# LANGTECH
# IN THE AI ERA

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Can AI transform language learning? This white paper unpacks generative AI's role in enhancing language learning, 14 months after ChatGPT's public launch.

# Contents

# **1** Introduction

"LangTech: A Deep Dive Into Online Language Education, Its Future, and a Framework for Success" was published with knowledge of generative artificial intelligence (AI) and ChatGPT's public launch on November 30th, 2022. 14 months on, we'd like to try to answer the critical questions language leaders are asking about navigating the emerging AI era:

- What has ChatGPT (and, more broadly, generative AI) changed?
- Will generative AI replace teachers?
- Will generative AI make learning a language obsolete?

To answer these central questions, we conducted interviews with the leaders of over two dozen language companies in the first three months of 2024. This information was gathered in confidence and remains anonymous, but it helps to give a sense of how language companies are reacting to the latest advances in generative AI, "the deep-learning models that can generate high-quality text, images, and other content based on the data they were trained on." **(1)**

The big question is: What has the rapid rise of generative AI and ChatGPT changed so far?

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**1** Martineau, K. (2023, April 20). What is generative AI? IBM Research Blog. Retrieved from https://research.ibm.com/blog/what-is-generative-AI

# 2 The Rise of Generative AI

In Chapter 5 of LangTech, we discuss what we refer to as "enabling technologies." One of the most important enabling technologies is generative AI (GenAI). As of March 2024, GenAI, largely propelled by innovations in Large Language Models (LLMs), is being used by well over 100 million people worldwide. **(2)**

LLMs are "very large deep learning models that are pre-trained on vast amounts of data." LLMs can be used to generate various types of content, including text, imagery, simulated audio, and video. The better the LLM, the more relevant the results they produce for users, including language teachers and learners. As of March 2024, OpenAI's GPT-3.5 has emerged as the dominant LLM across the world. Its use worldwide dwarfs that of its closest rivals, Anthropic's Claude and even Google's Gemini. **(3)**

It has been noteworthy that, at language conferences and events, language teachers in particular talk as if ChatGPT were the only AI available. Similarly, when we conducted the latest research with language leaders in early 2024, including CEOs, CTOs, CPOs, and Directors of Study at a large cross-section of language companies, OpenAI's GPT-3.5 was by far the favorite of developers and is backed up by other sources. **(4)**

LLMs existed well before ChatGPT 3.5's public release in November 2022, but they were harder to access and much more expensive. Subsequently, LLMs have become dramatically more sophisticated, useful, accessible, and cost-effective. This evolution is largely due to advancements in LLM training processes, which involve analyzing more extensive datasets to enhance their capabilities.

For instance, ChatGPT-3 was initially trained using 175 billion parameters of data. In contrast, ChatGPT-4's training involved a staggering 1.7 trillion parameters **(5)**, resulting in a significant improvement in performance. **(6)**

**2** Malik, Aisha. (2023, November 6). OpenAI's ChatGPT now has 100 million weekly active users. TechCrunch. Retrieved from https://techcrunch.com/2023/11/06/openais-chatgpt-now-has-100-million-weekly-active-users/

**3** Westfall, C. (2023, November 16). New research shows ChatGPT reigns supreme in AI tool sector. Forbes. Retrieved from https://www.forbes.com/sites/chriswestfall/2023/11/16/new-research-shows-chatgpt-reigns-supreme-in-ai-tool-sector/

**4** Porter, Jon. (2023, November 6). ChatGPT continues to be one of the fastest-growing services ever. The Verge. Retrieved from https://www.theverge.com/2023/11/6/23948386/chatgpt-active-user-count-openai-developer-conference

**5** Sparkes, M. (2023, December 6). Google says its Gemini AI outperforms both GPT-4 and expert humans. New Scientist. Retrieved from https://www.newscientist.com/article/2406746-google-says-its-gemini-ai-outperforms-both-gpt-4-and-expert-humans/

**6** OpenAI. (n.d.). GPT-4. OpenAI Blog. Retrieved March 14, 2023, from https://openai.com/research/gpt-4

**Figure 1. <u>Open AI</u> (March 14, 2023).**
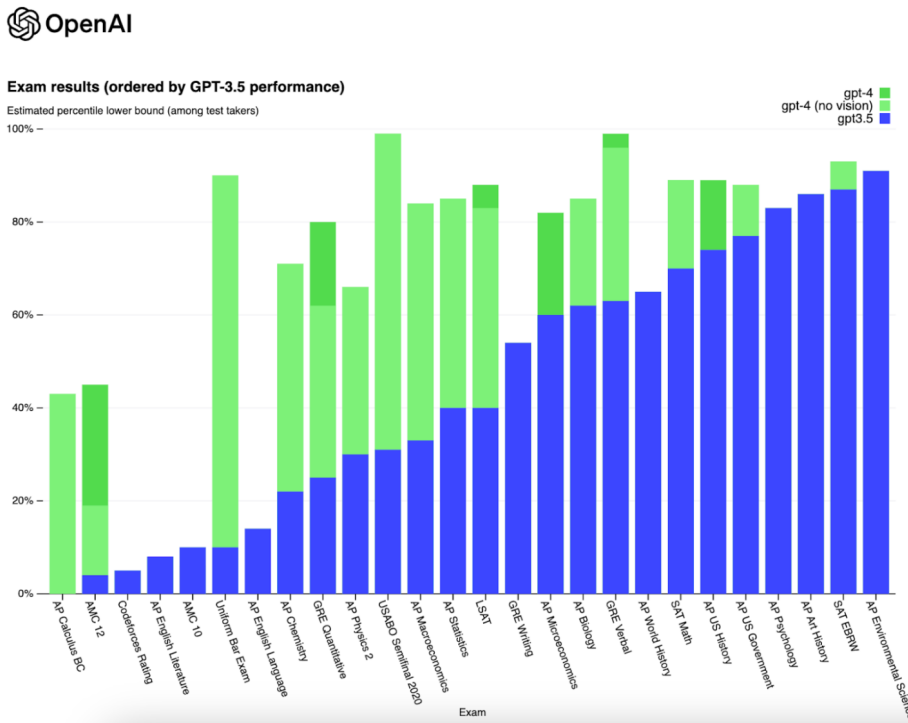
Witnessing such dramatic progress in under a year underscores the swift pace of technological evolution in the field of generative AI. With competition heating up from Google, Anthropic, and Meta, we are likely to see this fast progress continue.

## The New Opportunities Presented by Generative AI

GenAI offers huge opportunities for companies that provide either, or both, Human-Powered Instruction (where a human being is the main driver behind the instruction delivered to the learner) and Machine-Powered Instruction (where a machine or computer program is the main driver behind the instruction delivered to the learner). **(7)**

One sign of this opportunity is the increase in fundraising by language companies with an AI angle, especially over the last 12 months. In 2023, Speak, an AI language tutor app, raised a further sixteen million dollars, led by OpenAI, **(8)** to fuel international expansion. ELSA, an English language learning platform, raised a further twenty-three million **(9)** to use AI to help learners improve their pronunciation. Preply raised a further seventy million to "scale the experience" in AI. **(10)**

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**7** Asher, A., & Kantt, B. (2023). LangTech: A Deep Dive into Online Language Education, Its Future and a Framework for Success.

**8** "Series B funding announcement." (2023, August 31). Speak Blog. Retrieved from https://www.speak.com/blog/series-b-2

**9** Shu, C. (2023, September 12). ELSA secures Series C funding. TechCrunch. Retrieved from https://techcrunch.com/2023/09/12/elsa-series-c/

**10** Lunden, I. (2023, July 19). Preply, the language app known for its live tutors, closes out Series C at $120m and doubles down on AI. TechCrunch. Retrieved from https://techcrunch.com/2023/07/19/preply-the-language-app-known-for-its-live-tutors-closes-out-series-c-at-120m-and-doubles-down-on-ai/

# 3 How Is Generative AI Impacting Machine-Powered Instruction?

When it comes to using generative AI, companies are leveraging this technology to add value to their existing services. This includes providing instant feedback to learners on their speaking, **(11)** improving pronunciation, **(12)** matching video content to learners' interests and language abilities, **(13)** among many other applications. However, the most iconic product of the AI era is the AI language tutor.

## The Rise of AI Language Tutors

We define AI language tutors as "any AI-assisted experience that attempts to replicate the experience of a human language tutor, whether this be through the conversational (chatbot) experience, immediate feedback, or the exercises that a tutor may assign to their student." **(14)** While users initially were only able to interact with their AI language tutors via text in early 2023, many AI language tutors now allow students to interact via voice and/or video as well. **(15)** Dozens of language companies have now released their AI language tutor, starting with Memrise's Membot in 2022 **(16)** and followed by Duolingo's Duolingo Max, English Central's MiMi, **(17)** Hallo's HalloAI, and many others. Some have released their own or will release in 2024.

There are "low-stakes" and "high-stakes" situations where a learner might want to work with an AI language tutor. In a low-stakes situation, the learner might want to complete a role-play, such as ordering a coffee at a café. **(18)** A high-stakes situation might involve completing a university entrance exam. The advantage of these role-play scenarios is that learners who might be shy or nervous about speaking in front of a teacher or peer can practice at any time with an AI language tutor, across various situations, often for free, at any hour of the day.

## Are AI Language Tutors Going to Replace Teachers?

The extent to which AI language tutors will disrupt the market remains uncertain. While there is always a possibility, and numerous news articles suggest that AI could replace the jobs

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**11** LearnLight. (2023). Fluency Lab: The AI language learning tool for your global workforce. Retrieved December 1, 2023, from https://www.learnlight.com/en/articles/fluency-lab-the-ai-language-learning-tool-for-your-global-workforce/

**12** Zucchet, E. (2023, December 14). Artificial Intelligence (AI) & Language Learning. Berlitz. Retrieved from https://www.berlitz.com/blog/artificial-intelligence-ai-language-learning

**13** Hughes, N. C. (2023, August 25). How Memrise is revolutionizing language learning with AI. The Tech Talks Daily Podcast.

**14** Smyth, J. (2023). Riding the wave: AI language tutor trend soaring in 2023. LearnCube Blog. Retrieved August 2023, from https://blog.learncube.com/chatbots-and-ai-language-tutors

**15** Hallo. (n.d.). Breaking News: Introducing HalloAI and 30 New Languages. Hallo - Learn Languages with AI Tutors. Retrieved from https://www.hallo.tv/halloai-launch/

that teachers do, **(19)** our research indicates that the impact on the industry appears to be minimal so far.

This situation may change in the future, but there is little evidence from our recent research to suggest that language learners are abandoning their favorite language teachers for AI teachers in significant numbers, if at all.

One of the most likely reasons for this is that a human teacher offers more than just the sum of the tasks they perform for learners. Most effective human teachers do not merely explain ideas, provide instruction, or give thoughtful feedback; they offer a unique type of motivation and accountability that is both powerful and enduring. We underscored the critical importance of teachers in motivating language learners in our book, "LangTech." Here's an excerpt **(20)** that remains as relevant today as it did in early 2023:

> *Tobias Dickmeis from Tandem rightly asserts that '[most language learners] struggle not because they pick the wrong app, or pick the wrong course material, but because they lose motivation.' Motivation is a very personal thing: not everyone has the same background knowledge, needs, expectations, culture, values or goals. Some experts believe that instructor-led learning is essential to maintain motivation, since interaction with another human is intrinsic to language use, while others suggest that technology-enabled gamification is the key to unlocking long-lasting motivation to learn. In one sense, both beliefs could be correct since there is no single one-size-fits-all solution to motivate all language learners.*
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> *To complicate things further, motivation and learning goals tend to be dynamic. As Ha Jin Kim, Head of Engoo Global Business, says: 'People are highly motivated, but sporadically [and a student's language learning journey is long].'"*

There is also little evidence that humans are likely to quickly change their learning habits, even as technology rapidly advances. Humans are accustomed to learning from other humans. For learners to shift their habits, AI language tutors would have to be both much cheaper and at least as effective as human teachers. Achieving significantly lower costs for

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**16** Memrise. (2022, December 9). Introducing MemBot, your new language partner! Memrise Blog. Retrieved from https://www.memrise.com/blog/introducing-membot/

**17** Haghighi, N. (2023, March 29). EnglishCentral launches ChatGPT to English learners at scale. EnglishCentral. Retrieved from https://www.englishcentral.com/blog/en/news/englishcentral-launches-chatgpt-to-english-learners-at-scale/

**18** Engoo. (n.d.). Role play. Retrieved from https://engoo.com/app/role-play

**19** Browne, R. (2023, November 2). Tesla boss Elon Musk says AI will create situation where no job is needed. CNBC. Retrieved from https://www.cnbc.com/2023/11/02/tesla-boss-elon-musk-says-ai-will-create-situation-where-no-job-is-needed.html

**20** Asher, A., & Kantt, B. (2023). LangTech: A Deep Dive into Online Language Education, Its Future and a Framework for Success.

an AI tutor in the short term will be a challenge. Our research indicates that personalising the learning experience requires significant data, and data storage and processing come at a cost that would make hyper-personalised AI tutoring financially unviable for most scenarios in the near term. In the longer term, even if cost and technological hurdles are overcome, humans' ingrained habits of learning from other humans and our sometimes irrational behavior patterns may still stand in the way.

The understanding that hiring a human language teacher represents a significant investment might serve as an important "commitment device" **(21)** for sustaining language learning over the long term. If learners prefer a human language teacher, this preference can be quite strong. One leader from our research noted that in the corporate language training sector, the opportunity to learn with human teachers is highly valued as a perk, something employees might be reluctant to forego for an AI. Predicting how quickly language learners will switch to an AI language tutor, even when a cost-effective and pedagogically sound option is available, remains a matter of speculation.

## Is AI and Real-Time Translation Technology Eventually Going to Make Learning Languages Unnecessary?

Machine translation technology should already be accurate and fast enough to be disruptive. Yet, we are not observing a reduction in the demand for language learning services, neither from reports of publicly listed companies like Duolingo, **(22)** nor from the hundreds of private language companies to which Alex Asher, CEO of LearnCube and co-author of this white paper, has exposure, nor from the dozens of language leaders we have interviewed over the past months, nor from the language teachers recently surveyed by the British Council. **(23)**

This may indicate that the technology is not yet sufficiently advanced, and most language educators have an explanation for why they do not believe AI will render language learning obsolete. As long as learning a language helps individuals, teams, and businesses to improve understanding, trust, respect, confidence, connection, and control, it will remain a highly valued skill that real-time translation can only partially substitute.

**21** Rogers, T., Milkman, K. L., & Volpp, K. G. (2014). Commitment devices: Using initiatives to change behavior. American Medical Association. Retrieved from https://scholar.harvard.edu/files/todd_rogers/files/commitment_devices_2.pdf

**22** Duolingo, Inc. (2024, February 28). Duolingo reports 65% DAU growth, 45% revenue growth and record profitability in fourth quarter 2023. Retrieved from https://investors.duolingo.com

**23** Edmett, A., Ichaporia, N., Crompton, H., & Crichton, R. (2023). Figure 11 of Artificial intelligence and English language teaching: Preparing for the future. British Council. https://doi.org/10.57884/78EA-3C69

# 4 How Is Generative AI Impacting Human-Powered Instruction?

The promise of generative AI in Human-Powered Instruction lies in its potential to augment human language teachers by providing timely learner insights, instant access to personalised resources, **(24)** personalised homework, **(25)** auto-marking assignments, **(26)** and much more. The strategy aims to allocate to AI the tasks that teachers either do not want to undertake or are not adept at, thereby allowing teachers to concentrate on their strengths and on what learners truly value from their instruction. Consequently, learners benefit from teachers employing these technologies and techniques, enabling more "personal and practical" **(27)** instruction.

From our research, there's ample evidence that language companies aim to use generative AI to enhance their human language teaching, yet there's little evidence of a radical transformation.

## How Are Teachers Using Generative AI?

Teachers currently seem to be largely experimenting with technology as a time-saving tool rather than as a means to enhance the effectiveness of their classes. **(28)** The latest British Council study on artificial intelligence in English language teaching suggests that most teachers using AI, particularly ChatGPT, are utilising it to create materials, lesson plans, and generate exercises, worksheets, and homework tasks. However, our research of language business leaders indicates there is little evidence of language schools abandoning standardised curricula in favor of a radical shift towards personalised curricula.

A few explanations for this emerge from our research. Firstly, language teachers are not typically compensated extra for creating or generating lesson materials. Therefore, if standardised materials are made available to them, they are far more likely to use those instead of creating or generating new materials.

ChatGPT 3.5 is by far the most popular generative AI tool used by teachers, but developing

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**24** LearnCube. (2023). LearnCube's AI Teacher Assistant. Retrieved March 10, 2024, from https://go.learncube.com/ai-teacher-assistant

**25** Magic School. (n.d.). Use cases for English teachers. Retrieved from https://www.magicschool.ai/use-cases/english-teachers

**26** McNulty, N. (2023, May). Using AI for auto-marking of assessment. Retrieved from https://www.niallmcnulty.com/2023/05/using-ai-for-auto-marking-of-assessment-revolutionising-the-grading-process/

**27** Asher, A., & Kantt, B. (2023). LangTech: A Deep Dive into Online Language Education, Its Future and a Framework for Success.

**28** Edmett, A., Ichaporia, N., Crompton, H., & Crichton, R. (2023). Figure 2B in Artificial intelligence and English language teaching: Preparing for the future. British Council. Retrieved from https://doi.org/10.57884/78EA-3C69

prompt engineering skills takes time. It remains challenging to craft prompts for ChatGPT 3.5 in a way that consistently generates content aligning with the Common European Framework of Reference for Languages (CEFR) levels. This consistency is crucial if teachers are to rely on AI-generated materials in place of professionally published materials.

With the exception of a few technologically advanced language companies, there was little evidence in our research that many companies are actively working on ways to completely personalise the language learning journey. This is surprising, considering that personalisation is touted as one of the biggest promises of AI in education. **(29)** However, it may take some time before the technology is trusted by educators to personalise automatically and at scale. In the meantime, the research suggests language companies are more focused on providing personalised feedback on speaking and writing, or on automating level tests or formative assessments.

From our research, we expect tech-savvy online language teachers and corporate language organisations, most of which already have teams devoted to curriculum development, to lead in AI adoption. Beyond these two groups, teachers, who have entrenched teaching habits, have traditionally been slow to adopt technology and seem likely to follow the same trajectory with generative AI. The slow adoption and proficiency among teachers in generating high-quality teaching materials are not helped by the fact that few receive adequate training in leveraging generative AI. **(30)** As a result, we anticipate that language teachers and schools will continue to rely on predetermined, standardised curricula for at least the next few years.

This scenario presents an opportunity for forward-thinking language companies to leapfrog their competitors by training their teachers on how to harness AI effectively and by providing more intuitive, embedded generative AI tools to better personalise instruction and homework.

**29** Dahlberg, E. (2023, August 14). A new way to personalize learning, thanks to AI. EdSurge News. Retrieved from https://www.edsurge.com/news/2023-08-14-a-new-way-to-personalize-learning-thanks-to-ai

**30** Edmett, A., Ichaporia, N., Crompton, H., & Crichton, R. (2023). Figure 7 in Artificial intelligence and English language teaching: Preparing for the future. British Council. Retrieved from https://doi.org/10.57884/78EA-3C69

# 5 Conclusion

Generative AI is proving to be an incredibly adaptable tool, yet it remains just that—a tool, not a replacement for a structured language course or a human teacher. While a segment of language learners may utilise ChatGPT or an "always on" AI language tutor to supplement their practice for a time, it will not suit everyone. Many leaders report on the novelty of AI-generated conversations wearing off fairly quickly and a challenge in matching the language level of a student.

AI language tutors suffer from a few weaknesses that may be solved over time but could take years to work through. Currently, they lack the capability to "remember" learners, or it is not yet commercially viable to store the amount of data required for this feature. **(31)** AI language tutors are unable to connect on a human level with students (despite being able to simulate such interactions). It also seems a big hurdle for AI tutors to provide accountability in the same powerful way that a human teacher can. We are inherently responsive to social pressure from humans, so it seems a big leap for mainstream learners to change how they view machines. Additionally, the higher investment in learning with a human teacher, compared to an AI tutor, might itself be a motivational factor for a learner to continue practicing and advancing to the next level.

In line with our recent research with LangTech leaders, we do not believe that AI language tutors will disrupt the demand for human language tutors in the short to medium term. However, many leaders also cited Kodak and Blockbuster as cautionary tales of dismissing new opportunities prematurely.

We do believe that generative AI will enable the creation of much richer language learning experiences than those possible before recent technological advancements, and could therefore influence the variety of experiences offered by self-study language learning apps. Apps like Duolingo and Babbel expanded the market for language learning by providing inexpensive, convenient, and engaging methods to learn a language; generative AI-powered language tools are poised to do the same. Perhaps, AI language tutors will enable more learners to progress beyond beginner levels (which comprise the majority of self-study app

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**31** Beh, Joon. Interview by Alex Asher. 6 March 2024.

users) and commit to achieving higher proficiency levels, potentially increasing demand for human language instructors.

In Chapter 6 of LangTech, we introduced the Personal & Practical - Profitable & Scalable (PP-PS) Framework **(32)** to assist leaders in identifying opportunities that can enhance the success of their LangTech product. Although AI may not serve as a complete solution for language education on its own, it has the potential to make products more pedagogically effective by making them more personal and practical for learners. Additionally, AI can enhance commercial viability by making offerings more profitable and scalable.

While it is clear that AI is a highly scalable technology, it is not a given that GenAI-powered language solutions will be profitable. AI has the capability to personalise language learning by generating content, curriculum, and conversations tailored to learners' needs and interests at a cost. However, none of the language leaders we spoke to had raised their prices or even suggested their willingness to charge extra for these more personalised AI-powered experiences. Many language businesses are absorbing these costs to remain competitive, or are experimenting with how to achieve profitability with a freemium model.

We recommend that LangTech leaders stay curious about AI but focus on identifying their desired market position, determine which tools their users will value most (AI or otherwise), and concentrate on solutions that support their core competencies. While AI language tutors offer convenience, a "safe space for practice," and 24/7 availability, the novelty of interacting with AI tends to wear off for many learners, and businesses often struggle to ensure AI consistently delivers high-quality conversations.

There is a bright future for service providers of both Human-Powered and Machine-Powered Instruction, but applying the right balance of AI for your learners and business will be critical. Ignore AI completely and competitors could leapfrog your business. Attempt to apply AI as a complete solution in itself, as opposed to a tool, and your business could fade into a fad. Curiosity about AI will be a minimum requirement to thrive in the AI era and it is encouraging that most of the language leaders with whom we spoke had this quality.

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**32** Asher, A., & Kantt, B. (2023). LangTech: A Deep Dive into Online Language Education, Its Future and a Framework for Success.

It is clear that generative AI presents a once-in-a-generation opportunity for innovation in language education. Nonetheless, our research underscores that technology serves language learners best when it amplifies human connection rather than attempting to replace it. We wish you every success with your language endeavour and please stay in contact us for more information around the LangTech book and future research.

# Meet the Authors

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Alex is the grandson of two language teachers and leads LearnCube, an award-winning virtual classroom software made for online language teaching. Working with customers in over 1,000 cities and 90 countries, including many of the most iconic companies in the language technology sector, Alex has unique insights into the latest trends driving the future of online language education.

If you'd like to talk with Alex about our research or to gain insights from the experience rolling out the LearnCube AI Teacher Assistant, please don't hesitate to book a 20-minute conversation here: tinyurl.com/meetalexai.

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Brian graduated from Harvard University with a Master of Education (M.Ed.) degree, concentrating in Technology and Innovation in Education. He brings over 15 years of experience in the language education sector and has started and directed two language schools, including a highly successful organisation which was also one of the first fully-remote online language schools (continuously operating since 2011).

If you want to learn more about Iboux Academy, please visit iboux.com.