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Research Article

'It is not the same as a classroom teacher': A qualitative study of foreign language teachers' perspectives on artificial intelligence-supported tools in Kazakhstan

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ABSTRACT

This study explores secondary school teachers' perspectives on artificial intelligence (AI)-supported tools through qualitative in-depth interviews with 16 teachers of English as a foreign language in Kazakhstan. The research aimed to understand teachers' views on pedagogy, their knowledge of AI, and their perceptions of its opportunities and limitations. Findings revealed that teachers were largely pragmatic and open to adopting new digital tools; however, concerns arose regarding scenarios where AI might diminish the teacher's role. The practical implication of the study suggests that AI-supported tools should be framed as context-specific contributors to learning, rather than as transformative innovations. The qualitative approach was chosen to address the challenge of limited teacher familiarity with AI, enabling interviewers to clarify concepts and provide demonstrations during discussions. Kazakhstan's bilingual and trilingual education system provided a unique context for this study. Education reform, often associated with technology, has been a focus in the post-Soviet era, though the system remains relatively centralized compared to OECD countries. Notably, better-resourced Nazarbayev Intellectual Schools serve as a model for trilingual secondary education. Teachers reported access to continuing professional development opportunities and ICT-related training, with classrooms typically equipped with projection devices, IT rooms, and sometimes tablets. Students' use of mobile phones in schools was regulated but permitted for specific educational purposes. This research highlights the importance of positioning AI tools as augmentative technologies, emphasizing their role in supporting rather than replacing teachers in enhancing educational outcomes.

Keywords: AI, language learning, teacher perspectives, teaching and learning

INTRODUCTION

The integration of artificial intelligence (AI) into education has generated widespread interest, often positioned as part of a so-called "fourth wave" of technological innovation that promises to reshape teaching and learning (Miao et al., 2021). While this narrative is compelling, it tends to obscure the practical and pedagogical complexities involved in implementing AI tools in real classrooms. Claims about AI's transformative potential must be critically examined, especially as many tools operate on opaque algorithms, raise ethical concerns, and demonstrate uneven effectiveness across different educational contexts (Perrotta & Selwyn, 2020). This has implications for classroom teaching and one of the striking features of the use of AI in language learning is the range of applications available; some new, some much more established (see, for example, Cukurova et al., 2023; Jiang, 2022). We start by giving a brief background on the most widely used

applications including generated text, machine translation and writing assistants, and adaptive or intelligent learning systems (ILS).

Despite the global proliferation of AI in language learning, its adoption remains uneven and often uncritically examined. Tools such as ChatGPT, Grammarly, and Duolingo are praised for enhancing learner autonomy and productivity (Fathi & Rahimi, 2024; Huang et al., 2020), yet emerging research highlights their limitations. These include algorithmic opacity, cultural and linguistic biases, and pedagogical misalignment with learners' developmental needs (Dizon, 2023; Kohnke et al., 2023). Similarly, applications such as Grammarly or QuillBot provide surface-level corrections but offer limited support for deeper writing development, especially for students at earlier stages of language acquisition (Sarrafzadeh et al., 2020). Moreover, the use of AI in educational settings is not a neutral process–it is shaped by infrastructural access, digital literacy, and local curriculum priorities, which vary significantly across national and regional contexts.

Generated text has caught the popular imagination largely through media reporting of ChatGPT, though of course other programs do similar things (Kostka & Toncelli, 2023). A study by Fathi and Rahimi (2024) shows the potential. EFL learners, preparing for the IELTS examination, carried out interactive writing activities utilizing ChatGPT, and benefited from implicit and explicit mediation to develop their academic writing skills—albeit the authors note to be effective the mediation needed to be within learners' ZPD (Fathi & Rahimi, 2024). ChatGPT can only go so far and function as scaffolding for students' learning. For example, text generation might provide a stimulus for writing but the learner needs to be minded to re-draft the content as research shows that ESL students used ChatGPT for grammar and wording purposes (Koltovskaia et al., 2024). ChatGPT offers only limited support beyond initial writing prompts, learners must still be encouraged to critically engage with and revise the generated content to develop their writing skills meaningfully.

Often seen as less problematic by teachers is the use of generated text in the preparation of teaching material (e.g., Ulla et al., 2023). For example, they might ask for a lesson plan, having defined as precisely as they can the level and interest of learners. Such a plan could build in differentiated materials, provide questions (open-ended or multiple-choice) to accompany texts and generate test and assessment tasks. Naturally, there are drawbacks yet again, and the quality of the resources produced depends on the quality of the underlying material. Moreover, there is a wider question of ethics in all this, for example the extent to which AI supported programs are biased towards societies with greater resources and hence reinforce rather than challenge existing cultural stereotypes (e.g., Alghamdy, 2023). There are further practical considerations, for example whether programs are capturing the most up-to-date models of speech, and how well any generated text might work for teaching minority languages.

Machine translation and writing assistants are longer established in foreign language (FL) teaching. Programs such as Google Translate, DeepL as well as ChatGPT itself allow learners to get almost immediate translation and may act as a trigger for picking up new vocabulary or ironing out a misunderstanding. Translation devices also allow learners to write and follow texts beyond their language level thus improving motivation and enabling communication with a target language community. Bahri and Mahadi (2016) suggest that machine translation may particularly appeal to, and add value for, less proficient learners. Lee (2020) holds a positive view, too, finding machine translation useful when instructors are aware of appropriate use, for example as a first step in editing a text, rather than seeing the translation as complete. Used in this way, Cancino and Panes (2021) suggest machine translation is more a support than a brake on writing development. Barret and Pack, 2023 emphasize the need for reflective intervention by educators, as these tools foster superficial learning reducing the cognitive engagement underpinning the language development. The main concerns raised by researchers such as Urlaub and Dessein (2022). Zhu (2020) the pedagogical use of MT regarding the reduction of learners' agency and ethical (the worn of plagiarism) the use of MT-generated texts as their own work. Therefore, given these risks researchers suggest for guided use of MT as a supporting tool.

Writing assistants such as Grammarly, Quillbot and ChatGPT can analyze learner content and offer suggestions for grammar correction and improvements in sentence structure and vocabulary. This helps users identify and rectify errors in their writing, resulting in more coherent and polished academic texts. Assistants have been seen as useful for scaffolding writing in many different contexts, see, for example, Huang et al. (2020) and Kim and Kim (2022). However, there are shortcomings including misleading feedback, or

feedback given in English or other target language which the student is unable to understand, over-reliance and a weakness in understanding context. A wider issue is the lack of fitness between the kind of explanation offered by the machine and where the student is in the writing process. For example, spelling and grammar feedback will be more important in the final stage of the process but may appear as distracting at the planning stage when help on outlining would be more useful (see the discussion in Sarrafzadeh et al., 2020).

Chatbots are more recent developments in FL teaching and natural language processing tools such as ChatGPT provide opportunities for conversational interaction. If looking for individual practice, students can lay down parameters for a conversation, for example, stating degree of formality, length of responses, and suggested language level (Haristiani, 2019). Like all applications considered here mobile technology allows this to be undertaken 'anytime, anywhere'. Interaction with chatbots has to date tended to happen through text but voice interaction with robots has been reported upon with some enthusiasm, for example, Yueh and Chiang (2020) and Banaeian and Gilanlioglu (2021) looked at the use of the humanoid' robot in developing the student's target language vocabulary. Dizon et al. (2022) found the popular chatbot, Alexa, engaging for learners of Japanese and useful for developing speaking skills in a small scale study of out of classroom learning and Lo (2024) found something similar looking at Mandarin second language learners using a specially designed personal assistant. However, Dizon (2023) carried out a later review and had further concerns over the frequently predictable, or downright unhelpful responses from chatbots.

Promotion, and criticism of AI has often focused on *adaptive* or *ILS* (see Liang et al., 2023; Perrotta & Selwyn, 2020). Luckin and Holmes (2016) regard AI (and this is not specific to language learning) as supporting personalized one-to-one tutoring, by offering targeted and timely feedback based on continuous analysis of learners' interactions. This feedback can seem both immediate and non-threatening while a gaming element may trigger greater motivation, at least in the short term. AI may be integrated into virtual reality systems and chatbots to stimulate tutor interaction and even facilitate group work (Liang et al., 2023).

While AI has been integrated into comprehensive ILS, language teachers are more familiar with Duolingo, used by millions of learners worldwide. Duolingo offers reinforcement of structures and vocabulary with useful spoken language models, including otherwise hard to access languages (Kazakh being an example). The program can be accessed for free though a new 'premium version' makes greater use of AI to enable role play, fuller explanation of errors and remedial practice. Research has focused on vocabulary learning and encouraging persistence (or 'grit'). Some impact, see, for example, Sudina and Plonsky (2024), has been noted though findings are not always replicated.

The general background to this study is that AI supported tools have been used in various contexts including facilitating labor intensive work such as lesson preparation; to model feedback processes; and to take on a direct instructional role as in ILS. However, the use of these tools also presents difficulties and the question is where do teachers stand on AI? This question is addressed in a study of secondary school teachers of EFL in Kazakhstan.

In Kazakhstan, where English language education plays a strategic role in the country's multilingual and modernization agenda, little is known about how secondary school teachers perceive and engage with AI-based tools. Most existing research remains centered on higher education or global North perspectives, leaving a critical gap in understanding how AI is being localized and interpreted in emerging educational ecosystems.

This study addresses this gap by exploring how English as a foreign language (EFL) teachers in Kazakhstan's secondary schools conceptualize the role of AI in their professional practice. Through semi-structured interviews with 15 educators, we investigate the perceived benefits, limitations, and ethical concerns surrounding AI-assisted language teaching. By foregrounding teachers' voices, the study aims to contribute to a more contextually grounded understanding of AI integration in language education, while informing both local pedagogical strategies and broader policy discussions.

LITERATURE REVIEW

A growing body of literature has begun to explore teachers' perspectives on the integration of AI in education. This research, while expanding, remains largely fragmented and descriptive. Three major thematic

strands emerge: *limited teacher knowledge, perceived opportunities of AI, and underlying concerns about its implementation*. However, significant methodological inconsistencies and a lack of contextual nuance persist, particularly in studies concerning low-resource or underrepresented educational systems such as Kazakhstan's.

Gaps in Teachers' Knowledge and Experience

Numerous studies emphasize a consistent gap in AI-related knowledge and experience among teachers across diverse contexts (Lindner et al., 2019; Velander et al., 2023; Yue et al., 2024). First, there has been a widely reported lack of knowledge and experience of AI among teachers. In one large-scale survey, Yue et al. (2024) found a gap in AI-related content and technological knowledge among recruited teachers in China and argued for developing effective teacher continuing professional development (CPD) programs to address this. Velander et al. (2023), too, found in their mixed methods study that there was restricted knowledge of AI among teachers in Sweden, and again argued strongly for CPD. Lindner et al. (2019) found that even among computer studies teachers there was a surprisingly low level of technical knowledge and Galindo-Domínguez et al.'s (2024) survey found high levels of willingness to use AI, but low levels of personal experience. However, what constitutes "AI knowledge" varies across studies. For instance, some focus on technical proficiency, while others consider pedagogical literacy or ethical awareness. Galindo-Domínguez et al. (2024) further highlight that teachers' digital competence–not just AI-specific knowledge–strongly predicts attitudes toward AI, suggesting the need for a more holistic framework of digital readiness.

Critically, most studies rely on self-reported surveys with little triangulation from classroom observations or performance data, making it difficult to assess how knowledge gaps actually affect practice. Moreover, informal learning sources such as social media and peer exchanges dominate teachers' exposure to AI (Galindo-Domínguez et al., 2024), raising concerns about the reliability and depth of that knowledge base.

Perceived Opportunities: Optimism and Limitations

While many educators express cautious optimism about the potential of AI to enhance teaching and learning, these perceived opportunities are often articulated in vague or aspirational terms. For instance, Velander et al. (2023) and Holmes (2023) report that teachers show interest in AI for purposes such as personalization and administrative efficiency. However, these benefits are rarely grounded in concrete classroom applications or supported by systemic infrastructure. Teachers often frame AI's value in general terms–acknowledging its growing role in work and social life and assuming it should naturally extend into education. More specific benefits were identified in Holmes' (2023) survey of Asian and European teachers, where respondents highlighted personalized feedback, automated grading, and early identification of at-risk students as key advantages. Aghaziarati et al. (2023) further suggest that AI could enable pedagogical shifts toward more facilitative teaching roles. Nevertheless, few studies critically assess the feasibility of these transformations, especially in contexts where cultural and institutional readiness for pedagogical change remains underexplored–leaving a persistent gap between theoretical potential and practical implementation.

Concerns: Ethical, Practical, and Pedagogical

Teachers' concerns about AI frequently center on data privacy, algorithmic bias, and a perceived erosion of professional autonomy (Cojean et al., 2023; Kim & Kim, 2022). However, these concerns are often shaped by broader sociotechnical contexts–particularly the absence of regulatory frameworks and clear institutional policies governing AI integration in education. Reliability is another recurring issue, with educators expressing skepticism toward the accuracy and transparency of AI-generated outputs, especially in writing tools like ChatGPT (Barrett & Pack, 2023). These concerns are further amplified in under-resourced settings by limited infrastructure, inconsistent policy mandates, and insufficient professional development (Cukurova et al., 2023).

A large portion of the literature remains descriptive, but several studies identify key factors influencing teachers' attitudes. One such factor is prior experience. Nazaretsky et al. (2021), in a small-scale study of science teachers in Israel, found that while teachers expressed general optimism toward AI, they remained skeptical about its relevance to their own classrooms. This skepticism stemmed from a reliance on professional intuition and teaching experience, which made them hesitant to alter established classroom

routines. Moreover, teachers were found to expect higher accuracy from AI tools than from human outputs, demonstrating low tolerance for machine error. Velander et al. (2023) similarly observed that limited hands-on experience with AI led not to outright resistance but to inflated expectations, suggesting that with targeted support, educators could develop more balanced and informed perspectives.

Another shaping factor is anxiety, which has been shown to affect pre-service teachers' attitudes toward AI. Hopcan et al. (2023), examining student teachers in Turkey, identified multiple sources of anxiety, including gender, age, personal interest in technology, educational background, and perceived risks and benefits. Their findings showed that individuals with greater interest in technology and better access were more likely to exhibit positive attitudes toward AI. Interestingly, anxiety appeared to decrease with age, and female participants were generally more receptive than their male counterparts. These results highlight the need to address not only technical training but also emotional and contextual factors to foster teacher confidence in using AI tools.

Despite these concerns and complexities, some studies report more nuanced perspectives. For instance, Ulla et al. (2023) found that teachers often view AI not as a replacement but as a supportive mechanism–serving roles such as evaluator, content provider, or teaching assistant. This duality suggests that the issue is less about AI itself and more about how teachers are engaged in its implementation. Cukurova et al. (2023) further emphasize that successful integration depends on minimizing additional workload, fostering trust, and ensuring that teachers maintain ownership over the use of AI in their practice.

Methodological Limitations in Existing Studies

Across the literature, methodological inconsistencies are evident, particularly in how "AI" is defined–ranging from automated feedback tools to generative language models–which complicates cross-study comparisons. Most research relies heavily on surveys and lacks longitudinal depth, offering limited insight into how teacher perceptions evolve over time with continued exposure to AI. Additionally, there is a notable underrepresentation of specific teaching domains, such as FL education, where language-specific pedagogical and ethical challenges intersect with emerging AI technologies (Rus et al., 2024; Sütçü & Sütçü, 2023).

Studies focusing on FL teachers reveal a recurring pattern of cautious optimism. Rus et al. (2024), examining teacher educators in Romania and the Republic of Moldova, found moderate levels of AI knowledge and limited classroom use. While teachers recognized potential benefits–such as personalized learning and expanded access to resources–they also expressed concern about student over-reliance on AI, diminished interpersonal interaction, and the risk of distraction. The authors emphasized the importance of involving teachers in AI development to ensure practical relevance. Similarly, Sütçü and Sütçü (2023) reported enthusiasm among FL teachers in higher education, particularly regarding AI's potential to assist with lesson planning and diversify teaching strategies. Yet, these teachers also warned that learners might default to the "easy path," becoming overly dependent on AI tools.

Concerns about authorship, reliability, and ethical boundaries are also prominent in studies on AI use in writing instruction. Barrett and Pack (2023) found that both teachers and students distinguish between acceptable uses of ChatGPT–such as idea generation–and unacceptable practices like submitting AI-generated drafts without student input. Teachers were especially skeptical about the accuracy of AI-generated feedback. Similarly, Almanea (2024), studying female instructors in a Saudi university, highlighted plagiarism concerns but also reported attempts to develop pedagogical strategies to manage AI ethically. Earlier, Bahri and Mahadi (2016) expressed apprehension that AI might reduce teachers to support roles and questioned the reliability of outputs. In contrast, Ulla et al. (2023) identified four constructive roles for ChatGPT–interlocutor, content provider, teaching assistant, and evaluator–concluding that while AI was generally seen as supportive, it was not viewed as fundamentally transformative of existing teaching practices.

Research Gap and Study Contribution

Overall, the literature provides a useful starting point but remains primarily descriptive, focusing on what teachers feel or fear rather than how they engage with AI in context. Particularly in countries like Kazakhstan, there is a lack of empirically grounded research exploring **how sociocultural, institutional, and professional factors shape teachers' views of AI**. Few studies adopt a critical lens or examine teacher agency in resisting or reshaping AI integration.

This study addresses these gaps by examining secondary school English teachers' perceptions of AI in Kazakhstan, a context rarely studied yet vital for understanding the global implications of AI in education. It also aims to offer a more nuanced and situated understanding of teacher attitudes, going beyond binaries of optimism and anxiety to explore the underlying conditions shaping those views.

METHODOLOGY

To explore teacher attitudes to AI in depth we undertook a small-scale exploratory study based upon interviews carried out with teachers of EFL in Kazakhstan (n = 16) (**Table 1**). The reason for this qualitative approach was not a pre-existing epistemological preference, but rather an awareness that larger surveys run the risk of posing questions about something (AI) which teachers may not know little about. A small scale study gives the interviewer scope to clarify meanings, for example we could illustrate applications using screen dumps or demonstrations.

The study took place in Kazakhstan for reasons of access and convenience. Kazakhstan offers a case of a bilingual country and while there are people who only speak Russian or Kazakh, many will naturally code shift. English is widely spoken too. Kazakhstan is further of interest as education, often promoted via technology, has been strongly associated with reform in a post-Soviet era (Yakavets, 2014). However, the education system is still seen as more centralized than other OECD countries and performance in PISA is below average, though the gap appears to be closing. A particular feature of the system in Kazakhstan has been the establishment of a small number of better resourced, selective Nazarbayev Intellectual Schools (NIS) as a model for trilingual secondary education (Karabassova, 2020).

Teachers in Kazakhstan are reported as having CPD opportunities and many have participated in ICT related training; indeed, the use of ICT is mainstream in Kazakh schools (OECD, 2019). In this particular study, schools were often reported as having projection devices in classrooms, with a dedicated IT room for lessons on computing and class sets of iPads or tablets which could be booked. Some teachers brought their own laptops to school. Students were allowed to bring mobile phones to school but they were collected by teachers at the start of day or at the start of a lesson, though in some cases older students were trusted to keep them. However, students were given access to their phones if there was a specific reason, for example to carry out an online quiz, post a Padlet note or look at a presentation if the whiteboard was not working.

RESEARCH DESIGN

Teachers then are the subject of this study and a challenge in interviewing teachers about AI is whether they have enough experience upon which to draw. This was addressed by recruiting a purposive sample from teachers attending a professional development program at master's level in a local university in Kazakhstan. This program covered topics such as research methods, academic writing, language pedagogies, language acquisition theories, inter-cultural communication and so on. One module considered innovative teaching in which digital tools were covered, though not AI. In the invitation to take part in the study which went out to all students (N = 110) it was explained that we were looking for people interested in AI but not expected to have special knowledge or hold a particular position on its use. There were 25 offers to attend, and it was possible to find mutually convenient dates and times for interviews with 15 teachers. Meanwhile, a student in another university heard about the project and asked to be interviewed. This we agreed to as we could ask questions about schools in another part of the country.

Participants then were teachers, though two had recently taken a break from teaching: one to concentrate on studying for her master's degree and the other to focus on private lessons to students learning English. A further two had moved into university teaching but the focus in the interviews remained on their experiences of school the previous year. Three of the teachers had management positions which reduced their contact time in the classroom. The sample was skewed by gender (13 female and 3 male) but this is in line with the gender breakdown of teachers in Kazakhstan (OECD, 2019).

Table 1. Participant overview

ID	Gender	Career stage	School type	Current role/teaching status	AI/digital use & tech confidence	Special characteristics
T1	Female	Mid-career	NIS	English teacher & curriculum team leader	High: uses Padlet, online quizzes, social media	Strong digital skills; NIS context
T2	Male	Early-career	Public school	English teacher	Moderate: uses web resources and video clips	Curious about AI; tech-savvy for early-career
T3	Female	Later-career	Public school	English teacher	Low: describes technology as 'terrifying'	Outlier to digital confidence
T4	Female	Mid-career	NIS	English teacher with management duties	High: confident user of educational technology	Reports pressure to innovate
T5	Male	Mid-career	Private lessons	Tutor (formerly schoolteacher)	Moderate: uses machine translation & online tools	Took break from formal school teaching
T6	Female	Early-career	Public school	English teacher	Moderate: uses YouTube and quizzes	Interested in AI but limited exposure
T7	Female	Later-career	Public school	English teacher with reduced classroom hours	High: confident; integrates digital tools into lessons	Involved in admin tasks too
T8	Male	Mid-career	NIS	English teacher	High: promotes tech projects, uses AI tools for prep	Strong innovation mindset
T9	Female	Mid-career	Public school	English teacher	Moderate: uses online resources, some AI familiarity	Balanced tech usage
T10	Female	Mid-career	University (ex-school)	University instructor (former schoolteacher)	High: uses AI writing assistants, chatbots	Reflected on both school and university teaching
T11	Female	Early-career	Public school	English teacher	Moderate: confident in social media use	Keen to learn about AI in education
T12	Female	Later-career	Public school	English teacher	Low: limited engagement with AI tools	Prefers traditional methods
T13	Male	Mid-career	Public school	English teacher	Moderate: uses digital display, some online platforms	Explores AI cautiously
T14	Female	Mid-career	NIS	English teacher	High: uses digital tools extensively	Advocates for AI integration in schools
T15	Female	Studying full-time	University (break from school)	Master's student (former teacher)	Moderate: familiar with AI tools from coursework	Interviewed due to prior school experience
T16	Female	Mid-career	Public school (region)	English teacher	Moderate: uses online tutorials and translation tools	Only participant from another region

Note. School type: NIS: Nazarbayev Intellectual School (selective) & others are standard public/private institutions; AI/digital use: Based on self-reported tech confidence and tool usage discussed in interviews; Career stage: Based on years of experience–early (< 5), mid (5–15), later (> 15); T15 and T16: Included due to relevance despite being slightly outside the core PD cohort.

Teaching experience was mixed: four were in early career (fewer than five years teaching), seven in mid-career (between 5 years and 15 years teaching) and four in later career (more than 15 years teaching). All were teaching secondary age groups but in some cases they also had classes with younger children either as part of their contract or as private lessons. Five were working in the selective NIS schools mentioned earlier. Those teaching in these schools (n = 5) were aware they were often better resourced. Set against this, these teachers did feel extra pressure in terms of reporting and innovation. Language class sizes in all schools were given as between 16 and 25 students.

In interviews, most described themselves as knowledgeable about, and confident in using, technology and all made widespread use of social media. They used technology consistently for accessing articles and writing reports in their studies and for carrying out lesson preparation and for overhead displays in the class – for example showing video clips. Some integrated the use of Padlet into their lessons and some turned to online

quizzes for revision games. Sometimes students were given projects which involved accessing web sites. Older students were encouraged to search out extra online tutorials and practice.

An interview schedule was drafted, piloted with volunteer teachers (n = 3), discussed by researchers, and agreed upon. The schedule was divided into sections:

1. About you and teaching: to establish teachers' background and their attitudes to teaching.
2. About digital technology: to establish their confidence with technology, its use in and out the classroom, teachers' access to resources and their experiences of using technology during COVID-19 lockdowns.
3. About AI: what teachers understood by the term AI, any use made of AI supported applications including generated text, machine translation, writing assistants, marking software, chatbots and ILS.
4. The future of language teaching: what will language teaching look like, what role for the teacher?

A challenge in interviewing was that there were so many aspects of AI to talk about. We decided to go for broad coverage but to spend more time on the areas in which the interviewee had greater knowledge and interest. This meant that less time was spent on marking tools and on ILS as many interviewees knew little about them, though they could easily grasp the principles once shown. Intelligent virtual environments and affective AI tutoring were not covered as their take-up is minimal in schools to date.

The interviews were carried out from 18 December 2023 to 14 January 2024. These were conducted via video link and teachers preferred to speak in English, in which language they were proficient. Each interview lasted around 40–50 minutes. The interviews were transcribed, and a process of coding began, i.e., the associations made with units of meaning in the text were identified, discussed, and agreed on by researchers. The interview transcripts were analyzed using an inductive thematic analysis approach (Braun & Clarke, 2006). The process began with familiarization through repeated reading, followed by open coding which led to the production of a code book with 49 codes. Codes were discussed, refined, and grouped into categories, which were then organized into overarching themes. This bottom-up approach allowed the research team to remain close to the data and ensure that the resulting code book reflected participants' perspectives.

The code book was then tested using a selection of transcripts with an acceptable degree of accuracy. We conducted manual coding using printed interview transcripts and digital spreadsheets. Initial codes were annotated in the margins and later transferred into a coding table for comparison and refinement (**Table 2**). These codes were then transcribed into an Excel spreadsheet, where similar items were grouped into 15 categories. Through iterative comparison and discussion, the categories were refined and synthesized into 5 overarching themes. This inductive approach allowed for flexible, interpretive engagement with the data while maintaining analytical rigor. We were struck by the consistency in the data, despite variations in personal and school characteristics, and have therefore emphasized the broader trends in the following report. Naturally, within each category, there were exceptions; for instance, one teacher exhibited exceptional confidence in their technology skills, while another found technology to be 'terrifying.' We have highlighted these outliers where relevant.

The list of 49 codes was manageable but needed to be more coherently organized. Two researchers coded the transcripts independently and then met to compare interpretations. Discrepancies were resolved through discussion until consensus was reached. First, we grouped the codes around 15 categories as can be seen in **Table 3**: *Context; enjoyment of teaching; frustrations; about technology in general; AI in general; ChatGPT; (AI) conversation; (AI) writing assistants; (AI) marking; ILS and instructor programs; (AI) translation; other digital tools (not AI); future scenarios*. These categories were then grouped around five main themes which ran throughout the research project: *Teachers' backgrounds; What do teachers believe about teaching and what motivates them? What are teachers' perspective on technology? What do teachers know and think about AI? How do teachers see the future of AI and language teaching?* By working in a bottom-up fashion (codes to categories, to themes) we came to the data with as open a mind as possible.

Table 2. Code book used in thematic analysis

Code groupings	Example quote	Categories/themes
Enjoyment of teaching	I really love seeing my students grow	Teachers' backgrounds
Frustration with AI tools	I worry students rely too much on ChatGPT.	Teachers' knowledge and perceptions of AI
Context	I've taught for 15 years in a rural school.	Teachers' backgrounds
Belief in AI potential	I think AI could really help students write better essays	Teachers' knowledge and perceptions of AI
Skepticism about AI	AI just gives generic answers–I'm not convinced it help	Teachers' knowledge and perceptions of AI
Technology anxiety	Sometimes I feel overwhelmed by all these new tools.	Teachers' perspectives on technology
ChatGPT as writing aid	I had my students use ChatGPT to brainstorm essay topics	I had my students use ChatGPT to brainstorm essay topic
Assessment concerns	It's hard to tell if a student wrote it or ChatGPT did.	Teachers' knowledge and perceptions of AI
Motivations for teaching	I wanted to make a difference in students' lives	Beliefs and motivations in teaching
Future scenario (positive)	In five years, AI will be integrated into every classroom	Future views on AI in language teaching
Future scenario (negative)	AI might replace teachers if we're not careful	Future views on AI in language teaching
Use of other digital tools	I often use Kahoot to review vocabulary	Teachers' perspectives on technology
Translation support	I used Google Translate to explain grammar rules	AI in teaching practice
AI for marking	I tried an AI tool that marked student essays	AI in teaching practice
Instructor development	We need more training to use AI effectively	Teachers' backgrounds

Table 3. Summary of themes and associated categories

Theme	Associated Categories
1. Teachers' backgrounds	- Context - ILS and instructor programs
2. What do teachers believe about teaching and what motivates them?	- Enjoyment of teaching - Frustrations
3. What are teachers' perspectives on technology?	- About technology in general - Other digital tools (not AI)
4. What do teachers know and think about AI?	- AI in general - ChatGPT - (AI) conversation - (AI) writing assistants - (AI) marking - (AI) translation
5. How do teachers see the future of AI and language teaching?	- Future scenarios

A trustworthy account is often described as *confirmable, credible, transferable* and *dependable* (e.g., Korstjens & Moser, 2017).

Confirmability was addressed by participant checking of transcripts and moderation of codes between researchers. We later engaged in further conversation about the findings with those participants (n = 4) who were particularly keen to get back to us post interview. In addition, an important aspect of confirmability involved comparing interview findings to a wider survey carried out with the cohort and to the general literature including TALIS data.

Credibility was based on our close connection with education and with language teaching in Kazakhstan. Author 1 was lecturing in Kazakhstan at the conception of this study. Author 2 had taught in schools in Kazakhstan and carried out a great deal of pre-service and in-service work with Kazakh teachers. Both authors had long experience of teaching and writing about language learning.

Transferability refers to the degree to which the findings of one's inquiry can apply beyond the bounds of the project, in other words is it relatable to other contexts? We suggest that our key findings can inform other studies where broadly similar conditions apply.

Dependability considers the process of data collection, data analysis, and theory generation and is evidenced by an audit trail, for example laying out an interview schedule, code book, and thematic analysis.

THE FINDINGS

This findings section explores teachers' knowledge of, and attitudes toward, AI-supported tools, focusing on their practical uses, perceived limitations, and implications for the teacher's role. While participants generally expressed enthusiasm about AI's potential, their accounts also revealed underlying tensions related to pedagogy, ethics, and contextual appropriateness that align with concerns noted in prior research (Holmes & Miao, 2023; Luckin et al., 2016).

Most teachers reported first encountering AI tools like ChatGPT through social and news media, often associating AI primarily with ChatGPT's ability to generate responses quickly and intelligently. As one teacher explained, AI differs from other educational software in that it "**could do the work for you**" (teacher 3), such as generating quizzes on demand, provided the user clearly specifies context and language level. This reflects observations in recent studies where AI tools are valued for automating routine tasks (Nogaibayeva et al., 2024). Many described AI as "**smart**" and "**making our lives easier**," yet expressed caution about its limitations, particularly regarding contextual understanding and the lack of genuine human interaction. For example, one participant noted, "**It can be a stand-in for human interaction, but only up to a point; it lacks the deeper understanding a person brings**" (teacher 7), echoing concerns about AI's inability to replicate the relational and emotional dimensions of teaching (Zawacki-Richter et al., 2019).

Teachers' practical use of ChatGPT varied from lesson preparation–ranging from warm-up activity suggestions to full schemes of work including quizzes and assessments–to administrative tasks like drafting letters or reports. Several teachers described ChatGPT as a "**friend**" or "**surrogate colleague**" (teacher 4 and teacher 8), especially valuing it as a resource when peer support was limited. One teacher shared, "**I don't have many opportunities to turn to colleagues for ideas so for me ChatGPT is a very good resource**" (teacher 4). However, all emphasized the need to adapt AI-generated content rather than relying on it uncritically. This practical engagement suggests a pragmatic but cautious approach, reflecting both openness to innovation and professional responsibility (Kimmons & Veletsianos, 2018).

Despite teachers' use of AI for their own tasks, they were generally concerned about students' use of ChatGPT, perceiving it as problematic. Many believed that students were using AI to "**cut corners**" (teacher 5), producing essays or assignments with minimal effort, thus undermining authentic learning and preparation for assessments. One teacher lamented, "**This is making students lazy. They are learning nothing by just asking the program to write their essays**" (teacher 9). Such concerns align with broader debates on academic integrity and the ethical implications of AI use in education (Bretag et al., 2019). These concerns were echoed in schools' widespread policies banning student use of ChatGPT. Yet teachers recognized the limitations of such blanket bans, advocating instead for educating students about "**acceptable use**" versus "**unacceptable use**." As one teacher put it, "**We need to teach the younger generation… to use AI but not to be too dependent on it**" (teacher 6). This nuanced stance reflects emerging consensus on the need for digital literacy education rather than prohibition (Williamson & Piattoeva, 2018).

Moving to *writing assistants* such as Grammarly and Instatext, teachers saw these as acceptable and helpful for language learning. Indeed, teachers used them for checking their own writing. Some said that such checking gave them confidence that they were writing in a grammatically correct way and added that they had learnt by working through errors. As one teacher commented, "**The program can't grasp the context of what the student is trying to say, and the feedback is hard for them to understand sometimes**" (teacher 2), consistent with findings that AI writing tools can fall short in nuanced language learning contexts (Burstein, 2023).

Teachers' use of translation tools (Google Translate, ChatGPT, and Yandex) similarly reflected a nuanced understanding. While machine translation was valued for task completion, such as drafting school reports or supporting communication abroad, teachers stressed that genuine language learning required active engagement beyond machine output. Several teachers reported that students attempted to disguise AI use by superficially altering machine-translated texts, but "**this is easily identifiable**" (teacher 10), making it a continuing ethical and pedagogical challenge (Kirkpatrick, 2022).

Beyond these common tools, teachers had limited experience with AI applications like chatbots for conversation practice or summative marking software. Nonetheless, they recognized the potential benefits of

such tools for language rehearsal and workload reduction, albeit with skepticism about AI's ability to provide meaningful, motivational feedback. Several teachers emphasized the moral and relational dimensions of feedback–such as recognizing student effort–that AI could not replicate. One teacher explained, "**I use feedback to show I value a student who tried their best, even if they struggled. AI can't do that**" (teacher 11), highlighting the affective aspects of teaching that remain beyond current AI capabilities (VanLehn, 2011).

Teachers' reflections on future AI applications, including 3D avatars and AI-enhanced programmed learning, revealed cautious optimism. While envisioning technological advances, they insisted that physical teachers would remain essential for managing learning, mediating interaction, and fostering emotional engagement. One participant emphasized, "**I want emotions, I want the person, the interaction, the atmosphere …**" (teacher 1). This points to a professional identity centered on interpersonal connection and contextual knowledge–qualities that AI cannot easily emulate (Cuban, 2023).

Few had experience of using *summative marking* applications, though teachers could clearly see their value, assuming they were reliable, and they could be particularly useful for dealing with the workload when students were preparing for exams. However, they also had anxieties such as whether the machine would know the level of the learner and the context of the exercise and they doubted a program could give feedback in the same positive way that they did. For example, one teacher explained how they used feedback to show that she valued a student 'who had tried their best' even if they struggled with the task. In contrast, and this was a general point made by several teachers, AI lacked such a 'moral' dimension.

As for programmed learning and *ILS*, teachers had very little experience of using tutoring software other than to support IELTS (International English language testing system) preparation. However, two mentioned Duolingo which had been promoted in one school and small rewards had been offered to students making the most progress, but this was an add-on only for those interested and not widely used.

When asked to consider future scenarios, such as teaching being carried out by 3-D avatars and AI-enhanced programmed learning, everyone could envision new technology coming into schools. However, they believed that the future classroom would still be recognizable and that a physical teacher would be necessary to manage learning. They related this to their experience of teaching online during COVID-19 related lockdowns and to a more general belief in the importance of physical interaction in the classroom.

Teachers explained that teaching languages was about communication–the stem 'communic' appeared 16 times in the transcripts always in a positive context. Teachers gave repeated examples of how, in what they described as a good lesson, they tried to ensure there were opportunities for students to talk to each other in English. Those teaching younger learners spoke about using games and singing along to simple songs as opportunities to practice fluency and with older students teachers might set more open pair or group activities. Teachers were encouraged in their commitment to communicative activity as their older students accessed social media, films, and music in English. The goal of language learning was then not simply a matter of being able to 'decode' words but using language to weigh up, develop and understand ideas within a wider culture. This meant that language teaching was participative and emotional in ways teachers thought other subjects were not. As one teacher put it when discussing her role, 'I want emotions, I want the person, the interaction, the atmosphere …' Peer to peer interaction was important, but a teacher needed to explain language points, set up and monitor activities, carry out different types of assessment and so on. To do this well teachers need to know the history and the background of the students. As one teacher put it, 'teachers know so much about the individuals in the class that AI cannot know in the same way.' Further, the teacher was a role model for learners in a way that a robot was not.

Finally, teachers' commitment to communicative language teaching emerged strongly, with repeated emphasis on creating opportunities for authentic student interaction, supported by games, songs, and group activities. They acknowledged the influence of students' access to English-language media and culture, reinforcing the view that language learning transcends decoding words to involve cultural and emotional engagement (Nunan, 2003).

DISCUSSION

The findings initially align with the literature review, highlighting three main themes: *teachers' gaps in AI knowledge, their recognition of AI's potential opportunities, and their concerns about its use*. First, consistent with previous studies (e.g., Galindo-Domínguez, 2024; Lindner et al., 2019; Miao et al., 2024; Velander, 2023; Yue et al., 2024), teachers demonstrated limited knowledge and experience with many AI tools such as marking software and ILS. However, they were more familiar with established applications like machine translation and writing assistants, and highly aware of ChatGPT. Their discussions often drew on informal or personal knowledge, echoing findings by Kostka and Toncelli (2023) and Velander et al. (2023). Notably, experience with an AI tool did not necessarily correlate with more positive attitudes toward its teaching potential (cf. Nazaretsky et al., 2021; Velander et al., 2023). Teachers with direct experience could discuss specific applications more concretely, such as translation software, whereas lack of experience limited discussions to generalities, as observed with summative assessment tools.

The second point raised in the literature review was that teachers recognized opportunities with AI (e.g., Aghaziarati et al., 2023, Velander et al., 2023). Perhaps clearest here were teacher efficiencies (Holmes, 2023). Teachers were happy to use ChatGPT to help with lesson preparation (as were teachers in higher education in Ulla et al.'s [2023] study) and in principle were willing to use other labor saving tools such as automatic marking. As for student use, they saw opportunities for students to practice written and spoken language through chatbots and for getting important feedback through writing assistants. They were more reserved about these opportunities than has been reported in some studies (e.g., Huang et al., 2020; Kim & Kim, 2022) and did not speak specifically about personalizing learning as found in Holmes (2023), Rus et al. (2024) and others. However, they did make general points about opportunities for engaging students with technology particularly in game-like scenarios.

Third, teachers voiced concerns about AI's reliability, risks of plagiarism and cheating, transparency, and its limitations in fostering creativity and critical thinking–issues widely documented in the literature (e.g., Aghaziarati et al., 2023; Kohnke et al., 2023; Rudolph et al., 2023). They also identified more specific limitations of certain applications than have been reported, for example in Cancino and Panes (2021) on machine translation and Huang et al. (2024) on writing assistants.

A prevailing theme was apprehension about over-reliance on AI and the potential erosion of teachers' roles, reflecting concerns raised in Cojean et al. (2023), Holmes (2023), and Rus et al. (2024). Teachers emphasized the unique value of human interaction, arguing that machine learning lacks emotional intelligence and cannot fully 'read' the classroom context, as noted by Wilson et al. (2017). While AI may stimulate learner interest and create engaging challenges, its novelty may diminish over time (Dizon, 2023). Despite being impressed by AI's speed and relevance, teachers maintained that AI cannot substitute the 'real' human element essential to effective learning (Guilherme, 2019). Their skepticism towards ILS was particularly striking, contrasting sharply with promotional claims by Luckin and Holmes (2016) and Miao et al. (2021). Importantly, their reservations did not stem from technophobia or fear of job displacement (as suggested by Hopcan et al., 2023), but from a recognition that machines cannot replicate the teacher's unique contributions. This aligns with Cope et al. (2021), who assert that teaching remains fundamentally the work of human teachers and learners.

A general theme in the findings was a fear of over-reliance on machines and a taking away of their role as teachers as, for example, appears in Cojean et al. (2023), Holmes (2023), and Rus et al. (2024). Their commitment to interaction in the classroom led them to believe that 'machine learning' was suspect. Machines operated on algorithms not emotion. This is part of a general argument that machines only know students through the digital traces they leave and cannot 'read' the classroom (a point raised by Wilson et al., 2017). Moreover, machines could trigger an interest in learning and set up game-like challenges but the novelty may wear off (see earlier reference to Dizon, 2023). Teachers found machine output impressive in its speed and often in its relevance and quasi authenticity but it could not pass as the 'real thing' and at some point learning would break down (Guilherme, 2019 earlier). Students could rehearse language skills using AI but interaction did not pass the so-called Turing (1950) imitation game (the idea that AI was established when a human interlocutor could not distinguish machine from human output). This explains their low interest in ILS, something strikingly at odds with claims for AI made by its promoters (Luckin & Holmes, 2016; Miao et al.,

2021 earlier). In fact, their doubts about many aspects of AI were not based on anxiety around the use of technology (as in Hopcan et al., 2023) or 'fear' of displacement (as appears throughout the literature), it sprang from an awareness that the machine could not do what the teacher could do. They are here in agreement with Cope et al. (2021, p. 1242) who argue that teaching 'remains the job of teachers and the work of learners'.

Teachers also acknowledged AI's potential in self-directed learning contexts, especially for motivated students preparing for high-stakes exams. However, they stressed that most students would require teacher guidance to sustain engagement with AI tools outside the classroom. Consequently, AI's current role in language teaching appears niche–ILS may appeal to exam-focused students, writing assistants support out-of-class tasks, and chatbots provide opportunities for fluency practice when human interlocutors are unavailable. Many teachers did not envisage AI replacing their role and generally believed it should not.

CONCLUSION

This study contributes to the growing body of research on teachers' perceptions of AI by highlighting three key themes: *limited knowledge, cautious optimism, and critical concern*. While the teachers demonstrated some familiarity with well-known tools such as ChatGPT and machine translation, their overall knowledge of newer or more specialized AI applications remained limited. This confirms earlier research identifying a lack of experience and formal training in AI integration among educators.

Despite these limitations, teachers expressed a pragmatic openness to AI's potential benefits. They acknowledged its usefulness in enhancing teaching efficiency and providing students with additional practice opportunities, particularly in writing and speaking. However, unlike some prior studies reporting high enthusiasm, this study reveals more tempered expectations. Teachers emphasized that AI tools, while potentially valuable, should serve as supplementary aids rather than replacements for human instruction.

Crucially, the study foregrounds educators' concerns about AI's impact on learning quality, academic integrity, and teacher-student interaction. Their skepticism was not rooted in technophobia, but rather in a critical awareness of what machines cannot replicate–emotional intelligence, spontaneity, and the nuanced reading of classroom dynamics. Teachers also emphasized the risk of over-reliance on AI, stressing the irreplaceable value of human guidance in motivating and supporting learners, particularly in self-directed environments.

There are three important caveats to this study.

First, this is one small scale study in one particular context. It is not generalizable but will be relatable to researchers looking to explore teachers' perspectives on AI in other research contexts.

Second, teachers' perspectives but only one part of a complex jigsaw when it comes to the actual use of technology, for which many other factors play a part.

Third, the study offers a snapshot of perspectives on AI and much is likely to change. For example, most of the interviews in this study focused on text-based applications albeit generating images, even short film clips was mentioned at times. Another development is the incorporation of AI into many long-established applications so that AI use may well become commonplace and indeed go increasingly unnoticed.

In sum, this study underscores that while AI holds promise in language education, its adoption will require careful, context-sensitive integration that respects the pedagogical role of teachers. The findings call for professional development initiatives to enhance educators' AI literacy and more empirical research into how AI tools perform across diverse teaching and learning scenarios.

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anonymized, stored securely, and made accessible only to the research team. No personal identifiers will be published or shared.

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APPENDIX A – INTERVIEWS

The schedule was divided into sections:

1. About you and teaching: to establish teachers' background and their attitudes to teaching.
2. About digital technology: to establish their confidence with technology, its use in and out the classroom, teachers' access to resources and their experiences of using technology during COVID lockdowns.
3. About AI: what teachers understood by the term AI, any use made of AI supported applications including generated text, machine translation, writing assistants, marking software, chatbots and ILS.
4. The future of language teaching: what will language teaching look like, what role for the teacher?

Interview Schedule

About you and teaching

At the moment are you teaching?

Prompts: in which school, for how long, which languages, age level?

Can I ask is this a job you enjoy?

Prompts: relationships with students, interest in language, roles

Can you tell me if you find anything frustrating about working in school?

Prompts: paper work, difficult relationships with students, lack of support for colleagues, pressures of time, salary and work conditions

I think all of us teaching were proud of what we achieved during COVID-19 but found challenges, what was your experience?

Prompts: comparison of working online with f2f classes, any technical challenges

Can you tell me if there is such a thing as a typical lesson for you?

Prompts: use of text book, variety in lesson, flexibility, importance put on different skills and activities

Can you tell me what a good EFL lesson looks like?

Prompts: what would you expect to see students doing, refer back to previous question.

About digital technology

Would you describe yourself as someone who is very knowledgeable about computers?

Prompts: learning to use new machines, who to turn to for help, offering help to others

Can you tell me about using technology in your teaching at the moment?

Prompts: EWBs, ILS, Padlet, Quizziz, WWW.

Do you use computers quite a lot in your life?

Prompts: use for professional tasks (including lesson preparation) and personal uses (e.g. social media)

Can you tell me about the resources you have in school?

Prompts: EWB, class sets of laptops / tablets, personal machines.

Do students have mobile phones? If so can you describe policies regarding phone use?

Prompts: are school policies known, who created them.

About AI

I was wondering what you understood by the term AI, for it's a very difficult term and I'm not sure I understand it myself?

Prompts: awareness of ChatGPT? Use of machine translation and writing assistants?

Does anything differentiate AI from previous technology?

Prompts: any ideas around intelligence and intelligent interaction, any associations with 'smart'.

Where does your idea of AI come from?

Prompts: social media, press and television, colleagues, CPD.

I am wondering if you have used ChatGPT for yourself? What was this for? What did you find?

Prompt: lesson planning, professional tasks, personal use?

Are students using applications such as ChatGPT?

Prompts: how often, can you differentiate AI generated from student generated text.

Should schools limit, even prohibit, use of ChatGPT or should we show students how to use it?

Prompts: present scenarios i.e. outright ban / controlled use / free use

What about machines translation programmes such as Google Translate, do you see these as useful, can they be adapted to the classroom.

Prompts: personal use, student use?

How can they be helpful?

Prompts: vocabulary acquisition, speed and immediacy, accessing difficult texts?

What about the idea that 'I'm not going to bother learning another language' as we have these translation devices?

Prompts: why learn another language / what about using machine translation if you go on holiday?

As you probably know there are many writing assistants such as Grammarly, QuillBot and ChatGPT itself that will give you feedback on writing, do you think this is helpful or not?

Prompts: grammar and spelling feedback, tone and style feedback, correction of errors

Are you familiar with marking software such as e-rater? (If yes, can you talk about your experiences, if no show screen capture of machine marking, what do you see as pros and cons here?)

One thing we can now do with AI is to have a conversation with a program or perhaps with a Robot or personal assistant such as Alexa. Does this have potential for language learning?

Prompts: Any personal experiences? Opportunities for students? Any limits on understanding?

One of the things we haven't talked about is a new generation of AI assisted teaching programmes. Are you familiar with these?

Prompts: screen capture of Duolingo role play and feedback, what do you see as pros and cons here?

The future

If you are thinking ahead to the future do you think schools will look very different or do you think they will be easily recognisable?

Prompts: What will language teaching look like, what technology might take off, what might affect schools and change?

If you think physical teachers in physical classrooms is important, why is that?

Any other comments

Is there anything we have not covered or that you would like to add?

Note. Not all questions were asked in every interview due to time restrictions and due to a general concern to focus in on what the teacher was keen to talk about. Prompts are there in case the teachers was having difficulty in answering the question but they were rarely needed.

Codebook

Table A1. Codebook

Category	Code	Description	Sources	References
Theme: Teachers' backgrounds				
Context	Experience	Specific answers to questions about how long they have been teaching, e.g., I have been in this school for the past 5 years and before that 12 years in another.	15	15
	Tech background	Self-reported confidence and skills when using technology, e.g. I am very happy using IT, other people often come to me for help.	11	12
	School	Specific questions as to the type of school in which they work, e.g., I work in an intellectual school and this is better resources but we have more demands made on us.	15	15
	Classes	Description of particular classes taught, e.g., I am teaching at the moment mostly English and preparation for exams.	7	8
	Role	Discussion of teaching responsibilities and /or leadership roles, e.g., This year I am a research coordinator. I can observe classrooms and see the progress of students and look at what is working.	5	6
Theme: What do teachers believe about teaching and what motivates them?				
Enjoyment of teaching	Teaching in general	General comments about teaching and their enjoyment of the work, e.g., Yes I truly enjoy this work. I chose it and actually it feels more like a hobby than a job.	9	9
	A good lesson	What a good lesson looks like in terms of activities and skills, e.g., in a good lesson there should always be some speaking, students should use language creatively.	10	12
	Subject knowledge	Comments about subject knowledge and sense of knowing what to do in the classroom, e.g., I know what my students need or require from my teaching… I react to what my students need so I don't follow the lesson flow because if my students need something to change I immediately change it.	6	8
	Relationship with students	The importance of relationships with students, e.g., teaching people is making them feel included because when I was studying at school not all the teachers were so welcoming and that's why I wanted to do it myself.	9	11
	Seeing students succeed	The motivation from seeing students learn a language or otherwise succeed in their studies, e.g., for sure it's something that I really enjoy when you see the progress they make when you see that at the start they don't know very much and you see what they do after some lessons … it makes me feel 'well we did it'.	6	9
	Variety	The varied nature of teaching and the sense of not being 'stuck in a rut', e.g., although I have been teaching 22 years there is still a lot of things to learn … and each day is very different so I cannot say that I will be doing the same thing again and again …	2	3
Frustrations	Disappointment in general	Any general comments about difficulties and disappointments, e.g., *yes I have been thinking that the work is too much for me recently*	4	5
	Administrative tasks	Negative associations made with the extent of administrative tasks and lack of value of those tasks, e.g., *I have to do the same thing several times, we do it for folders and then for the different platforms … and deadlines are not realistic … this is in all schools not just my school.*	5	6
	Young people being difficult	Negative associations made with behavior of students, e.g., *I am not always as strict as I should be or want to be and sometimes they are tired and they can become difficult and that can upset me.*	6	6
	Experiences of lockdown	Associations made with teaching online during lockdown, e.g., *I didn't like that so much because we could not feel the atmosphere ..it was really, really hard for them to learn and really, really hard for me to create the atmosphere of an English teaching world*.	8	9

Table A1 (continued).

Category	Code	Description	Sources	References
	Parents	Lack of support from parents in dealing with difficulties posed by students, e.g., *They sometimes have different expectations and some of them might be very mean so they might overreact to something at school.*	2	2
	Responsibility	The sense of being overwhelmed by the pressure of the job and doing it right, e.g., *one of the things which frustrates me is the demands of the work. There are so many things to do at the same time and I cannot find the time for all of them.*	3	3
	Routines	Lack of variety and sense of going through the motions, e.g., *After so many years things become repeated, the calendar looks the same and you try the same projects … I think my personality doesn't really suit that kind of routine.*	2	2
Theme: What are teachers' perspective on technology?				
About technology in general	Access to mobile phones	Use of and policy on mobile phones in schools, e.g., *they have them but are not allowed to use the mobile phones all the time so that is why we have a special box and I collect all the mobile phones. But if I want them to access apps they can have them.*	10	12
	Access in school	Access to OHP and smart boards, software and the Internet, e.g., *I tried to use web search sometimes but you need to be aware that internet access is not so good and it takes time we have special LED screens connected to computers and that's why it's not a problem at all the only thing is Internet sometimes.*	11	14
	Student use	Student use of technology for learning in and out of school, e.g., *out of school they use their phones all the time but not really for learning, only the older ones who may be taking an exam they may do online practice tests. Sometimes students are given projects to do and asked to find out for themselves.*	8	11
	Teacher use in classroom	Use of computer in the classroom, e.g., *most of the time I use the projector … I always need a computer to connect to the projector to display the presentation or some of the activities. I always like students to be able to access the lesson visually.*	7	9
	Teacher use in daily life	Use of computers in general such as social networks, online shopping as well as teaching preparation, e.g., *I use computers all the time for research but try to keep away from social networks during term time.*	11	11
Theme: What do teachers know and think about AI?				
AI in general	Definition of AI	Understanding of what AI is (in very broad terms), e.g., *I guess advanced technologies that can make our lives smarter than we can as humans by ourselves … my understanding it sounds like it can even replace human interactions and I guess this is the highest level of technology*.	11	13
	Responses to idea of AI (pro)	General positive association made with AI, e.g., *In my experience it makes my life easier … as long as you give the proper instruction to the program.*	4	6
	Responses to idea of AI (con)	General negative association made with AI, e.g., *AI does not feel emotions and when it comes to personal feelings teachers can do that better.*	4	7
ChatGPT	Immediate response to generated text in ChatGPT	Sense of surprise, interest, concern on first seeing ChatGPT, e.g., *So I thought it was a great thing if you are short of time but it's not a great thing to use in general as it gives you a kind of feeling that you are maybe cheating … that you have offended someone by doing that and you kind of feel guilty.*	9	9

Table A1 (continued).

Category	Code	Description	Sources	References
	ChatGPT students	Students' use of ChatGPT e.g. *last year my students … well … ChatGTP was used suddenly by everyone around the world and I thought my students did not know about that. But I was wrong because they knew about ChatGPT and when they were given assessments like writing tasks or projects they used it.*	8	10
	Alternatives	Awareness of alternatives to ChatGPT, e.g., *I think there are other tools, maybe to create a speech (or dialogue) or if you want to create a video about something.*	2	3
	Integrity	Issues around the reliability of ChatGPT, e.g., *but yes, I know what kind of vocabulary they might use and what kind of structures and when they do something that is not from their level I can see it is with ChatGPT.*	8	13
	Learning to use ChatGPT	How teachers heard about / learnt to use ChatGPT, e.g., *Yes I heard about it around two years ago from my friend who posted to Instagram that she was investigating to see if she could use it to help her prepare for IELTS exam.*	8	10
	Teacher-researcher use	Teachers' use of ChatGPT in their own research, e.g., *I asked it to do a literature review, though when I looked at it I had to change most of it.*	6	7
	Teacher use	Teachers' use of ChatGPT in preparing for teaching or teaching itself, e.g., *I asked it to do some model role plays for my class.*	8	10
AI conversation	Knowledge/ experience of conversation	Experiences of 'intelligent' interaction, e.g., *I'm sorry I haven't tested that I've read a couple of articles though.*	5	7
	Conversation cons	Suggested limitations of conversation with a machine, e.g., *something is missing in these apps because these are not real people and it could just be quite boring.*	7	8
	Pros of conversation	Opportunities which conversation with a machine might or does provide, e.g., *you might have nobody to talk to and this will at least give you practice.*	8	8
AI writing assistants	Knowledge/ experience of assistants	Knowledge of various kinds of assistants, e.g., *I use Grammarly to help with my own writing.*	7	11
	Student use of assistants	How do students use writing assistants, e.g., *I know they use tools like Grammarly but they do not always use them well.*	7	7
	Use of assistants for research	Use of assistants in own essay writing or reports, e.g., *I tried to use them in writing my article in order to check my mistakes and my grammar, I wanted to know that that I'm using the right phrases and that I'm writing in an academic style.*	4	5
	Pros of getting feedback	Usefulness of machine feedback, e.g., *I think my writing is very good but then I use Grammarly and I can see how I can be better … it can find mistakes I had not noticed so I really value that kind of thing.*	4	5
	Cons of feedback	Suggested disadvantages/limitations, e.g., *Students are not good at acting on errors. In any case there is often too much to take in.*	5	7
AI marking	Marking	Awareness of marking programs (Pros and cons are included under this general code as there was so little knowledge of these programs) e.g. *I would like to try it but I don't really know the issues.*	4	4
ILS	AI teaching programs	Awareness of teaching programs (ILS) again only one code used as there was so little covered, e.g., *I've not seen these kind of things used in the classroom of course I know they exist but I haven't got evidence of this myself …*	7	7
AI translation	Teacher use	Whether teachers use these programs for themselves, e.g., *we (teachers) use them because of time management … sometimes for us we get documents from our administration to translate or pieces in a short period of time and I cannot manage that kind of document without the translation tool.*	8	10

Table A1 (continued).

Category	Code	Description	Sources	References
	Translation pros	Opportunities with machine translation, e.g., *I think it helps but not fully … it can really help if you're not sure about something and they might give you some helpful lines.*	9	12
	Translation cons	Limitations with translation programs, e.g., *well again I think students might find them useful but I think some of them will just say 'oh yeah that's the translation and I don't really need to learn anything there'.*	7	8
Other tools (not AI)	Other ICT	Comments on the use of programs not supported by AI, e.g., *I would rather students use an app to hook up with native speakers and they could have a proper conversation.*	6	9
Category: How do teachers see the future of AI and language teaching?				
Future scenarios	Future of language teaching	Thoughts on the future of language teaching learning, e.g., *I believe that people will want to learn another language it's a kind of privilege to be able to speak in another language … well I hope that this is the case*	12	15
	AI policies	Ideas about limiting use, or providing guidelines, e.g., *people will deepen their knowledge using it and they can learn something new. But you must explain to people how to use it properly … we have to show students how to find information … we have to trust them but then check they are doing it properly.*	8	13

APPENDIX B – QUESTIONNAIRE ON ARTIFICIAL INTELLIGENCE IN LANGUAGE TEACHING

We are carrying out a project on Artificial Intelligence and we are particularly interested in ChatGPT, tutorial programs such as Duolingo, translation programmes such as Google Translate and feedback programs such as Grammarly. Please can you help us by answering the following questions. It should take less than 20 minutes. All answers will be anonymous. There is no problem if you prefer not to take part or if you leave a question blank.

1. About you

1. 1. I am now or have recently been a teacher

	N	%
Yes	56	100

Note. N = 56. Percentages throughout are rounded to nearest whole number.

1.2. Your experience of teaching

	N	%
Experience of teaching practicum	14	28
1–5 years	25	42
6–10 years of experience	4	7
More than 11 years	13	24

1.3 The school in which I work, or have recently worked, is a:

	N	%
State school	32	57
Selective 'Intellectual school'	7	13
Private school	17	30

1.4 Please say *what you enjoy* most about teaching (N > 56 as more than response accepted).

	N
Establishing relationships with students	20
Seeing students succeed	20
Sharing my subject knowledge	14
The variety in teaching	12

If there is something other you would like to mention please add here

1. One of the best and very responsible part of teaching is making contribution to the promising future, by building young people's knowledge about the world and shaping their best personalities
2. I also like seeing language development of my students.
3. I love my job and my students
4. I enjoy communicate with children and more concerned about their social-emotional literacy self-development
5. Getting feedback from students

1.5. Please say what you most dislike about teaching

	N
Challenging student behavior	19
Lack of support from parents	15
Administrative tasks	15
Pay (salary) and conditions	12

2. About computers and technology

2.1. I use technology:

	Often		Sometimes		Rarely		Never	
	N	%	N	%	N	%	N	%
In my social life	44	79	8	14	3	5	1	2
In my research	38	68	14	25	2	4	2	4
In my teaching	48	86	6	11	1	2	1	2

2.2. Access to digital tools in school

	Yes		No	
	N	%	N	%
I have a whiteboard linked to a computer in my classroom	36	64	20	36
I can usually get hold of a set of Tablets or laptops for my class	33	59	23	41
Most of my students bring mobile phones to school	50	89	6	11

2.3. Are you familiar with the name ChatGPT or similar AI program?

	N	%
Yes	44	79
No	12	21

2.4. Can you say how you have used ChatGPT?

	N	%
I have not used it all	17	30
I have used it to help in my studies	20	36
I have used it to help in lesson planning	16	29
I have used it with my students	3	5

2.5. Programs such as Grammarly, ChatGPT, and instructional programmes like Duolingo (premium) can give grammar, spelling and other feedback on students' writing. For your students, do you think getting feedback from a computer program:

	N	%
Has many advantages	26	46
Some advantages	24	43
A few advantages	4	7
No advantages at all	2	4

2.6. AI programmes such as e-Rater can mark the work students do. For example, they show the errors the student has made and can give a grade. Do you think this kind of application of AI:

	N	%
Has many potential advantages for teachers	23	41
Has some potential advantages for teachers	26	46
Has a few potential advantages for teachers	5	9
Has no advantages for teachers at all	2	4

2.7. Conversation with a machine. AI programs let you 'converse' with a machine or Robot either through voice recognition or text input. Do you think this kind of application of AI:

	N	%
Has many potential advantages for learners	24	43
Has some potential advantages for learners	23	41
Has a few potential advantages for learners	3	5
Has no advantages for learners at all	6	11

2.8. Many people are users of machine translation programmes such as Reverso and Google Translate. Do you feel these programmes are generally:

	N	%
Very helpful when learning a language	26	46
Reasonably helpful when learning a language	22	39
Little help when learning a language	8	14
No help when learning a language	0	0

3. Where is language learning going?

	Yes		No	
	N	%	N	%
I believe in the future machines will take over many tasks from the teacher.	40	71	16	29
I believe in future a new generation of machine translation will make language learning unnecessary.	20	36	36	24

4. Any other comments

If there is something you would like to add about teaching, AI or indeed technology in general, please do so below:

1. Personally, I think that technology greatly enhances learning by providing various useful learning experiences. Additionally, it can assist teachers in educational process saving them more time to focus on tasks that technology cannot help with. It is just important to keep the balance and not too much rely on technology to the point where you cannot perform necessary skills without the aid of technology. Therefore, it's vital to wisely use the advances in technology to foster the human abilities without losing the value of human abilities when it's not AI assisted.
2. I am sure in the future AI machine will facilitate language learning. By that I mean these programs will help people know more than two languages.
3. Nothing
4. AI tools are widespread among teachers; we do use them to motivate students and improve their language skills.
5. Artificial intelligence is important when it is used wisely and not out of laziness
6. No comment
7. No, I haven't
8. AI technology may do everything in the future, but not teaching with emotions That's why teachers are necessary for everyone We are human bodies, and we need an emotion If not, robots are ruling our world on these days
9. I don't know
10. I have nothing to add
11. No, I don't have
12. Nothing much
13. AI will never be able to replace people
14. I believe in future learners' technologies will be useful for students and teachers

The survey was open to teachers studying on a master's programme for language teachers from 9 January 2024–15 February 2024.