AI in teaching English as a foreign language: Effectiveness and prospects in Kazakh higher education

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Abstract
The article analyses the implementation and efficacy of artificial intelligence in teaching English to first-year students at the Abai Kazakh National Pedagogical University. The present study examined the effects of AI chatbots on students' speaking abilities and overall experiences in the English as a Foreign Language (EFL) classroom. The participants were 11 EFL teachers and 51 Abai University students, who were randomly assigned into two groups: an experimental cohort and a control cohort. The experimental group, consisting of over 26 students, received instruction through AI-based educational programs, while the control group, comprising over 25 students, received instruction through traditional teaching methods. Employing a pre- and post-test research design, the present study undertook a comparative analysis of students' progress in English speaking skills, both within and between experimental and control groups. The findings of the conducted tests have indicated that both groups exhibited a significant improvement in their oral communicative abilities, as evidenced by their performance in the two speaking tasks, namely reading a text aloud and answering questions. As for the student's proficiency and fluency, it was observed that there was no significant difference between the two groups in terms of pronunciation. However, a discernible variation was detected in their intonation and stress patterns during the reading task. The results of this questionnaire offer an analysis of students' attitudes and opinions regarding integrating AI chatbots into language learning. This sheds light on the potential benefits and limitations of utilising such technology in the EFL context. Furthermore, the recent study explores the potential of AI chatbots as an effective tool to facilitate language learning and their future applications in the EFL setting. The implications of the research findings are thoroughly discussed, considering how AI chatbots can potentially enhance language learning and their potential usefulness in EFL education in the future.
Key words: English, artificial intelligence, individualisation of teaching English, higher education institutions

Introduction

Since gaining independence in 1991, the Republic of Kazakhstan has placed considerable emphasis on advancing and disseminating English as a foreign language at the national level. This fact is substantiated by the existence of pertinent regulatory documentation, such as the legislations "On Education" (2007) and "On Languages in the Republic of Kazakhstan" (2011), as well as governmental initiatives aimed at the operation and growth of languages during the timeframe spanning from 2011 to 2020, alongside the enhancement of the educational sector in Kazakhstan within the same period.

However, despite the measures taken, English is still not the main language for most of the population, especially among the older generations who do not use English daily. Conversely, among the younger demographic, we observe a contrary pattern. As a result of modifications within the educational system, English has become an obligatory discipline at all educational tiers, commencing from grade 1 and starting back from the 2013-2014 academic year. The concept of multilingual education,

focusing on studying subjects in English (CLIL), is also worth mentioning. Furthermore, a substantial demand for English-speaking specialists exists within the professional domain. In light of this, an affirmative trend in adopting English in various social spheres can be discerned. As previously stated, one of the principal objectives of higher education in Kazakhstan is integration into the global educational milieu, which augments the competitiveness of Kazakh professionals within the international labor market. Against the backdrop of the burgeoning internationalization of education, the issue of cultivating professionals who possess fluency in multiple languages assumes particular significance. This matter acquires heightened relevance when substantial transformations are transpiring within the education system, including implementing English as the medium of instruction.

At Abai University, students pursue the study of English for 4 years, corresponding to the duration of a bachelor's degree program. By the CEFR scale in higher educational institutions within the Republic of Kazakhstan, first-year students must enter with a B2 level of proficiency and attain a C1 level.

Numerous predicaments associated with English language aptitude hinder individuals from fully engaging in English communication and maintaining it at the requisite level on the CEFR scale commensurate with their course of study.

Our observations regarding the question of teaching English at Abai University indicate that there are presently a multitude of issues present at the university that can elucidate the hindrances in teaching English as a foreign language, which comprise of:

1. Insufficiency of an environment conducive to language acquisition;
2. Diminished motivation to acquire knowledge on the part of students;
3. Prevalence of conventional techniques in the instruction of English;
4. Inadequate proficiency among instructors in practically implementing artificial intelligence in English lessons.

In light of this, we endeavored to employ artificial intelligence in the instruction of English as a foreign language to ascertain the efficacy of its usage and its prospects in the subsequent process of language instruction.

Learning English is a significant and formidable undertaking for numerous individuals, encompassing academic and professional realms. Given that English stands as one of the most widely spoken languages across the globe, acquiring proficiency in English can greatly enhance one's communication skills and facilitate the pursuit of education or employment opportunities. In recent times, the emergence of artificial intelligence has assumed a pivotal role in the realm of education, including in the field of teaching English as a foreign language.

Over the past few decades, artificial intelligence has become an indispensable component of our daily lives, exerting a profound influence across various domains, including education. The teaching of English serves as no exception to this trend. Thanks to technology integration, we can approach education from diverse perspectives and vantage points.

Despite the abundance of research on AI technology, there is a lack of studies on its impact on Kazakhstan's English as a Foreign Language (EFL) higher education. Furthermore, most existing studies focus on the student perspective and consider the teacher's point of view less. However, studies have shown that teachers play a fundamental role in the educational process (Barakina et al., 2021). Teachers' attitudes and beliefs significantly influence the effectiveness and integration of technology in the classroom (Johnson et al., 2016). Therefore, it is crucial to examine the impact of integrating AI technology in the teaching and learning process from the teachers' perspectives since they are key stakeholders in curriculum implementation at the university level. This review will analyze the impact of using AI technology in language learning, specifically for EFL learners in higher education, from the teachers' viewpoint.

The current study aimed to explore the impact of AI systems on the EFL teaching-learning context at Abai University by analyzing the perceptions of students and instructors. We used advanced tools such as Text Cortex, a chatbot-driven AI system for vocabulary enrichment, Elsa Speak for voice recognition refinement and Grammarly for enhancing English grammar. Based on existing literature and potential areas for further research, we conducted a thorough investigation to gather meaningful insights.

Based on the topic of the study, the hypothesis is that the integration of Artificial Intelligence (AI) in teaching English as a Foreign Language (EFL) will lead to a more effective and efficient language learning process among Kazakh higher education students and will have the potential to enhance the prospects of English language proficiency at Abai University.

Literature review

We analyzed the works of foreign scientists in the field of using artificial intelligence in teaching English. The positive side of using AI in foreign language teaching has been highlighted in the writings of Duarte (Duarte,2023), while at the same time, the ethical issues and limitations of using AI in education have been analyzed (Holmes & Twomey, 2023; Sims, 2023). Many scholars have noted the importance of developing students' critical thinking in the application of AI in foreign language teaching (Supiano, 2023; Zhai, 2022).

The following works of scientists are devoted to the issues of using AI in developing foreign language writing skills of students, increasing vocabulary (dos Santos et al., 2023; Kim et al., 2023; Yan, 2023), and also note that AI can help identify unknown words, generate dialogues at different language levels and explain terms in students' first language (Kohnke et al., 2023). Moreover, the next group of scholars emphasizes the application of Bloom's classification in the process of improving writing skills (Chandio et al., 2021). Artificial intelligence can develop educational plans, thereby alleviating the burden on educators regarding material and assessment preparation. Additionally, its content can be tailored to captivate and engage students, thus fostering their interest (Farrokhnia et al., 2023; Skrabut, 2023).

The growing interest and swift advancement of artificial intelligence foreshadow an imminent surge in the creation of additional resources and aids for teachers of English as a foreign language who will employ artificial intelligence for curriculum design, resource creation, and evaluation (Kostka, Toncelli, 2023).

Renowned scientist Richard Stallman (2023) created groundbreaking software to facilitate English language instruction. This innovative tool empowers students to learn at a personalised pace through engaging, interactive exercises that automatically detect and correct errors. Stallman champions using artificial intelligence to boost student confidence and improve learning outcomes in English language acquisition.

John McCarthy (2014), a famous scientist in artificial intelligence, proposed using robotic assistants for English instruction. He believes such robots, equipped with artificial intelligence, can create a friendly and relaxed learning environment while offering individualised attention to each student.

However, not all scientists approve of the use of artificial intelligence in teaching English, believing that such an approach replaces human interaction and does not consider students' individual characteristics. They also point out that artificial intelligence cannot completely replace the role of the teacher in developing communication skills and adapting to different situations.

Artificial intelligence in English language teaching is a complex and debated topic, with many scientists working on it. It is important to balance using new technologies and maintaining the human factor in education. Regardless of which viewpoint you

share, the use of artificial intelligence in English language teaching certainly has an impact on the learning process and can help students achieve their educational goals.
Another scholar, Stallman (2023), created specialized software for teaching English as a foreign language. This software enables students to learn independently through interactive exercises while providing automatic error correction and explanatory feedback. (Stallman, 2023) Stallman asserts that implementing artificial intelligence can facilitate enhanced outcomes and self-assurance among English language learners.
John McCarthy (2014), yet another prominent researcher in the field of artificial intelligence, has advocated for the integration of robotic assistants in English language instruction. McCarthy contends that robots endowed with artificial intelligence possess the ability to foster a congenial and relaxed learning environment while also offering tailored approaches to individual students (McCarthy, 2014). Nevertheless, not all scholars endorse the integration of artificial intelligence in teaching English, as they argue that such an approach supplants human interaction and overlooks each student's unique characteristics. Additionally, they emphasize that artificial intelligence cannot fully supplant the role of the teacher in nurturing communication skills and adapting to diverse contexts.
The integration of artificial intelligence in teaching English constitutes a multifaceted and contentious topic, with numerous researchers actively engaged in its exploration. Striking a balance between the implementation of new technologies and the preservation of the human element in education is of paramount importance. Regardless of one's standpoint, the use of artificial intelligence in English language instruction undeniably influences the learning process and can facilitate the achievement of educational objectives.

Methodology

Study Objective

The objective of this study is to investigate the various strategies and methodologies associated with the implementation of artificial intelligence (AI) for teaching and learning the English language. A descriptive-analytical approach was employed to achieve this goal.

Research Problem and Questions

The current study addresses the issue of the insufficient level of language proficiency exhibited by English language learners, a phenomenon attributed to the employment of conventional teaching strategies. The study seeks to provide solutions to this problem by addressing the following research questions:
1. To what extent does the use of artificial intelligence (AI) technology into the English language teaching/learning process enhance the quality of learning outcomes, as perceived by university students?
2. How do English as a foreign language (EFL) teachers perceive the implementation of AI technology in their classroom practices?
3. What are the key pedagogical considerations that EFL teachers should bear in mind when implementing AI technology in their classrooms?

Research Objectives

The present study endeavors to shed light on the issue of suboptimal language proficiency among English language learners, which has been largely attributed to the employment of traditional teaching techniques. To this end, this study intends

- to measure the levels and effectiveness of the implementation of artificial intelligence (AI) applications for teaching and learning English, from the perspective of university students.
- to prepare a conceptualisation for the employment of AI applications in the context of teaching and learning English, with the aim of

providing essential pedagogical considerations for EFL teachers to consider while implementing AI technology in their classrooms.

Limitation of the Study

The present study is limited to the following:

- The investigation focuses on the implementation of artificial intelligence (AI) in the context of English language teaching and learning, as facilitated by technological applications, language learning applications, and smart and expert systems.
- The tools employed in the current study are to be applied within the confines of the first term of the academic year 2022/2023, at the esteemed Abai University.
- It is also pertinent to note that the sample under scrutiny is that of first-year students enrolled in the English language department of Abai University, thus ensuring that the study is tailored to the target population.

Participants

The research participants were EFL teachers (11 teachers) who teach students (51 students) enrolled at Abai University, with an equal distribution of male and female participants in the study sample.

Procedure

The questionnaire used in this study was created with great care and attention to detail: the benefits and applications of AI in English language teaching and the potential use of AI to enhance students' communication abilities in English. The second area of inquiry specifically delved into the challenges that may arise in implementing AI in EFL instruction at Abai University. Respondents were asked to rate their level of agreement with each question using a Likert scale that ranged from strongly agree to strongly disagree.

During the research study, we developed learning and teaching materials for 12 weeks on the topics studied in the 1st year in the discipline "Foreign Language". The students were divided into two distinct groups for the experiment: an experimental group and a control group. The experimental group used AI-based learning and teaching materials (English File, 4th edition Student's book; English File, 4th edition Workbook; English File, 4th edition Teacher's book). On the other hand, the control group followed conventional English teaching methods, including using textbooks and teaching by a teacher.

The AI-powered learning and teaching materials mentioned earlier gave the students various tasks to improve their grammar, vocabulary, pronunciation, and speaking skills (Appendix - Table 1). These materials were designed to offer structured content, interactive exercises for foreign language communication, and opportunities for pronunciation practice.

The experiment spanned three months, during which each student group followed their customized training program. Upon conclusion of the experiment, the results were analyzed to assess the effectiveness of AI implementation compared to traditional English teaching methods.

Data analysis tools

An online survey administered through Google Forms was used to collect data from first-year students and teachers at Abai University to ensure that the study results accurately represented the entire participant population. Convenience sampling was the method used to select respondents based on their availability and willingness to participate, and they were recruited through an online platform. Participants were

provided with an informed consent form outlining the study's goals and procedures prior to completing the survey, and participation was voluntary and anonymous.
Descriptive analysis was used to examine the survey data, and a thematic analysis approach was employed to analyze the responses to the open-ended questions included in the survey. The survey was completed by a total of 51 first-year students.
The statistical analysis was conducted utilizing MS Excel and STATISTICA 6.0 software packages.

Ethical issues
The present study acknowledges the ethical considerations that arise in the context of AI implementation in English language teaching. Specifically, it is important to note that the study may not comprehensively address all the ethical concerns associated with this implementation. These concerns include but are not limited to data privacy, algorithmic bias, and the possibility of overreliance on AI without adequate critical thinking and human judgment. Given the complex and evolving nature of these ethical issues, further research and discussion are needed to ensure that AI technology in language teaching is implemented in a fair, responsible, and sustainable manner.

Results
The results of the research conducted as part of an article on the use of artificial intelligence in teaching English include the following data obtained from questionnaires of teachers (11 teachers) and students (51 students):
Professional opinions of teachers:
A majority, over 63% of teachers, believe that using artificial intelligence in teaching English can substantially enhance oral communication skills. Approximately 19% of educators believe that using artificial intelligence in teaching English can significantly augment vocabulary and contribute to the mastery of grammatical concepts.
Around 10% of educators believe that the implementation of artificial intelligence in teaching English can aid in improving comprehension skills in a foreign language.
The remaining 8% of teachers believe that using artificial intelligence in teaching English has the least impact on enhancing students' pronunciation and listening skills.
Nonetheless, on the whole, English educators display a positive attitude toward the possibilities associated with the adoption of artificial intelligence in the analysis of students' language proficiency, the provision of tailored exercises, and the delivery of feedback (Figure 1).

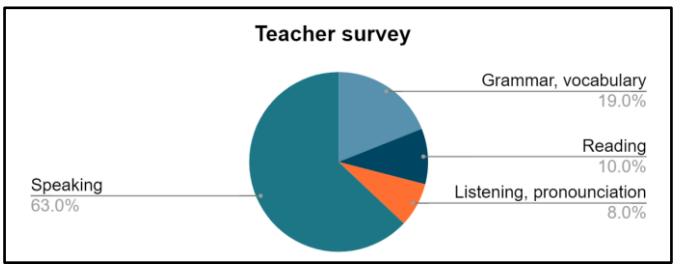

Figure 1: Teacher survey results (N-11)

Student's perspective:
Over 47% of students exhibit a favorable inclination towards using artificial intelligence in the context of English language instruction, while simultaneously acknowledging an upsurge in their motivation to acquire English proficiency.

Approximately 33% of the student body believes that artificial intelligence catalyzes enhanced effectiveness and convenience in their English language acquisition.
The remaining 20% of students accentuate the challenges associated with the employment of AI and contend that the presence of an instructor during AI-infused lessons is indispensable. Broadly speaking, the students who participated in this experiment underscore the positive impact of artificial intelligence on motivation to acquire a foreign language and the subsequent enhancement of communication skills (Figure 2).

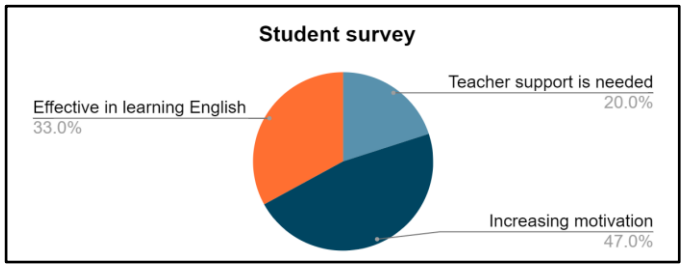

Figure 2: Student survey results (N - 51)

Discussion
We employed cutting-edge technology throughout the course to improve students' speaking abilities, including a chatbot-driven artificial intelligence system. Over 12 weeks, we integrated various AI tools such as Text Cortex for vocabulary enrichment, Elsa Speak for voice recognition refinement, and Grammarly for enhancing English grammar.
Evaluation of the results: To assess the efficacy of the program usage of artificial intelligence, a control examination was administered, encompassing exercises on grammar, vocabulary, reading comprehension, and auditory comprehension. The outcomes of the examination were juxtaposed between the experimental and control groups. The statistical analysis of the data reveals that the mean value of the control group is 15.96, whereas that of the experimental group is 15.69. The median value of the control group is 16, but it is 15.5 in the experimental group. Furthermore, the mode of the control group is 19, whereas it is 15 in the experimental group. It is also noteworthy that the dispersion of the control group is 11.12, but it is 15.42 in the experimental group. The range of the control group is 14, and it remains unchanged in the experimental group. Finally, it is important to mention that the standard deviation of the control group is 3.33, but it is 3.92 in the experimental group.
Upon conducting the experiment, significant changes in the data were observed. The mean value of the control group is now 15.56, whereas that of the experimental group has increased to 19.69. Additionally, the median value of the control group remained unchanged at 16, but it has increased to 20 in the experimental group. The mode of the control group is now 15, whereas it has increased to 23 in the experimental group. Furthermore, the dispersion of the control group has decreased to 9.59, but it is now 9.02 in the experimental group. The range of the control group is now 11, whereas it has increased to 12 in the experimental group. Finally, it is noteworthy that the standard deviation of the control group has decreased to 3.09, but it is now 3.00 in the experimental group. These issues suggest that the experiment has had a significant impact on the data, particularly in terms of the central tendency and the dispersion of the data.
Upon analyzing the results, it was observed that the students of the experimental group, who used the artificial intelligence software, attained significantly better

results when compared to the control group. Zhang et al. (2020) conducted a study on AI-based chatbots and their effectiveness in language learning. The research highlighted chatbots' potential to offer learners immediate and interactive language practice opportunities. The chatbots facilitated natural language conversations and provided personalized feedback, which resulted in increased motivation and engagement among the learners. Chatbots can stimulate intelligent and meaningful social interaction and communication (Clark, 2018), providing diversified opportunities for meaningful FL practices with a range of modalities (textual, audio, and visual) and salient and non-threatening feedback (Bao, 2019). Hasan et al. (2020) suggested that self-confidence in speaking performance is crucial for students' English language learning.

By directing our attention towards the descriptive statistical data, it becomes apparent that before the commencement of the experiment, both the control and experimental groups exhibited identical performance indicators, exemplified by median values of 16 and 15.5, standard deviations of 3.3 and 3.9, variances of 11.1 and 15.4, and ranges of 14 and 16, respectively. Nevertheless, after implementing a series of classes incorporating AI, the obtained results demonstrate that the average number of correct answers in the experimental group increased by 4. In contrast, in the control group, it remained virtually unchanged. Moreover, the disparity between the highest and lowest scores diminished by 4 in the experimental group, while in the control group, it only reduced by 3. Lastly, the variance in the experimental group declined by 6, whereas in the control group, it only decreased by 2.

To test the hypothesis about the effectiveness of using AI in the process of teaching English, we used statistical data analysis using the Wilcoxon signed-rank test. Before the start of the experiment, the empirical value of the T criterion was:

$T=\sum Rt=17.5+23.5+20.5+17.5+23.5+14+14+4.5+10+17.5+25=187.5$

Critical values for the Wilcoxon T-test for n=26:

$Tкр=84$ ($p\leq0.01$)

$Tкр=110$ ($p\leq0.05$)

In this case, the empirical value of T falls into the zone of insignificance: $Tэмп>Tкр(0,05)$.

Data were also analyzed after the experiment using the Wilcoxon T-test in the control and experimental groups. The sum of ranks makes up the empirical value of the T criterion:

$T=\sum Rt=26=26$

Critical values for the Wilcoxon T-test forn=26:

$Tкр=84$ ($p\leq0.01$)

$Tкр=110$ ($p\leq0.05$)

In this case, the empirical value of T falls into the zone of significance: $Tэмп<Tкр(0,01)$. Therefore, we can conclude that the intensity of the negative shift of the indicator exceeds the intensity of the positive shift, that is, the results obtained in the experimental group are significant and prove the effectiveness of using AI in teaching English to first-year students.

The experimental group exhibited escalated levels of grammatical comprehension, vocabulary expansion, as well as enhanced listening skills. Darsih et al. (2021) discovered that "ELSA Speak" can assist students in speaking English more clearly, fluently, and with ease while also encouraging them to practice regularly. Due to the intricacy of English grammar, EFL learners frequently struggle with verb agreement, tense usage, and sentence structure, which are carefully analyzed by AI-powered writing assistants such as Grammarly (Fahmi, Cahyono, 2021). Grammarly offers a wide range of features, including identifying spelling errors, punctuation inconsistencies, and sentence structure issues, which help users develop coherent and error-free text. Additionally, the tool provides insights into writing style by suggesting sentence clarity and conciseness enhancements. Its advanced features include

vocabulary enrichment, which offers synonyms and suggests word variations to improve lexical diversity (Gayed et al., 2022).

Moreover, learners from the experimental group acknowledged that the program incorporating artificial intelligence possessed a higher degree of interactivity and stimulus, thereby fostering their active involvement and advancement in English language acquisition.

Thus, in our opinion, the main advantages of using artificial intelligence in teaching English are:

- Individualization of training based on analysis of the student's language level.
- Providing additional opportunities for training and exercise.
- Increasing motivation and convenience of language learning.
- Feedback and error correction in real-time.

The main disadvantages of using artificial intelligence in teaching English are:

- Lack of effectiveness in teaching complex language skills such as speaking and listening comprehension.
- Artificial intelligence has a limited ability to process the context and meaning of language.

Methodological limitations of the study "AI in Teaching English as a Foreign Language: Effectiveness and Prospects in Kazakh Higher Education" include small sample size, limited availability and reliability of data, and a lack of prior research studies on the effectiveness of AI in language education in the Kazakh context. These limitations may impact the generalizability of the study findings and require further research to validate the results and explore the full potential of AI technology in language education.

Methodological limitations of the study incorporate the use of an online survey to collect data, which may limit the depth and quality of information collected. Additionally, limitations in the researcher's access to participants and resources may impact the study's ability to fully explore the longitudinal effects of AI in language education, as well as potential cultural and other types of bias. Finally, limitations in the participants' fluency in the English language may impact the generalizability of the study findings and require further research to explore the effectiveness of AI in language education across diverse language proficiency levels.

We recommend educators integrate AI-powered tools in language instruction, provide training and support on their effective use, experiment with different tools, emphasize their use as a supplement to traditional methods, conduct further research, and share best practices. The study suggests that AI-powered tools can greatly enhance language instruction and improve learning outcomes for students.

The findings of the study highlight the potential effectiveness of AI technology in language education and call for further research and practical implementation to fully realize its benefits. AI-powered language learning tools can provide personalized and adaptive learning experiences, offer immediate feedback, increase student engagement, and assist language teachers in providing effective instruction and monitoring progress. Future research can explore the full potential of AI technology in language teaching and learning and identify factors affecting its adoption and implementation.

The study on AI in Teaching English as a Foreign Language in Kazakh Higher Education suggests several areas for further research, including investigating the long-term impact of AI-assisted language learning, exploring the effectiveness of AI-powered language teaching in other language skills, assessing attitudes towards AI-assisted language learning, examining AI's potential in addressing individual student needs, and comparing its effectiveness with traditional teaching methods. Conducting further research in these areas can help gain a more comprehensive understanding of the effectiveness and prospects of AI in language education.

Conclusion

The results of this experiment validate the efficacy of employing artificial intelligence in the instruction of English to learners. Artificial intelligence demonstrated a noteworthy enhancement in student outcomes and was highly valued by the learners themselves. Artificial intelligence is assuming an increasingly pivotal role in the realm of English language pedagogy. The usage of artificial intelligence in teaching English to learners can undeniably make a substantial contribution to the cultivation of oral communication abilities. Thanks to AI, learners can avail themselves of personalized exercises, feedback, and the opportunity to engage in interactive speaking practice. One of artificial intelligence's most advantageous aspects is its ability to evaluate students' pronunciation and provide suggestions and counsel to enhance their oral communication. This proves to be particularly valuable for individuals acquiring English as a second language and encountering challenges in accurately articulating specific phonetic elements and intonations.

Another advantage of integrating artificial intelligence in oral communication instruction is its capacity to present students with various subjects for discussion and engage in conversation with them in English. This enables students to enhance their speaking abilities, facilitates the enlargement of their lexicon, and allows them to apply the grammatical structures they have acquired in authentic situations. Consequently, integrating artificial intelligence into English language instruction constitutes a means to personalise and enhance the learning process for students, as it furnishes them with personalised exercises and feedback. This, in turn, aids students in surmounting language barriers and instils a greater sense of assurance in their English oral communication skills.

For the sustainable integration of AI into education, it is important to research the long-term retention of language skills acquired through AI-based learning. Furthermore, researchers need to explore how AI systems can effectively support various pedagogical frameworks in higher education institutions in Kazakhstan. Future studies should also investigate the impact of AI on learner autonomy, intrinsic motivation, and the role of teachers in AI-mediated learning environments. Additionally, research should focus on examining the adaptability of AI-driven platforms to learners' characteristics to offer personalised experiences.

By examining different perspectives, those in the fields of research, education, and policymaking can enhance their comprehension of the possibilities presented by AI technology in teaching English as a foreign language in higher education institutions throughout Kazakhstan. This examination may act as a blueprint for the creation of tailored AI-driven tools for language learners throughout the country.

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Appendix

Table 1 - Example of a lesson plan conducted in the experimental group on the topic "Traveling"

Column name	Content
Lesson title	Travel by plane use of artificial intelligence
The purpose of the lesson	- to develop students' skills in using artificial intelligence in the context of "travel"; - to expand students' vocabulary on the topic "airports" (stopover, arrivals, bag drop, connecting flight, air traveler, departures, baggage reclaim, check-in, customs, passport control, security check, terminal); - to expand students' grammar on the topic "to be going to"; - to expand students' pronunciation on sounds /g/ and /dʒ/.
Course of the lesson	
Introduction (3 minutes)	Introducing the students and elucidating the objective and framework of the lesson. Delivering a concise explication of the concept of artificial intelligence and its function in our daily lives. Inviting students to share their experiences using artificial intelligence if they have used it while traveling by plane.
Activating vocabulary (15 minutes)	Displaying images of diverse categories of travel by various modes of transport and giving students an opportunity to guess the topic of the lesson. 1. Flashcards: using an AI program - TextCortex - students generate flashcards (a word + a definition) related to travel by plane. Students exchange their samples from the tool and encounter the use of artificial intelligence in the realm of travel. 2. Word association: students are given a list of 10 words and asked to use TextCortex to find associations or related words for each one. This can help them make connections between different words and remember them better. 3. Fill-in-the-blanks: students are provided with a sentence or passage with some key vocabulary words missing and asked to use the AI tool to find the missing words. This can help them practice using context clues to figure out unfamiliar words.

Listening (15 minutes)	Pre-listening exercise: in small groups, have students discuss their experiences with air travel using new vocabulary. While-listening exercise: students watch a video about problems at an airport (https://www.youtube.com/watch?v=8rOQP-Wsj2c). Students take notes and identify the advantages for choosing air travel, as well as any challenges or downsides the speakers mention. Post-listening exercise: students summarize the speaker's main points and share their own thoughts about air travel. They use TextCortex for creating multiple-choice questions about what was said.
Speaking (25 minutes)	1. Pronunciation practice: students use ELSA Speak AI to practice their pronunciation of sounds /g/ and /dʒ/. The list of words is given to practice and encourage them to repeat each one several times using the AI tool. ELSA Speak AI provides instant feedback on how well the words are pronounced based on accent and enunciation. 2. Interview: students work with ELSA Speak AI and ask the AI program to generate interview questions. Students discuss their plans using the grammar structure "to be going to". By combining ELSA Speak AI with grammar practice, students can improve their speaking and writing skills, as well as their ability to use English grammar structures in authentic communication. 3. Role play: students create different roles in a simulated conversation and practice speaking with each other using ELSA Speak AI. They create 5 role plays connecting with air traveling: checking-in, boarding the plane, immigrations and customs, in-flight service, lost baggage. Students use the AI tool to assess how well they speak, using the provided feedback to improve their communication skills.

Reading (15 minutes)	Pre-reading exercise: students use TextCortex and create a text for reading named "Tips for a Smooth Air Travel Experience". The AI tool introduces some key vocabulary words from the reading, such as "security screening," "baggage allowances," "hydration," and "in-flight entertainment." Students define each word and discuss any relevant experiences. While-reading exercise: highlighting exercise. Students highlight key words or phrases in the text that help them understand the AI tone or purpose. They might highlight words that indicate the AI tool is providing advice or opinions, such as "recommended" or "suggest." Post-reading exercise: comprehension questions. Students are provided with a list of comprehension questions based on the reading. These questions will help ensure that students are actively engaged with the text and understand its main ideas. 1. What is the recommended arrival time at the airport before a flight? 2. Why is it helpful to know your airline's baggage allowances? 3. What should you wear for security screening? 4. Why is it important to stay hydrated during the flight? 5. What are some examples of in-flight entertainment you can bring?
Writing (20 minutes)	Students write a travel checklist based on the tips provided in the reading. They can include additional tips they've learned from personal experience or research. This exercise will help them synthesize the information from the reading and apply it to a practical situation. Students use Grammarly to get feedback for each sentence, highlighting errors and offering suggestions for improvement. They can review each suggestion and make changes as needed.
Conclusion (5 minutes)	Summing up the lesson and discussing the main results. Providing feedback. Homework: writing a stopover tour using any familiar type of artificial intelligence.