Educators in Transition: Unpacking Argentinean Teachers' Attitudes Towards ai in Higher Education

Docentes en transición: una mirada a las actitudes de docentes argentinos sobre la ia en la educación superior

Éducateurs en transition : une analyse des attitudes des enseignants argentins à l'égard de l'ia dans l'enseignement supérieur

Educadores em transição: desvendando as atitudes dos professores argentinos com relação à ia no ensino superior

Laura Inés Bottiglieri
Research Associate and Associate Professor, National University of Salta, Salta, Argentina.
bottiglierilaura@hum.unsa.edu.ar
https://orcid.org/0009-0008-6203-1941

María Fernanda Irrazábal Paz
Research Associate and Associate Professor, National University of Salta, Salta, Argentina
mfirrazabal@ucasal.edu.ar
https://orcid.org/0000-0001-8922-733X

Carina Beatriz Ramallo
Research Associate and Associate Professor, National University of Salta, Salta, Argentina.
carina.ramallo@exa.unsa.edu.ar
https://orcid.org/0009-0006-2881-5115

Abstract

Artificial intelligence (AI) technology is revolutionizing the way we live, learn, and work. In academic settings, tools such as chatbots, machine translation, and plagiarism detectors are becoming increasingly popular. However, as students' use of these technologies becomes widespread, concerns about the impact it may have on learning, academic integrity, and the role of traditional teaching methods are growing. This paper aims to explore the perspectives of Argentinean teachers on the use of AI in higher education and on its advantages and drawbacks. Through an exploratory qualitative approach, we investigated how much knowledge teachers have about AI and whether they perceive its potential benefits and challenges and its impact on their teaching practices. Results show that L2 instructors exhibit low levels of familiarity and experience with these resources, specifically generative machine translation (GMT) and chat generative pre-trained transformer (GPT). Although some of the interviewees showed positive attitudes towards incorporating these tools into their classes, we also identify their fears and skepticism about these resources in higher education, their concerns about fairness and responsibility, and the lack of knowledge to engage with the software in teaching practices. The study highlights the importance of understanding and addressing EFL instructors' varied perspectives on AI, which is crucial for effectively integrating these technologies into L2 education.

Keywords: artificial intelligence, second language, higher education, teachers' perspectives

Resumen

La inteligencia artificial (IA) ha revolucionado la manera como vivimos, aprendemos y trabajamos. En medios académicos, herramientas como los chatbots,

Received: 2023-12-26 / Accepted: 2024-09-28 / Published: 2025-01
https://doi.org/10.17533/udea.ikala.355874
Editor: Luanda Sito, Universidad de Antioquia, Medellín, Colombia.

traducción automática y detectores de plagio cobran cada vez mayor popularidad. Sin embargo, con la generalización del uso de estas tecnologías entre los estudiantes, aumenta la inquietud por su impacto en el aprendizaje y la integridad académica, y en el rol de los métodos pedagógicos tradicionales. Este artículo se propone explorar las perspectivas de varios docentes argentinos frente al uso de la IA en la educación superior, sus ventajas y desventajas. Siguiendo un método cualitativo exploratorio, investigamos cuándo saben los docentes sobre IA y si perciben sus potenciales beneficios y desafíos, además de su impacto en sus prácticas docentes. Los resultados muestran que los profesores de segundas lenguas muestran poca familiaridad y experiencia con estos recursos, específicamente con la traducción automática generativa (GMT) y con el transformador preentrenado generativo para chat (GPT). Aunque algunos de los entrevistados exhibieron actitudes positivas hacia la incorporación de dichas herramientas en sus clases, también se identificaron temores y escepticismo sobre tales recursos en la educación superior, sus inquietudes sobre la legitimidad y la responsabilidad, y la falta de conocimiento para interactuar con el *software* en sus prácticas docentes. El estudio destaca la importancia de entender y abordar las variadas perspectivas de los instructores de lenguas extranjeras sobre la IA, algo crucial para su integración efectiva en la enseñanza de segundas lenguas.

Keywords: inteligencia artificial, segunda lengua, educación superior, perspectivas de docentes

Résumé

L'intelligence artificielle (IA) a révolutionné notre façon de vivre, d'apprendre et de travailler. Dans le monde universitaire, des outils tels que les chatbots, la traduction automatique et les détecteurs de plagiat sont de plus en plus populaires. Cependant, avec l'utilisation généralisée de ces technologies par les étudiants, les inquiétudes grandissent quant à leur impact sur l'apprentissage et l'intégrité académique, ainsi que sur le rôle des méthodes pédagogiques traditionnelles. Cet article vise à explorer les perspectives de plusieurs enseignants argentins sur l'utilisation de l'IA dans l'enseignement supérieur, ses avantages et ses inconvénients. À l'aide d'une méthode qualitative exploratoire, nous cherchons à savoir ce que les enseignants savent de l'IA et s'ils en perçoivent les avantages et les défis potentiels, ainsi que l'impact sur leurs pratiques d'enseignement. Les résultats montrent que les enseignants de langues secondes ont peu de familiarité et d'expérience avec ces ressources, en particulier avec la traduction automatique générative (GMT) et le transformateur génératif de conversation pré-entraîné (GPT). Bien que certaines des personnes interrogées aient manifesté des attitudes positives à l'égard de l'intégration de ces outils dans leurs classes, des craintes et du scepticisme en ce qui concerne ces ressources dans le troisième cycle, des préoccupations concernant la légitimité et la responsabilité, ainsi qu'un manque de connaissances sur l'interaction avec le logiciel dans leurs pratiques d'enseignement ont également été identifiés.

Mots-clef : intelligence artificielle, langue seconde, troisième cycle, perspectives des enseignants

Resumo

A inteligência artificial (IA) revolucionou a maneira como vivemos, aprendemos e trabalhamos. No meio acadêmico, ferramentas como chatbots, tradução automática e detectores de plágio estão se tornando cada vez mais populares. No entanto,

com o uso generalizado dessas tecnologias entre os alunos, crescem as preocupações sobre seu impacto no aprendizado e na integridade acadêmica, bem como sobre o papel dos métodos pedagógicos tradicionais. Este artigo tem como objetivo explorar as perspectivas de vários professores argentinos sobre o uso da IA no ensino superior, suas vantagens e desvantagens. Seguindo um método qualitativo exploratório, investigamos o quanto os professores sabem sobre IA e se eles percebem seus possíveis benefícios e desafios, bem como seu impacto em suas práticas de ensino. Os resultados mostram que os professores de segundo idioma demonstram pouca familiaridade e experiência com esses recursos, especificamente com a tradução automática generativa (GMT) e o transformador de bate-papo pré-treinado generativo (GPT). Embora alguns dos entrevistados tenham demonstrado atitudes positivas em relação à incorporação dessas ferramentas em suas aulas, também foram identificados receios e ceticismo em relação a esses recursos no ensino superior, suas preocupações com a legitimidade e a responsabilidade e a falta de conhecimento sobre a interação com o software em suas práticas de ensino. O estudo destaca a importância de compreender e abordar as várias perspectivas de uso do software.

Palavras chave: inteligência artificial, segunda língua, educação superior, perspectivas de docentes

Introduction

Artificial intelligence (AI), defined by Rouhiainen (2018) as the ability of computers to perform activities that normally require human intelligence, has been adopted in the different dimensions of our daily lives, permeating various areas of knowledge and human endeavor and is expected to play a major role in education in the near future (Kim et al., 2023). In this context, it becomes essential that training spaces, such as the university, prepare students to face the challenges that this new digital era brings. Although the high potential that AI has to support teaching and learning processes is quite evident, its integration in the educational field has not been free of discussions regarding its benefits and risks.

Today, with the widespread use of generative artificial intelligence (GAI) tools, such as ChatGPT, debates have intensified (García-Peñalvo, 2023). By incorporating elements such as creative intelligence and original production, GAI takes existing technology one step further, giving rise to negative or pessimistic positions, which indicate that the GAI could replace human creativity, encourage plagiarism, replace the work of teachers, promote inequalities (García-Peñalvo, 2023; Kasneci et al., 2023; Zhai, 2022), or more positive visions focused on the potential that these technologies have for the personalization of learning experiences and support for instructional design (García-Peñalvo, 2023; Kasneci et al., 2023; UNESCO, 2023; Zhai, 2022).

In Argentinean universities, concerns about the impact AI may have on learning, academic integrity, the role of teachers, and the role of traditional teaching methods are growing (Bottiglieri et al., 2023). There is an understandable tension among teachers about the possibility that these new technologies might affect their role in education and undermine or disrupt standard and long-held academic traditions. The increasing visibility, user-friendliness, and reliability of AI tools (Jolley & Maimone, 2015), in addition to the widespread perception that their use by students has risen sharply, seem to have led to reactions ranging from cautious optimism to suspicion and even disdain.

Through an exploratory qualitative approach, this article investigates university teachers' optimism—or lack thereof—towards emerging AI technologies by gauging, via semi-structured interviews, their attitudes and perceptions on their students' adoption of these tools. The study specifically targets second language teaching in Argentinean higher education and focuses on four main topics:

- Teachers' knowledge of artificial intelligence tools
- Students' use of AI tools in L2 classes at university
- Teachers' perceptions about AI disadvantages
- The need for an institutional policy about AI use for learning

For this purpose, semi-structured interviews were designed to address the following general research questions:

1. What is foreign language university teachers' self-reported knowledge of AI tools in the classroom?

2. What are these university teachers' beliefs (benefits and drawbacks) about the adoption of new AI technologies for language teaching and learning?

3. What are the conditions under which university teachers would be willing to introduce such tools into their daily practice?

It is evident that the integration of AI in education signals a new era of teaching and learning, characterized by enhanced personalization, efficiency, and engagement (Aghaziarati et al., 2023). However, it is imperative to critically assess the implications of this technological tools from the educators' viewpoint, ensuring that the educational landscape evolves in a way that is both innovative and inclusive.

Medellín, Colombia, Vol. 30 Issue 1 (January-April, 2025), pp. 1-20, ISSN 0123-3432
www.udea.edu.co/ikala

Theoretical Framework

This literature review attempts to provide a comprehensive overview of the existing studies relating to teachers' perceptions and attitudes toward the use of AI tools—mainly ChatGPT and NMT—in language learning. By exploring the insights offered by previous research, we seek to situate our own study within the broader context of this dynamic and evolving field.

AI in Language Learning

The integration of AI in language learning is not a recent development; however, it has gained considerable impetus in recent years. A diverse array of AI-driven tools and platforms now promise the possibility of transforming language education.

In higher education, the emergence of Generative AI tools has caused a clash in attitudes towards their influence in different academic fields, including language teaching. Some educators see AI tools, especially ChatGPT, as a threat which can discourage students from using their creativity and, instead, look for easy ways to complete assignments. In contrast, there are some who believe that AI can foster effective language learning.

Positive Aspects of AI

Several studies have explored the benefits of AI applications in language classrooms, revealing its positive impact on various aspects of language learning. AI has been shown to facilitate meaningful communication (Lu, 2018), promote independent learning (Alhaisoni & Alhaysony, 2017; Tafazoli et al., 2019), improve speaking performance (El Shazly, 2021), increase motivation (Yin et al., 2021), and enhance reading comprehension and writing skills (Bailey et al., 2021; Groves & Mundt, 2015; Jolley & Maimone, 2015; Niño, 2020). More recent research has focused on the introduction of specific AI tools in education and their favorable influence on language development.

One notable advantage is *constant language practice*. AI chatbots immerse learners in interactive language learning environments, allowing them to engage in real-time conversations that foster language growth (Cardona, 2023; Fuchs & Aguilos, 2023). According to Kim et al. (2023), AI can support learners in developing language skills by providing valuable feedback, which enhances overall proficiency. This continuous engagement helps learners practice language skills in a dynamic, responsive manner.

AI also promotes *autonomous learning*, where technological advancements enable learners to work independently and at their own pace. Learners can choose materials suited to their individual needs and interests. Almasri (2024) conducted research among science students, showing that tools like ChatGPT facilitate autonomous learning by helping users grasp complex theories or concepts related to their academic fields. ChatGPT is especially useful for students struggling with particular concepts or seeking quick refreshers. Additionally, other AI-powered tools such as Busuu, Lingvist, Elsa Speak, and Rosetta Stone offer tailored lessons and personalized exercises, allowing learners to practice vocabulary, grammar, pronunciation, and comprehension through adaptive learning paths.

The use of AI tools is also an *effective booster of writing skills*, which are critical in both academic and professional contexts (Imran & Almusharraf, 2023). Numerous studies demonstrate that AI-powered digital writing tools enhance students' written language abilities (Athanassopoulos et al., 2023; Imran & Almusharraf, 2023; Marzuki et al., 2023; Uehara, 2023), improving sentence construction, word choice, tone, and overall writing quality. Al Mahmud (2023) found that students who used digital writing tools were more proficient in their writing than those who did not. Various AI tools support academic writing: Grammarly checks grammar, style, and tone, while ProWritingAid focuses on sentence

structure and transitions. Hemingway Editor promotes clearer writing by addressing readability issues, and Zotero aids in organizing and citing sources. Turnitin offers feedback on writing quality and originality, while Ref-n-Write assists with paraphrasing and citation. Together, these tools refine students' academic writing by addressing key areas such as grammar, structure, clarity, and citation.

Finally, *permanent availability* is a key benefit of AI tools. Learners no longer need to rely on human tutors or partners for language-related questions or practice. AI devices are always accessible, providing immediate assistance and instant feedback. This constant availability is especially beneficial for students who face financial or geographical barriers to attending traditional classes, as language learning platforms offer flexible and accessible resources (Amonova et al., 2023). Thus, AI tools not only make language learning more convenient but also provide continuous support, enhancing the overall learning experience.

AI Pitfalls

Despite these positive findings, several studies have produced contradictory results regarding the effectiveness of AI in language learning. For instance, Steenbergen-Hu and Cooper (2014) suggest that AI has only a moderate impact on student learning. More recent studies go further, arguing that AI is not a legitimate learning tool (Gallacher et al., 2018). In several instances, the language produced by AI has been found to be unnatural, unsuitable (Pace-Sigge & Sumakul, 2021), and decontextualized (Wilson et al., 2021). When it comes to the challenges of applying AI in the classroom, the limitations may stem from the pedagogical design of AI applications (Rieland, 2017; Zawacki-Richter, 2019) or from teachers' limited pedagogical knowledge (Sumakul, 2019).

One major drawback of AI in language learning is the *inaccuracy or unnaturalness of responses*. While chatbots are trained to provide accurate replies based on large datasets, they can still generate incorrect or awkwardly phrased responses, which learners may unintentionally adopt. The content produced by AI can sometimes sound machine-generated, lacking the natural flow of human speech (Al Mahmud, 2023; Amonova et al., 2023; Athanassopoulos et al., 2023). For example, AI might generate a sentence like: "The researchers endeavor to impact the ecosystem hugely by inquiring on the various species' habitats," which sounds overly formal and unnatural. Furthermore, AI tools sometimes fabricate citations, a phenomenon known as "hallucinations," leading to inaccurate or fictional references. This is particularly problematic in academic writing, where precision is crucial.

Another issue is *limited context understanding*. AI tools, including ChatGPT, do not create new data; they generate responses based on the data they are trained on. This can lead to misunderstandings of the questions they are asked and, consequently, inaccurate replies (Athanassopoulos et al., 2023). For example, if a student asks an AI tool to discuss "the ethics of AI in healthcare," the latter might generate content on "general healthcare technology" without addressing the ethical considerations. Additionally, the software may struggle with commands or requests that involve cultural nuances or language subtleties, resulting in vague or incomplete responses (Fuchs & Aguilos, 2023), or inaccurate translations of proper nouns. Also, when asked to explore the "moral implications of artificial intelligence," the AI might provide a technically correct answer but fail to delve into the deeper philosophical aspects that require human interpretation.

Furthermore, *overreliance on AI* tools can hinder the development of other essential skills. Although AI can enhance language proficiency, an excessive dependence on it may impede learners' abilities to think critically, make decisions, be creative, or solve problems (Almasri, 2024; Jacob et al., 2023). Overreliance on AI tools can also lead to translation and communication errors, which

could negatively impact learners in both professional and personal contexts.

In addition to these concerns, a *lack of human interaction* poses another significant challenge. While AI tools can serve as useful language aids, they may limit learners' opportunities to develop interpersonal communication skills (Almasri, 2024). For instance, while ChatGPT offers the possibility of voice conversations at any time, relying solely on a virtual interlocutor may reduce learners' ability to interact effectively with real people (Amonova et al., 2023; Li, 2024). While the tool provides a wealth of information, depending too heavily on AI can diminish the essential experience of human-to-human communication.

Another issue involves *potential biases in the AI database*. AI tools pull information from the vast and unfiltered data available on the internet, which can include biased content related to gender, age, race, nationality, and culture (Amonova et al., 2023; Kasneci et al., 2023). For example, when asked for examples of successful scientists, an AI tool might disproportionately highlight individuals from a specific demographic group, inadvertently reinforcing stereotypes or disseminating incorrect information (Fuchs & Aguilos, 2023). This biased content can then be internalized by learners, perpetuating inaccuracies in their knowledge.

Dominant AI Forces: ChatGPT and NMT Among Argentinean Students

Research carried out in our university (Bottiglieri et al., 2023) revealed that students are increasingly turning to AI tools—mainly neural machine translation (NMT) and ChatGPT—for their academic needs. These tools have gained significant popularity owing to their accessibility as free resources.

ChatGPT 3

ChatGPT, developed by Open AI, is a versatile language generation model that responds to user inputs, making it an invaluable tool for generating coherent and contextually relevant text. Its application extends from natural language conversations to aiding in creative writing and research tasks (UNESCO, 2023). Since its release in November 2022, an increasing number of studies (Athanassopoulos et al., 2023; Imran & Almusharraf, 2023; Li, 2024) have been conducted to examine the role of ChatGPT in second language learning. This tool uses large language models (LLMs), which can generate human-like text (Bender et al., 2021), understand the text input, generate contextual responses, and complete various language-related tasks (Kasneci et al., 2023).

García Peñalvo (2023) references multiple authors to discuss the divided opinions on this technology. The author claims that as the number of ChatGPT users increases, reactions vary widely. Some view it as the best AI chatbot ever released to the general public (Roose, 2022), while others predict catastrophic consequences, such as adverse effects on employment in the knowledge sector (Krugman, 2022), as well as potential harm to education and scientific production. On the one hand, the use of ChatGPT in educational institutions is questioned (Herman, 2022; Marche, 2022; Stokel-Walker, 2022), and it has even been banned (Ropek, 2023) due to fear that students will use it to automatically generate essays or class work. On the other hand, many people emphasize the errors (Bowman, 2022) that appear in ChatGPT's responses or errors in reasoning when it is asked to provide logical solutions or when it leads to contradictions in a conversation (Llorens-Largo & ChatGPT, 2022).

However, the most controversial issue regarding ChatGPT is not the quality of its responses but rather whether it will become the tool used by students who need to write text as part of their academic work (essays, reports, articles) without effort and, therefore, without acquiring the skills for which the intellectual task was designed. Perhaps the problem is not with the tool itself but rather with the essence of certain educational tasks that may have become obsolete, which invites a debate about a possible change in the role that teachers should play in this new learning scenario characterized by

complex thinking contexts (García Peñalvo, 2023; Navarro, 2023).

In this direction, it is important to point out that the increasing availability and sophistication of ChatGPT and other AI-based writing tools offer an ethical alternative to essay mills for students seeking academic support. While essay mills undermine academic integrity by providing prewritten or custom essays that students pass off as their own work, AI tools empower students to enhance their own writing skills. They provide constructive feedback on grammar, style, and structure, helping students engage in the writing process rather than bypass it, as opposed to the detrimental reliance on essay mills, which erodes learning outcomes and violates institutional codes of conduct.

Neural Machine Translation (NMT)

NMT has emerged as a powerful tool for language translation, allowing users to convert text from one language to another while maintaining contextual distinctions (Klimova et al., 2023). Initially introduced in the late 1940s, machine translation (MT) aimed to automate translation processes. However, the inherent complexity of language and the failure to consider contextual and real-world information posed significant challenges. Various approaches emerged over the years, including Rule-Based Machine Translation (RBMT) in the 1980s, which used dictionaries, grammar, and transfer rules but proved problematic for idiomatic expressions (Jolley & Mamoine, 2022). Corpus-based systems gained popularity in the late 1980s, with Statistical MT (SMT) and example-based MT (EBMT) using parallel texts for translation. While SMT relied on statistical evidence, EBMT imitated pre-translated data examples. Hybrid approaches emerged to overcome the limitations of RBMT and SMT, combining their advantages for improved translation quality (Jolley & Mamoine, 2022). Today, the dominant technology in this area is Neural MT, which uses large neural networks for sentence translation and integrates technologies from companies like Google, Systran, and Microsoft (Bowker & Buitrago Ciro, 2019).

Freely available on the internet, NMT enables L2 students to translate words, sentences, paragraphs or whole texts with results of reasonably good quality and comprehensibility, often at a level close to what is needed for admission into English-taught university programs (Groves & Mundt, 2015). As it has been observed, university students increasingly use these tools (Alhaisoni & Alhaysony, 2017; Ducar & Schocket, 2018; Jolley & Maimone, 2015). This could potentially transform learning and teaching, triggering mixed opinions from language teachers (Clifford et al., 2013) and tutors of English for academic purposes (EAP).

Some regard translation software as a tool that can be of practical use to L2 students facing the challenge of writing in English (Currie, 1998). Others, however, perceive the use of machine translation as a threat to language learning (Jolley & Maimone, 2015). Apart from pedagogical implications, this software has consequences for university policy on academic conduct: should these tools be allowed, discouraged or forbidden? (de Vries & Groves, 2019).

The Significance of Teachers' Perceptions and Attitudes

Teachers' perception is related to how teachers view a certain concept or practice in their teaching and learning processes, and it is an important aspect in the success of their students' learning (Sumakul et al., 2022). Teachers' perception might not have a direct impact on students' learning, but it is a significant element of success (Cope & Ward, 2002). Davis (1989) explains the interplay of some elements affecting the use of technology, such as perceived ease of use and perceived usefulness of the technology, factors which would determine usage behavior. In other words, how teachers perceive technology integration

would affect their willingness to use technology and, later, how they use it in classrooms. In general, teachers decide whether to use the technology or not, how students should use it, how often, and for what purpose. This is the reason why teachers' perceptions of technology use are worth researching.

Positive Attitudes Towards AI in the Language Classroom

Multiple studies have looked at teachers' perceptions towards the use of technology in language classrooms, some of them very positive. For example, Sumakul et al. (2022) investigated how teachers perceive the use of AI in their EFL classrooms in an English Language Education department at a university in Indonesia. The data were collected through interviews with four instructors who have had the experience of integrating AI in their teaching practices. The results show that all teachers had positive perceptions towards the use of AI in their classrooms. The interview data also indicate that students' motivational levels and teachers' technological and pedagogical competence should be put into consideration when integrating AI into EFL classrooms.

Uehara (2023) also reveals favorable outcomes in the context of AI educational applications. The author investigated Japanese teachers' perspectives of MT in the EFL writing classroom, and how teachers react when they discover students have been using MT. The participants agreed that the technology should be embraced because it is here to stay. Therefore, the activities and tasks that measure skills in writing should be developed to reflect the tools that learners already use. Learners and instructors should be trained on how to use MT effectively, raising awareness of when and how to use it to improve and not hinder writing. It was also highlighted that, with the increasing accuracy of MT, both learners and instructors may benefit from clear guidelines and policies at the curriculum, department and institutional levels.

Issues and Concerns in the Implementation of AI

Along with these promising findings, however, some studies also highlighted several issues that need to be considered. For example, Ding et al. (2019) suggested that teachers need to be assisted so they could see the potential of technology to enhance their classrooms. Furthermore, when exploring teachers' perceptions of the use of automated writing evaluation technology in students' writing, Wilson et al. (2021) found that, although it would assist teachers, it may also create new instructional challenges. Consistently, Choi et al. (2023) attempted to identify the human factors that encourage or restrict South Korean teachers' acceptance of AI tools. The results indicate that perceived usefulness, perceived ease of use, and perceived trust in AI tools are determinants to be considered when explaining teachers' acceptance of this technology.

In a similar vein, McGrath et al. (2023) attempted to (i) understand the conditions under which Swedish university teachers would be willing to introduce such tools and services into their daily practice and (ii) specify teachers' self-reported knowledge of artificial intelligence. The authors characterized teachers' fears and skepticism about artificial intelligence in higher education, concerns about fairness and responsibility, and lack of knowledge about artificial intelligence and resources to engage with AI in teaching practices. A large number of these university teachers self-reported low levels of understanding of AI, but a substantial percentage also thought AI could contribute to a more equitable system of support for students. Coinciding with Uehara (2023), they concluded that, from a competency development perspective, university teachers may need training to understand the implications of AI technologies for their teaching.

In a very different geographical context, Aghaziarati et al. (2023) investigated teachers' attitudes towards AI in education in Iran, focusing on

identifying the perceived benefits, challenges, and ethical considerations associated with AI integration into teaching and learning environments. Using a qualitative research design, they conducted semi-structured interviews with 28 educators from various educational levels and disciplines. Teachers recognized AI's capacity to enhance personalized learning, streamline administrative tasks, and foster innovative teaching methodologies. Yet, concerns were also raised regarding ethical considerations, the need for robust infrastructure, and the imperative for comprehensive professional development to effectively utilize AI in educational contexts. Furthermore, the study highlighted the critical role of teacher awareness and understanding of AI technologies in shaping positive attitudes and facilitating the seamless adoption of AI in education.

Huertas-Abril and Palacios-Hidalgo' (2023) study is particularly interesting and original as it compares teachers' attitudes based on the country where they work, distinguishing between those in Eastern and Western countries. A six-question semi-structured interview was designed and administered to analyze the perceptions of six language teachers located both in Eastern (Vietnam, Iran, and Indonesia) and Western countries (Spain, Germany, and the United Kingdom). The participants were generally positive about this technology, although they all showed a certain anxiety regardless of their context. The teachers agreed that instant feedback; personalized and individual learning; increased learner engagement and motivation; and greater adaptability and flexibility in lesson planning are the main advantages offered by AI. However, they also revealed fear, anxiety, and certain concerns, such as overreliance and dependence on AI, along with issues related to cheating and plagiarism. All of the participants also agreed with teacher training being essential to provide them with the knowledge and skills needed for effective integration of these AI tools into their classes.

The synthesis of these studies reveals a diverse landscape of opinions, with some educators embracing AI as a valuable instructional tool and others expressing concerns and reservations. The nuanced perspectives highlight the need for further investigation into the specific factors that shape Argentinean teachers' attitudes towards AI implementation. As we embark on our own study, this review serves as a foundation, emphasizing the importance of understanding the complexities and nuances that underlie educators' viewpoints.

Method

Following the example of Aghaziarati et al. (2023), an exploratory qualitative research design was applied to collect empirical data about teachers' perspectives on the implementation of AI in L2 classes at university. An exploratory research design is typically applied as a methodological framework when the investigated problem is not clearly defined or well understood (Hernández Sampieri, 2014). The design, protocols, and procedures were developed in accordance with established ethical guidelines. Informed consent was obtained from all participants involved in this study. Before participating, each interviewee was provided with a detailed explanation of the research objectives, procedures, potential risks, and benefits in written form, while the survey included this information as an introduction. Participants were assured of the confidentiality and anonymity of their responses. Furthermore, they were informed of their right to withdraw from the study at any point.

In-Depth Interviews

We adopted a qualitative approach based on semi-structured interviews conducted in Spanish, which allows for a more open-ended and exploratory approach to data collection. This can be particularly valuable in a complex and multi-faceted topic such as language learning.

We have found that semi-structured interviews allow for flexibility in the questions asked and the direction of the conversation, which has helped us to follow up on interesting or unexpected findings

Table 1 Participant Details

Participant	Department	Language	Course type
Participant 1	Modern Languages, Humanities	Italian	Academic reading
Participant 2	Modern Languages, Humanities	French	Academic reading
Participant 3	Modern Languages, Humanities	German	Academic reading
Participant 4	Modern Languages, Humanities	Portuguese	Academic reading
Participant 5	Teacher Training Program	English	General English
Participant 6	Translator Training Program	English	Legal English
Participant 7	Faculty of Philosophy	English	English for specific purposes (esp), Academic reading
Participant 8	Faculty of Health	English	esp, Academic reading

as they emerged. Moreover, by allowing teachers to express their views in their own words, we were able to get rich and detailed data that capture the complexities of teachers' experiences with ai tools. This approach was also useful for establishing rapport with the participants and gain their trust, which facilitated more honest responses.

Sampling

The interviewees were selected using convenience sampling, a non-probability sampling method in which participants are chosen based on their accessibility, proximity, and willingness to participate. This approach is commonly employed in exploratory studies when ease of access and speed in gathering responses are prioritized over obtaining a statistically representative sample.

Eight teachers participated in the study (see Table 1). We selected second language teachers from higher education institutions in Argentina. Six of the participants instruct Second Language for Academic Purposes courses, covering various languages (French, Italian, German, and Portuguese) at the National University of Salta and the National University of Tucumán, Argentina. Two additional teachers, affiliated with the Catholic University of Salta, Argentina, were recruited. One of them teaches in the English Language Teacher Training Program, while the other teaches in a Translator Training Program.

Data Collection

The research was conducted in July and August 2023. The interviews were transcribed verbatim, and thematic analysis was employed to identify, analyze, and report patterns (themes) within the data. This involved a careful reading of the transcripts to familiarize ourselves with the data, generating initial codes, searching for themes among codes, reviewing themes, defining and naming themes, and finally producing the report. This process was iterative, allowing for the themes to be refined and adjusted as deeper understanding was gained through analysis.

The four main interview questions were the following:

1. What is your understanding of Artificial Intelligence (ai) technology and its use in language learning and teaching?
2. How can it be incorporated in your class to support/benefit foreign language instruction and critical thinking in higher education?
3. In your opinion, which are the most prevalent advantages and disadvantages of using ai tools in second language teaching?
4. Is there a specific policy in your institution about students' ai use? Do you think there should be? Why?

These formed the basis for individual follow-up questions.

Main Findings

Four main themes emerged from the data, as well as a number of other smaller points around language learning, academic integrity, and language development. In Table 2, we analyze the most prominent topics.

Teachers' Knowledge and Use of AI Tools

In the interviews with L2 instructors, five out of eight respondents mentioned being aware of the chat-based AI model, GPT, but admitted having limited knowledge of it and no experiential engagement. Participant 7, though expressing disinterest in experimentation, acknowledged an urgent necessity to explore the tool since its use among students is imminent. Conversely, Participant 6 revealed

Table 2 Analysis of Key Themes and Subthemes on AI in Language Learning

Themes	Subthemes	Concepts
Teachers' Knowledge and Use of AI Tools	• Familiarity and Engagement with AI Tools • Perceptions of Machine Translation • Use of Alternative AI Tools	• General awareness of GPT among L2 instructors but limited experiential engagement. Need for teacher training. • Misconceptions about MT. • Occasional use of MT for text comprehension but reluctance to integrate it pedagogically. • Recognition of MT's utility for decoding expressions. • Use of voice assistants to aid oral proficiency.
Students' Use of AI Tools in L2 Classes at University	• Varied Student Usage and Awareness • Impediments to Language Acquisition • Perceived Benefits and Specific Applications • Academic Conduct and Integration with Teaching Methods	• Discrepancy in student usage. • Skepticism about students' awareness of AI tools. • Overreliance on AI tools may hinder students' ability to develop language proficiency. • AI tools are beneficial for translating specialized vocabulary. • Beneficial for critical evaluation of AI-generated translations and original texts. • Useful for comparing translations and enhancing critical thinking. • Differentiation between in-class practice and assessments. • Plagiarism risks. Ethical use.
Teachers' Perceptions of AI Disadvantages	• Inaccuracy of Machine Translation • Limited Learning and Lack of Feedback • Internet Accessibility Issues • Impact on Critical Thinking and Human Interaction	• MT's tendency to generate errors can lead to confusion and miscommunication, hindering effective language learning. • Absence of corrective feedback. • Persistent errors. • Unstable internet access in classrooms. • Economic constraints and digital divide. • Potential impediment to critical thinking. Overuse of AI tools could impede the development of critical thinking skills and diminish essential human interaction in the learning process.
Need for an Institutional Policy	• Absence of Institutional Policy • Benefits of a Formal Policy • Fostering Responsible Usage • Challenges in Implementation	• Lack of specific AI guidelines: • Need for debate. • Uniform and appropriate use. • Informed decision-making. • Supplementary tool, not replacement. • Difficulty in enforcement. • Contradiction with widespread use.

recent participation in GPT training as part of professional development, employing the technology for academic objectives and translation.

Teacher training emerged as a significant barrier. "The lack of adequate training on AI tools is a major hurdle," a teacher commented. Notably, seven out of the eight respondents did not categorize MT as an AI tool. Some teachers, while having occasionally used MT to comprehend texts in foreign languages, exhibited reluctance to integrate it into their pedagogical practices. Participant 5 was the exception, advocating for technology integration, emphasizing its omnipresence and several advantages in modern life.

Participant 8 introduced a perspective on the use of voice assistants, such as Apple's Siri and Amazon's Alexa, highlighting their potential in aiding students' oral proficiency. While recognizing MT's utility for decoding intricate expressions, she emphasized the need for restricted usage to prevent overreliance and advocated for the development of student autonomy.

Regarding personal use, Participant 2 expressed self-sufficiency in comprehending foreign languages, explaining she considered MT unnecessary for her own linguistic objectives.

Therefore, the level of knowledge among the interviewees varies according to factors such as their teaching experience and personal interest in technology. Overall, while it is difficult to generalize regarding the level of knowledge of AI tools among the interviewees, it is likely that some teachers are more familiar with these tools than others, and that there may be variation in the extent to which these tools are used in language classrooms.

Students' Use of AI Tools in L2 Classes at University

In general, it was found that teachers are reluctant to use AI in their classes. One of the reasons given was that electronic translations are not always accurate and may produce errors or awkward phrasing, which could potentially hinder language learning. They also admitted they had not used it recently and were not aware about the tools' output improvement.

An additional factor to consider is that reliance on technological tools for translation can impede students' language acquisition. Many educators have mentioned the subject of fostering language proficiency, emphasizing the belief that students should attain the ability to communicate proficiently without relying extensively on automated language assistance. Participant 7 admitted,

> We realized that our students were using machine translation during the pandemic years because their performance in evaluations improved dramatically. We tried different security measures to prevent its use, but they soon found a way to bypass it.

In Argentina, at most national universities, students are required to spend numerous hours attending classes and completing the necessary academic work to pass the specific courses within their disciplines. Consequently, they have little time and energy left for less specialized and "less important" subjects, such as English. If they find a way to pass these courses quickly, they readily adopt it without much remorse.

Participant 4 acknowledged finding it beneficial to employ GMT for providing translations of texts to students, particularly when dealing with intricate or specialized vocabulary. Participant 7, while recognizing students' use of the tool in class, underscored the importance of cautioning them against dependency and encouraging critical evaluation of both MT results and the original concepts presented in the text.

Surprisingly, three out of the eight interviewees asserted that their students do not use either GPT or MT in their classes. Participant 2 even expressed skepticism about her students' awareness of these tools. When noting that students had previously admitted, in an earlier phase of this study, to using

MT for comprehending academic texts in another language, she raised questions about the relevance of ESP courses focused on reading skills: "Then, we should start thinking about a new curriculum. What is the purpose of these courses if they have already found a solution for communication in another language?"

Participant 5 clarified that she does not perceive the use of AI tools as academic misconduct, as long as it occurs during practice, whether in-class or out-of-class. Her students are allowed to use MT to grasp the meaning of unfamiliar words and phrases while reading or watching a video. In class, they employ it to review their writing for errors and generate new ideas. She emphasized the need for exercising caution and integrating these tools with other teaching methods.

Participant 6 asserted using MT to compare translations of a text from various sources, including online translation tools or diverse human translations of a literary work. This approach aids learners in improving their critical thinking skills by scrutinizing and contrasting translations to identify differences in vocabulary, grammar, and style.

All teachers who admitted to incorporating MT into their classes clarified that students are prohibited from using these tools during assessments, with smartphones also restricted in such instances. Ultimately, the decision to integrate AI, whether MT, GPT, or any other tool, into the classroom is contingent upon each teacher's specific teaching objectives.

Teachers' Perceptions of AI Disadvantages

Six out of eight educators highlighted the inherent inaccuracy of MT, emphasizing its tendency to generate errors in grammar, vocabulary, and sentence structure. These errors, they expressed, have the potential to induce confusion and miscommunication, posing obstacles to effective language learning. Furthermore, many educators expressed concern that an overreliance on MT could foster a dependence on technology, preventing the development of crucial language skills such as critical thinking, problem-solving, and communication. As one instructor noted, allowing extensive use of such software in class might deprive students of sufficient training in the second language.

Participant 2 expressed apprehension about students' limited learning from mistakes when using MT, noting that the tool lacks feedback on learners' errors, potentially hindering the development of their language skills. Without corrective feedback, learners might persist in making the same errors without awareness.

Another issue to consider is internet accessibility. Participants 1, 4, and 8 highlighted challenges related to the availability and accessibility of AI tools and technological resources in their institutions. Participant 1 complained, "Few university classrooms have stable internet access. With so many students in our classes (always more than 40), the connection often drops or becomes very slow, making the process inefficient."

They pointed out that not all students have free access to digital technology, raising concerns about equity. Participant 4 noted the economic constraints some families face, where internet connection might not be affordable, and students may solely rely on printed bilingual dictionaries for understanding foreign language texts. The importance of ensuring equity was emphasized.

Participant 8, situated in Orán, northern Argentina, highlighted the digital divide, emphasizing that not all students have smartphones to access AI technology. This participant also argued that AI-based learning tools could potentially hinder the development of critical thinking skills and reduce human interaction, which is essential to the learning process. Furthermore, they stressed that AI should complement, not replace, the human connection between teachers and students, underscoring the importance of maintaining a human touch in an AI-driven educational landscape.

Acknowledging some of the drawbacks highlighted by fellow educators, Participant 7 emphasized the rapid and significant improvements in MT output. Despite the challenges, she recognized the need to address them by designing creative activities that influence the evolving landscape of AI tools in order to enhance students' comprehension and critical thinking.

Need for an Institutional Policy About AI Use for Learning

All interviewees acknowledged the absence of a specific policy regarding AI in their respective educational institutions. While not all were enthusiastic about the idea of prescriptive regulation, they agreed on the necessity of initiating a debate on the matter.

Participant 2 expressed a favorable stance, asserting that having a formal policy in place would ensure uniform and appropriate use of technology across all classes. Such a policy, she argued, could guide teachers in making informed decisions regarding the incorporation of MT into their teaching practices. It could delineate the advantages and limitations of the technology, offering guidance on its effective integration into language learning activities.

In the same vein, Participant 5 emphasized that an institutional policy could also foster responsible usage of these tools. By establishing clear guidelines, institutions could ensure that MT functions as a supplementary tool supporting language learning rather than replacing essential activities like reading, writing, and practice. However, she noted a lack of explicit regulations at the university level concerning MT use.

Several teachers recognized the potential of technology in certain in-class activities but recommended against its use during evaluations. Participant 6 argued that enforcing such a policy would be challenging, as students naturally incorporate technology from their smartphones into their academic work and daily activities. Prohibiting this tool in the classroom could create a contradiction given its widespread use.

Overcoming these obstacles is essential for maximizing the benefits of AI in language education. There should be a discussion about the accuracy and accessibility of technology, as well as institutional guidelines that facilitate a more effective and equitable integration of AI tools.

Discussion and Conclusion

Our study sheds light on the multi-faceted opinions of L2 teachers regarding the integration of AI tools, like NMT and GPT, in a university context. The findings reveal a landscape marked by hesitation and concerns that highlight a pressing need for systemic changes that adapt to the evolving field of technology in language education.

While there is general awareness of AI tools, many teachers have limited direct experience with these technologies and exhibit varying levels of familiarity and enthusiasm for their integration into the classroom. This situation reveals a clear need for training programs that not only introduce these technologies but also integrate pedagogical strategies for their effective use. This aligns with the studies of Uehara (2023) and McGrath et al. (2023), and Ding et al. (2019). Ding et al. asserted that "it is of paramount importance to help teachers see the potential affordances of technology for enhancing and transforming their curricula."

Some instructors acknowledge the benefits of AI tools, such as their potential for aiding comprehension and supporting academic objectives, yet they remain cautious due to concerns over accuracy, potential overreliance, the risk of impeding language acquisition, and technological accessibility issues. For example, some instructors discussed limitations in terms of access to AI tools, citing challenges related to internet connectivity both in university classrooms and at home. These restrictions point to broader issues of digital equity. Ensuring all students and instructors have the

necessary resources is fundamental to the equitable integration of technology in education.

In Argentina, ensuring internet connectivity both at universities and homes involves multiple participants. University authorities are primarily responsible for ensuring robust internet connectivity on campus. This includes negotiating contracts with internet service providers, maintaining campus network infrastructure, and ensuring Wi-Fi coverage in classrooms, libraries, and other common areas. National and regional education policies that aim to enhance access to technology are also crucial. These can include funding for internet access, subsidies for students and educational institutions, and investments in digital infrastructure. Ultimately, individuals also bear some responsibility for arranging and paying for their home internet service. However, this is heavily influenced by economic factors. In this sense, our findings align with Huertas-Abril and Palacios-Hidalgo's (2023) analysis, which highlights that Eastern instructors specifically noted that students with low socioeconomic status may have limited access to AI, potentially hindering equitable access to these tools.

The lack of a formal institutional policy on AI use is another notable issue. While there is some support for developing a policy to guide and standardize AI integration, the practical challenges of implementation and the potential for creating contradictions with current technological practices remain significant obstacles.

Interview data suggest that some instructors question the pedagogical value of AI tools, contending that these technologies may not significantly contribute to language learning outcomes or may even detract from the educational process. This skepticism often aligns with a preference for traditional language teaching methods, guided by personal teaching philosophies or institutional expectations.

The unwillingness to adopt AI tools highlights a fundamental debate in educational technology, that is, finding the right balance between leveraging new technologies and maintaining effective traditional teaching methodologies. This debate is not new; but it is intensified by the capabilities and limitations of AI in language learning, and it demands attention from university authorities. By organizing open forums and debates, university leaders can foster collaborative problem-solving, ensuring that the voices of educators are heard and valued.

This study supports the notion that the most controversial aspect of AI in academic contexts is whether it will evolve into a resource for students seeking to complete tasks effortlessly, thus bypassing the development of crucial intellectual abilities (García Peñalvo, 2023; Navarro, 2023). It also suggests that the issue may not lie with the tool itself but with the nature of some educational practices that might have grown outdated. This perspective prompts a conversation about a potential shift in the educational paradigm, particularly in the roles teachers might need to adopt within this emerging landscape of complex cognitive challenges.

Plagiarism concerns emerged prominently, with instructors expressing worries about potential misuse of AI tools, leading to plagiarism or lack of originality in students' work. Additionally, a preference for in-person interaction and traditional classroom dynamics, influenced by cultural or institutional norms, emerged as a factor influencing instructors' decisions. To address these issues, educational institutions should develop clear guidelines and ethical standards for AI usage in language learning contexts. This could include practices for integrating AI in a way that enhances learning without compromising academic integrity. Ignoring the existence of AI is deemed imprudent considering that students are digital citizens who leverage technology to solve problems.

While few of the participants expressed the possibility of redesigning L2 courses, we believe integration of AI tools into the syllabus is

necessary. Such a redesign should align with course objectives, considering the potential benefits of ai tools in achieving language proficiency goals. Ethical considerations, training needs, and a balanced integration of technology with traditional teaching methods should be integral to the syllabus. A redesigned syllabus should also allow for continuous feedback and improvement based on the effectiveness of ai tools.

ai is here to stay, making it imperative to urgently discuss how to incorporate it effectively within the university context. This discussion should not only explore the potential benefits and challenges but also lead to the actual integration of ai into educational practices. Our study aims to contribute to this crucial dialogue, providing insights and recommendations to facilitate the thoughtful adoption of ai in higher education.

Limitations

This study, while providing valuable insights, is not without its limitations. The sample size was relatively small and confined to a specific geographical region (Northern Argentina), which may limit the generalizability of the findings to broader educational contexts. Additionally, the reliance on self-reported data through semi-structured interviews could introduce bias, as participants may have varying interpretations of ai and its implications. These limitations underscore the need for cautious interpretation of the results and suggest the potential benefits of expanding the research to include larger, more varied populations and complementary data collection methods.

Future research should aim to address the limitations of this study by incorporating larger sample sizes and diverse educational settings to enhance the generalizability of the findings. It should also include an analysis of improvements in language acquisition, Additionally, quantitative research methods could complement qualitative insights, providing a more comprehensive understanding of teachers' attitudes towards ai.

References

Aghaziarati, A., Nejatifar, S. & Abedi, A. (2023). Artificial intelligence in education: Investigating teacher attitudes. *ai and Tech in Behavioral and Social Sciences, 1*(1), 35–42. https://doi.org/10.61838/kman.aitech.1.1.6

Alhaisoni, E., & Alhaysony, M. (2017). An investigation of Saudi efl university students' attitudes towards the use of Google Translate. *International Journal of English Language Education, 5*(1), 72–82. http://doi.org/10.5296/ijele.v5i1.10696

Al Mahmud, F. (2023). Investigating efl students' writing skills through artificial intelligence: Wordtune application as a tool. *Journal of Language Teaching and Research —jltr, 14*(5), 1395–1404. https://doi.org/10.17507/jltr.1405.28

Almasri, F. (2024). Exploring the impact of artificial intelligence in teaching and learning of science: A systematic review of empirical research. *Research in Science Education, 54*, 977–997. https://doi.org/10.1007/s11165-024-10176-3

Amonova, S., Juraeva, G., & Khidoyatov, M. (2023). Harnessing the potential of artificial intelligence: Is ai threat or opportunity? *International Conference on Future Networks and Distributed Systems* (pp. 292–297) https://doi.org/10.1145/3644713.3644751

Athanassopoulos, S., Manoli, P., Gouvi, M., Lavidas, K., & Komis, V. (2023). The use of ChatGPT as a learning tool to improve foreign language writing in a multilingual and multicultural classroom. *Advances in Mobile Learning Educational Research, 3*(2), 818–824. https://doi.org/10.25082/AMLER.2023.02.009

Bowman, E. (2022, December 9). A new ai chatbot might do your homework for you. But it's still not an A+ student. [Blog post]. *npr*. https://www.npr.org/2022/12/19/1143912956/chatgpt-ai-chatbot-homework-academia

Bailey, D., Southam, A., & Costley, J. (2021). Digital storytelling with chatbots: mapping L2 participation and perception patterns. *Interactive Technology and Smart Education*, *18*(1), 85–103. https://doi.org/10.1108/ITSE-08-2020-0170

Bottiglieri, L., Irrazabal, M. & Ramallo, C. (2023). The use of machine translation for reading comprehension in a university context. *ArTESOL esp e-Journal, 13*(1), 3–22. https://drive.google.com/file/d/1QvK5lcg5tBzeKc5NV_gfsgaumI4hNrZ9/view

Bowker, L. & Buitrago Ciro, J. (2019). *Machine translation and global research: Towards improved machine translation literacy in the scholarly community*. Emerald Publishing. https://doi.org/10.1108/9781787567214

Cardona, M., Rodriguez, R. & Ishmael, K. (2023). *Artificial intelligence and the future of teaching and learning.* [report]. U. S. Department of Education. https://www2.ed.gov/documents/ai-report/ai-report.pdf

Choi, S., Jang, Y. & Kim, H. (2023). Influence of pedagogical beliefs and perceived trust on teachers' acceptance of educational artificial intelligence tools. *International Journal of Human-Computer Interaction*, *39*(4), 910–922. https://doi.org/10.1080/10447318.2022.2049145

Clifford, J., Merschel, L., & Munné, J. (2013). Surveying the landscape: What is the role of machine translation in language learning? *REALIA, 10,* 108–121. https://doi.org/10.7203/attic.10.2228

Cope, C., & Ward, P. (2002). Integrating learning technology into classrooms: The importance of teachers' perceptions. *Journal of Educational Technology and Society, 5*(1), 67–74. http://www.jstor.org/stable/jeductechsoci.5.1.67

Currie, P. (1998). Staying out of trouble: Apparent plagiarism and academic survival. *Journal of Second Language Writing, 7*(1), 1–18. https://doi.org/10.1016/S1060-3743(98)90003-0

Ducar, C., & Schocket, D. H. (2018). Machine translation and the L2 classroom: Pedagogical solutions for making peace with Google translate. *Foreign Language Annals,* (51), 1–17. https://doi.org/10.1111/FLAN.12366

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly, 13*(3), 319–340. https://doi.org/10.2307/249008

de Vries, R. & Groves, J. (2019) International students' use of online translation tools. *Garnet Education*. https://www.garneteducation.com/app/uploads/14_Paper-BALEAP_GS_2019-14.pdf

Ding, A-C. E., Ottenbreit-Leftwich, A., Lu, Y. H., & Glazewski, K. (2019). EFL teachers' pedagogical beliefs and practices with regard to using technology. *Journal of Digital Learning in Teacher Education, 35*(1), 20–39. https://doi.org/10.1080/21532974.2018.1537816

El Shazly, R. (2021). Effects of artificial intelligence on English speaking anxiety and speaking performance: A case study. *Expert Systems, 38*(3), e12667. https://doi.org/10.1111/exsy.12667

Fuchs, K. & Aguilos, V. (2023). Integrating artificial intelligence in higher education: Empirical insights from students about using ChatGPT. *International Journal of Information and Education Technology*, *13*(9). https://doi.org/10.18178/ijiet.2023.13.9.1939

Gallacher, A., Thompson, A., & Howarth, M. (2018). "My robot is an idiot!" – Students' perceptions of AI in the L2 classroom. In P. Taalas, J. Jalkanen, L. Bradley & S. Thouësny (Eds.), *Future-proof CALL: Language learning as exploration and encounters – short papers from EUROCALL 2018* (pp. 70–76). Research publishing.net. https://doi.org/10.14705/rpnet.2018.26.815

García Peñalvo, F. (2023) The perception of artificial intelligence in educational contexts after the launch of ChatGPT: Disruption or panic? *Education in the Knowledge Society (EKS), 24*, e31279. https://doi.org/10.14201/eks.31279

Groves, M., & Mundt, K. (2015). Friend or foe? Google Translate in language for academic purposes. *English for Specific Purposes*, *37*, 112–121. https://doi.org/10.1016/j.esp.2014.09.001

Herman, D. (2022, December 9). The end of high-school English. *The Atlantic*. https://www.theatlantic.com/technology/archive/2022/12/openai-chatgpt-writing-high-school-english-essay/672412/

Hernández Sampieri, R. (2014). *Metodología de la investigación* (6th Ed.). Mc Graw Hill Education

Huertas-Abril, C. A., & Palacios-Hidalgo, F. J. (2023). New Possibilities of Artificial Intelligence-Assisted Language Learning (AIALL): Comparing Visions from the East and the West. *Education Sciences*, 13(12), 1234. https://doi.org/10.3390/educsci13121234

Imran, M. E., & Almusharraf, N. M. (2023). Analyzing the role of ChatGPT as a writing assistant at higher education level: A systematic review of the literature. *Contemporary Educational Technology, 15*(4), ep464. https://doi.org/10.30935/cedtech/13605

Jacob, S. R., Tate, T. P., & Warschauer, M. (2023). *Emergent AI-assisted discourse: Case study of a second language writer authoring with ChatGPT.* ArXiv, abs/2310.10903. https://doi.org/10.48550/arXiv.2310.10903

Jolley, J. R., & Maimone, L. (2015). Free online machine translation: Use and perceptions by Spanish students and instructors. In A. J. Moeller (Ed.), *Learn languages, explore cultures, transform lives: Selected*

papers from the 2015 central states conference on the teaching of foreign languages (pp. 181–200). Central States Conference on the Teaching of Foreign Languages

Jolley, J. R., & Maimone, L. (2022). Thirty years of machine translation in language teaching and learning: A review of the literature. *L2 Journal, 14*(1). https://doi.org/10.5070/L214151760

Kasneci, E., Sessler, K., Küchemann, S., Bannert, M., Dementieva, D., Fischer, F., Gasser, U., Groh, G., Günnemann, S., Hüllermeier, E., Krusche, S., Kutyniok, G., Michaeli, T., Nerdel, C., Pfeffer, J., Poquet, O., Sailer, M., Schmidt, A., Seidel, T., Stadler, M., Weller, J., Kuhn, J. & Kasneci, G. (2023). ChatGPT for good? On opportunities and challenges of large language models for education. *Learning and Individual Differences, 103*, p. 102274. https://doi.org/10.1016/j.lindif.2023.102274

Kim, S., Shim, J., & Shim, J. (2023). A study on the utilization of Open ai ChatGPT as a second language learning tool. *J. Multim. Inf. Syst., 10*(1), 79–88. https://doi.org/10.33851/jmis.2023.10.1.79

Klimova, B., Pikhart, M., Benites, A. D., Lehr, C., & Sanchez-Stockhammer, C. (2023). Neural machine translation in foreign language teaching and learning: a systematic review. *Education and Information Technologies, 28*, 663–682. https://doi.org/10.1007/s10639-022-11194-2

Krugman, P. (2022, December 6). Does ChatGPT mean robots are coming for the skilled jobs? *The New York Times*. https://www.nytimes.com/2022/12/06/opinion/chatgpt-ai-skilled-jobs-automation.html

Llorens-Largo, F., & ChatGPT. (2022, 22 de diciembre). Cavilaciones invernales. [blog post]. *Universidad*. https://www.universidadsi.es/cavilaciones-invernales/

Lu, X. (2018). Natural language processing and intelligent computer assisted language learning (icall). *The tesol Encyclopedia of English Language Teaching*, 1–6. https://doi.org/10.1002/9781118784235.eelt0422

Li, Y. (2024). Usability of ChatGPT in second language acquisition: Capabilities, effectiveness, applications, challenges, and solutions. *Studies in Applied Linguistics and tesol, 24*(1), 24–37. https://doi.org/10.52214/salt.v24i1.12864

Marche, S. (2022, December 6). The college essay is dead. Nobody is prepared for how ai will transform academia. *The Atlantic*. https://www.theatlantic.com/technology/archive/2022/12/chatgpt-ai-writing-college-student-essays/672371/

Marzuki, Widiati, U., Rusdin, D., Darwin, & Indrawati, I. (2023). The impact of ai writing tools on the content and organization of students' writing: efl teachers' perspective. *Cogent Education, 10*(2), 2236469. https://doi.org/10.1080/2331186X.2023.2236469

McGrath, C., Cerratto Pargman T., Juth, N., & Palmgren, P. (2023). University teachers' perceptions of responsibility and artificial intelligence in higher education — An experimental philosophical study. *Computers and Education: Artificial Intelligence, 4*, 100139. https://doi.org/10.1016/j.caeai.2023.100139

Navarro, F. (2023). *¿Qué nos enseña ChatGPT sobre escritura? Amenazas y oportunidades de la inteligencia artificial generativa* [Video]. YouTube. https://www.youtube.com/watch?app=desktop&v=h5UCAqs08BY

Niño, A. (2020). Exploring the use of online machine translation for independent language learning. *Research in Learning Technology, 28*. https://doi.org/10.25304/rlt.v28.2402

Pace-Sigge, X., & Sumakul, X. (2021). What teaching an algorithm teaches when teaching students how to write academic texts. *8th International Scientific Conference. Linguistic, Educational and Intercultural Research*. https://www.conference.uki.vu.lt/images/2021/The_book_of_abstracts_LEIC_conference_2021.pdf#page=78

Rieland, R. (2017). Is artificial intelligence the key to personalized education? *Smithsonian Magazine*. https://www.smithsonianmag.com/innovation/artificialintelligence-key-personalized-education-180963172/

Roose, K. (2022, December 5). The brilliance and weirdness of ChatGPT. *The New York Times.* https://www.nytimes.com/2022/12/05/technology/chatgpt-ai-twitter.html

Ropek, L. (2023, January 4). New York City schools ban ChatGPT to head off a cheating epidemic. *Gizmodo*. https://gizmodo.com/new-york-city-schools-chatgpt-ban-cheating-essay-openai-1849949384

Rouhiainen, A. (2018). *Inteligencia artificial. 101 cosas que debes saber hoy sobre nuestro futuro.* Planeta.

Stokel-Walker, C. (2022, December 9). ai bot ChatGPT writes smart essays — should professors worry? *Nature*. https://doi.org/10.1038/d41586-022-04397-7

Sumakul, D. T. (2019). When robots enter the classrooms: Implications for teachers. *E-proceeding of the*

international conference on embedding artificial intelligence (AI) in education policy and practice for Southeast Asia (pp. 42-48). https://www.researchgate.net/publication/338660531_When_robots_enter_the_classrooms_Implications_for_teachers

Sumakul, D. T., Hamied, F. A., & Sukyadi, D. (2022). Artificial intelligence in EFL classrooms: Friend or foe? *LEARN Journal: Language Education and Acquisition Research Network, 15*(1), 232–256

Steenbergen-Hu, S., & Cooper, H. (2014). A meta-analysis of the effectiveness of intelligent tutoring systems on college students' academic learning. *Journal of Educational Psychology, 106*(2), 331–347. https://doi.org/10.1037/a0034752

Tafazoli, D., Gómez María, E., & Huertas-Abril, C. A. (2019). Intelligent language tutoring system: Integrating intelligent computer-assisted language learning into language education. *International Journal of Information and Communication Technology Education*, *15*(3), 60–74. https://doi.org/10.4018/IJICTE.2019070105

Uehara, S. (2023). Teacher perspectives of machine translation in the EFL writing classroom. In P. Ferguson, B. Lacy, & R. Derrah (Eds.), *Learning from students, educating teachers—Research and practice.* JALT. https://doi.org/10.37546/JALTPCP2022-31

UNESCO (2023) *ChatGPT e inteligencia artificial en la educación superior*. UNESCO. https://unesdoc.unesco.org/ark:/48223/pf0000385146_spa

Wilson, J., Ahrendt, C., Fudge, E. A., Raiche, A., Beard, G., & MacArthur, C. (2021). Elementary teachers' perceptions of automated feedback and automated scoring: Transforming the teaching and learning of writing using automated writing evaluation. *Computers & Education, 168*, 104208. https://doi.org/10.1016/j.compedu.2021.104208

Yin, J., Goh, T-T., Yang, B., & Xiaobin, Y. (2021). Conversation technology with micro-learning: The impact of chatbot-based learning on students' learning motivation and performance. *Journal of Educational Computing Research, 59*(1), 154–177. https://doi.org/10.1177%2F0735633120952067

Zhai, X. (2022). ChatGPT user experience: Implications for education *AI4STEM Education Center.* SSRN Research Paper Series. https://doi.org/10.2139/ssrn.4312418

How to cite this article: Bottiglieri, L., Irrazábal Paz, M. F., & Ramallo, C. (2025). Educators in transition: Unpacking Argentinean teachers' attitudes towards AI in higher education. *Íkala, Revista de Lenguaje y Cultura, 30*(1), e355874. https://doi.org/10.17533/udea.ikala.355874