. Nothing triggers the mirror neurons of *homo sapiens sapiens* quite like members of the same species. Despite the exciting and promising leaps in technology, that fact of our embodied consciousness remains unlikely to change soon.

That being said, AI, in the hands of educators, can engage students on a deeply personal level. Beyond classroom discussions, imagine an AI-assisted system that offers one-on-one assessment sessions. Through conversations, AI gauges a student’s linguistic strengths and weaknesses, providing educators with detailed performance data. With this information, educators can create bespoke learning pathways, nurturing each student’s unique linguistic journey beyond top-down programmes of study that must necessarily strike hard balances between student and institutional needs. The result is a classroom experience that optimally utilises time, focusing on individualised contact time while AI provides insights. AI may recognise linguistic patterns, but human educators identify curiosity or confusion instinctively. Student well-being requires emotional support, encouragement, and mentorship. Human educators forge emotional connections with students that go beyond academic instruction. These connections are built on understanding, empathy, and mutual respect. In this model, AI becomes an optimised teaching assistant, facilitating the student-teacher relationship. AI’s future role isn’t to replace human educators but to amplify their impact. With routine tasks automated, educators can focus on mentorship, one-on-one interactions, and guiding students through advanced concepts. AI handles administrative duties, freeing educators to invest more time in meaningful connections and personalised instruction. Imagine a future where educators have more time to mentor students individually, providing guidance on career paths, offering academic counseling, and fostering a strong support system. Educators, armed with AI insights, can design tailored exercises to collectively address this challenge. The result is a classroom experience that utilises time more effectively, focusing on individualised guidance while AI provides high level insights.

Will it always matter if an intervention comes from a codebase or from a human person who has chosen to care about another? Personally, I would accept lower productivity and efficiency in order to preserve moments of meaningful human connection like the ones I have experienced in my professional life. These moments have a value in themselves that I believe our technology will promote and preserve rather than undermine.

5. Natural Language Processing for Authentic Learning

The advent of AI and Natural Language Processing (NLP) has revolutionised language education by introducing more authentic, real-world interactions into the learning process. Through AI-driven chatbots and language models, learners can engage in dynamic conversations, enhancing fluency and confidence in practical language use. Language learners can use AI chatbots to engage in simulated conversations. These chatbots employ NLP algorithms to understand context, intent, and nuances, providing tailored responses that mimic authentic language interactions. For instance, a learner practicing a restaurant dialogue with an AI chatbot receives not only correct grammar and vocabulary suggestions but also contextually relevant prompts that facilitate natural conversation flow. NLP-powered AI models offer learners the opportunity to immerse themselves in authentic language use. Learners can write essays, emails, or participate in virtual discussions, receiving AI-generated feedback that evaluates grammar, coherence, and overall language proficiency. The feedback is not only comprehensive but also immediate, enabling learners to refine their skills in real time, massively expanding the access to linguistic practice and feedback.

As mentioned above, NLP goes beyond grammar, it is capable of operating on the level of context and intent. AI models can decipher the meaning behind idiomatic expressions, cultural references, and may even be trained to pick up on emotional cues. It will not be long until AI models will be used to engage in training and even therapeutic settings where emotional communication is the focus.

6. Identifying Learning Trends and Challenges

AI’s data analysis ability will reveal overarching trends and challenges within a class, cohort or population. This will change the teacher training learning curve and give educators at all stages of their career access to powerful data insights. It’s easy to imagine the impact of AI quickly identifying if numerous students consistently misinterpret a particular grammar rule, allowing educators to address it comprehensively during class discussions. What is more difficult to conceptualise is the impact of an AI driven awareness of learner Englishes and other additional language learning on a global scale. This proactive approach transforms challenges into learning opportunities. Identifying trends also helps educators to determine whether and to what extent specific teaching methods are resonating with the majority of students or if adjustments are needed.

Educators will refine their teaching strategies by utilising AI-generated insights. Learner profiles on entry and exit to courses of study will be much more finely detailed, allowing the analysis of needs and the development of tasks and study plans at a demonstrably more effective level. Data-driven insights enable educators

to quantify progress longitudinally. By analysing metrics such as test scores, participation rates, and specific task experience for learners, educators can evaluate the efficacy of their teaching strategies. This quantitative feedback guides continuous improvement, enhancing the overall learning environment. Work is already being done on integrating AI tools into the [TPACK framework](#) for language learning (see “Further Reading”), and this type of instructional design will continue to grow in prominence.

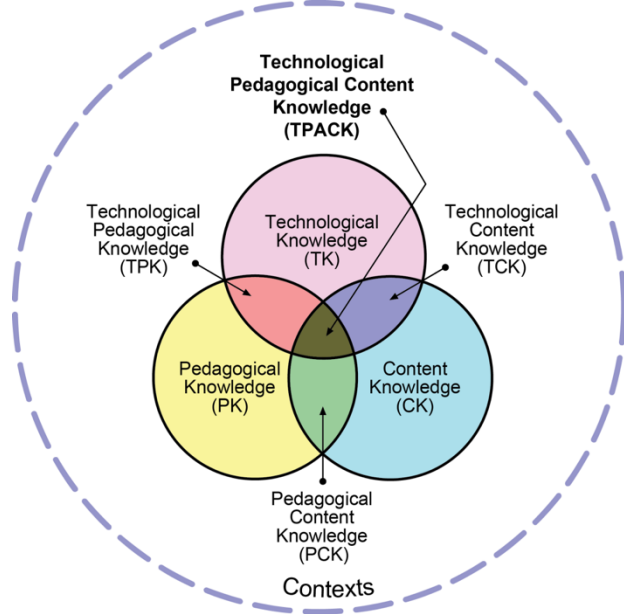


Figure 2. TPACK Framework.

Data-driven insights enable educators to quantify progress over time. By analysing metrics such as test scores, participation rates, and completion rates, educators gauge the efficacy of their teaching strategies. This quantitative feedback will enable and guide continuous improvement, enhancing the overall learning experience without increasing the demands on teacher time. Going further, AI may have a disproportionately positive impact on students who are struggling for a variety of reasons. AI-generated data may provide early intervention opportunities. If data reveals that a student’s performance is declining or deviating from their individual norm, educators can intervene promptly, offering additional support or customised tasks. This proactive approach prevents learning gaps from widening, and outside factors from impinging on learning. This will elevate differentiation and support student goals.

7. Future Possibilities

As AI continues to evolve, the future of language education is to some degree uncertain. More positively, we can conceptualise this as a paradigm shift in what can be achieved. Immersive language simulations, advanced cultural insights, and even more personalised learning experiences are on the way. AI’s role in education will be one of enhancement rather than replacement, augmenting human educators and learners alike.

As previously noted, the process will not be comfortable. Growth and change is by definition

destabilising. AI is already putting selection pressure on many fields of human work. The integration of AI technology into education doesn’t revolve around shareholder value. Instead it is propelling educational institutions toward disruption and evolution. AI’s impact on education starts by acknowledging the sector’s existing shortcomings. Traditional education systems often struggle with rigid curricula, standardised assessments, and limited personalisation. These inadequacies hinder the potential of diverse learners and fail to meet the needs of today’s stakeholders. By identifying current inadequacies, AI catalyses improvements across learning methodologies, assessment strategies, student experiences, and teacher training. As teachers, reflection is fundamental, and the purest analogy for AI may be that of a mirror for our capabilities and inadequacies. If we don’t like what we see, can we do better?

AI’s role in education will not be static or linear in progression. As students engage with AI-powered platforms, data accumulates, revealing patterns of learning behavior. Educators and institutions can use this data to iteratively enhance curricula, teaching materials, and learning experiences. This continuous improvement loop will likely develop into a powerful progressive force that will encourage relevant and impactful learning, but it will not be predictable.

In the crossover between education and linguistics, much is made of the ideas of collaboration, autonomy and shared discovery. AI amplifies collaborative learning by facilitating genuine partnership between students and educators. Through AI-mediated platforms, students and educators engage in co-learning, where both parties contribute knowledge and insights. For instance, an AI-assisted discussion board could enable educators to pose challenging questions and guide students in collectively exploring complex topics and forming perspectives. This collaborative dynamic nurtures critical thinking, as the group moves through an uncertain experience together, reflecting as they go. It may be that with the advent of AI, a more collaborative and authentic learning experience may be possible, but this may demand the relinquishing of traditional norms of control in order to advance higher order objectives, in a classroom shared with a non-human intelligence. While on the subject of elevating the student experience, it is worth noting the potential of AI to significantly enhance the quality and speed of delivery of student projects, particularly multimedia portfolios and projects. AI-driven tools offer real-time feedback on elements such as visual design, grammar, and content coherence. A student creating a multimedia presentation might receive AI-generated suggestions to improve slide layouts, enhance visuals, and refine language, for example. This will encourage student projects to aim at a professional standard, effectively communicate ideas, and exercise transferable skills. Of course, this will require teachers to reimagine their role, familiarise themselves, experiment, and be open to challenges.

In summary, the positive pressure that AI puts on universities and educational institutions is multifaceted. It prompts institutions to reevaluate their methodologies, embrace innovation, and prioritise the holistic development of students. AI-driven insights empower

educators to make data-informed decisions, leading to a more tailored and effective learning journey for each student. Ultimately, AI's role isn't to replace educators, but to augment their expertise, creating an educational ecosystem that equips learners with the skills they need to thrive in a changing world. I've attempted to offer a survey of some of the opportunities that my own experience experimenting with AI in the classroom has suggested.

8. The Human Experience of Education

On a philosophical level, for now, the human experience in education goes beyond AI's capabilities. The intangible aspects of human consciousness, the ability to form new knowledge creatively, and the depth of emotional understanding are integral to learning. These qualities defy algorithmic replication and form the basis of education's multidimensional nature and origin. The human mind's capacity for creativity, connection and innovation is a cornerstone of education. While AI excels at data analysis and pattern recognition, it lacks the specific phenomenological qualities and spontaneous creativity that humans bring to learning. It lacks this because AI does not and cannot know what it is to be human. Consider a classroom discussion where students explore a novel interpretation of a text. Human educators encourage diverse perspectives, nurturing the growth of original ideas that contribute to the depth of understanding, and this discussion is based implicitly in a real world experience. This makes a qualitative difference, and it is this qualitative difference that gives me the confidence that the relationship between humans and AI will be one of partnership. AI can have my marking, it can help me with my planning, but it can't yet have my connection with my students. AI is chasing at our heels, like a new colleague with new ideas and abilities that challenge us. The question remains, are teachers ready for this challenge?

Seán Timon has been teaching English since 2007 in Nepal, Romania, South Korea & the UK. He is passionate about teaching with impact and has led successful projects of change in a wide variety of educational contexts. In addition to teaching at primary, secondary and university level, he is currently reading Applied Linguistics at Kellogg College, University of Oxford. His research interests include language acquisition, sociolinguistics and educational technology.

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Conflict of Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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