Exploring the Affordances of ChatGPT in Developing Language Teachers' Awareness and Pedagogical Practices

Dara Tafazoli [1] , **Lee McCallum** [2]

[1] The University of Newcastle, Callaghan, Australia

[2] The University of Edinburgh, Scotland, United Kingdom

ABSTRACT

Background: The field of language education is experiencing substantial advancements with the introduction of Generative Artificial Intelligence (GenAI). While there is a significant amount of research on teachers' perceptions in language education, there is a noticeable gap in understanding the integration of ChatGPT into this field.

Purpose: This study investigated the perceptions of EFL teachers in Iran regarding how ChatGPT can contribute to the enhancement of language teaching practices and pedagogical awareness.

Method: A qualitative case study examined teachers' perspectives on using ChatGPT in language education. A Zoom webinar on AI in teaching was conducted for Iranian EFL teachers, using tools like Focusky. From 73 registered teachers, 23 were selected based on ≥2 years' teaching experience and voluntary participation. Data were gathered through focus groups, semi-structured interviews (n=10, in Persian), and reflective essays (n=10) submitted two weeks post-webinar. Inductive thematic analysis was performed using NVivo 12, with rigor ensured via peer debriefing, member checking, cross-case comparison, and 83% inter-coder agreement.

Results: Data analysis revealed that ChatGPT can promote pedagogical awareness (i.e., enhanced professional development opportunities, enhancement of critical thinking skills, and autonomy and confidence) and pedagogical practices (i.e., understanding students' needs and personalizing teaching and content creation and resource development).

Conclusion: These findings suggest that ChatGPT can positively impact language teachers without necessarily sacrificing their jobs, which is the dominant concern in the current academic literature.

INTRODUCTION

Artificial Intelligence and the Rise of Generative AI

The field of Artificial Intelligence (hereafter AI) has the potential to revolutionize language education. The integration of emerging technologies like AI into language education has already shown promise through Intelligent Tutoring Systems (ITS) (Gamper & Knapp, 2010; Schulze, 2008; Stockwell, 2007), Automated Writing Evaluation (AWE) (Han & Sari, 2024), automatic speech recognition (Inceoglu et al., 2023), Robot-Assisted Language Learning (RALL) (Engwall et al., 2022), Chatbots (Jeon, 2023) and Extended Reality (XR) (Khazaei & Ebadi, 2023). However, there is still much-untapped potential for AI in education (Godwin-Jones, 2023), specifically the recent development of Large Language Models (LLMs) as a contributing factor to integrating AI-based tools into teachers' teaching practices (Bonner et al., 2023). AI-based systems known as LLMs are designed to understand and generate human-like text based on the input they receive (Liu et al., 2024). These systems use deep learning techniques, particularly transformer architectures, and are trained on vast amounts of textual data

to learn patterns, semantics, and syntax of human language (Kasneci et al., 2023; Yan et al., 2024).

Emergence of Generative AI and ChatGPT

One increasingly popular batch of LLM-AI-led technology is generative AI (GenAI), particularly and their subsequent tools, like ChatGPT, that use huge collections of past textual data to train the eventual model to produce human-like responses to prompts written by a user (see Kohnke et al., 2023). This breakthrough technology offers innovative pedagogical affordances for language learning, such as stimulating learners' interests (Kohnke, 2022), promoting higher-order thinking skills (Kasneci et al., 2023), providing personalized learning based on language learners' proficiency levels (Kuhail et al., 2023), and facilitating an authentic, interactive language-learning environment (Chiu et al., 2023), which calls for more research into this field (Tlili et al., 2023). Recent studies have primarily concentrated on evaluating the efficacy of this technology (Barrot, 2023, 2024; Kohnke et al., 2023) or emphasizing student-centered perspectives (Yan, 2023; Yuan et al., 2024). Against this backdrop, the present study seeks to explore the perceptions of English as a Foreign Language (EFL) teachers regarding the incorporation of ChatGPT into language teaching, aiming to offer insights that could guide the creation of effective policies within English education.

Affordances of ChatGPT for Language Learning

The field of language education is experiencing substantial advancements with the introduction of ChatGPT. This section of the literature review critically examines the contributions and limitations of various studies on the role of ChatGPT in language education. This technology has transformed traditional chatbots (see Gao et al., 2024) and offers remarkable affordances. Some of these affordances include providing students with opportunities to practice their written language via prompt-response 'dialogue' like exchanges (e.g., Alexander et al., 2023; McCallum, 2023). Students can also practice and enhance their grammatical and lexical knowledge by prompting these models to support them with planning written work, generating texts, and providing feedback on a text that is entered with a prompt (e.g., Barrot, 2023; Cotton et al., 2024; Huang et al., 2022). The affordances mentioned above, along with other functionalities like stimulating learners' interests in language learning (e.g., Kohnke, 2022), promoting higher-order thinking skills (Kasneci et al., 2023), being available 24/7, allowing students to practice their language skills anytime and anywhere (e.g., Haristiani, 2019), providing personalized learning based on language learners' proficiency levels (Kuhail et al., 2023), facilitating an authentic, interactive language-learning environment (Chiu et al., 2023), conducting formative assessments with immediate feedback (Cotton et al., 2024; Huang et al., 2022; Kuhail et al., 2023) mean that these tools have captured the attention of language teachers. AI-powered tools have become more appealing to teachers, specifically when recent research has also demonstrated their efficacy in assisting teachers with evaluating the teaching process as well as facilitating lesson planning (Celik et al., 2022; Zawacki-Richter et al., 2019).

Controversies and Ethical Concerns

However, despite the vast possibilities to aid language learning, ChatGPT's impact on the field has sparked substantial controversy Some experts acknowledge its potential as an educational support tool and a potential disruptor of the status quo (e.g., Kohnke et al., 2023), while others emphasize its disadvantages and potential risks, such as malpractice, trustworthiness, and cultural bias (Eke, 2023; Kostka & Toncelli, 2023). There is ongoing debate surrounding the ethical use of ChatGPT in language education. Some worry that it could facilitate malpractice (e.g., cheating) (see Eke, 2023; Saville, 2023) and have concerns about its impact on fair assessment (see Rudolph et al., 2023). For instance, Noam Chomsky referred to ChatGPT as "high-tech plagiarism"[1], while Weismann (2023) essentially decried the end of the teaching profession.

Another issue is the originality and reliability of ChatGPT's responses, particularly, for those whose first language is not English may be vulnerable to false positives from the AI-detection software[2] (Reed, 2023). Also, the tool does not provide sources or citations if not requested, leading some to question whether its responses are truly original or simply paraphrased from uncited sources. Even if requested, ChatGPT gives false citations in most of the cases, which in both cases leads to plagiarism and academic misconduct. Another debate focuses on the cultural bias inherent in the source database and algorithms (Rettberg, 2022) where most of the text in the database is derived from an English corpus and then translated into target languages. In addition, it includes many words that are written more often than spoken. These issues are particularly concerning in language education, as students are likely to come from diverse cultural backgrounds and may be unaware that ChatGPT and other AI-driven tools are not culturally neutral.

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1   Stewart, J. (2023, February 17). Noam Chomsky says ChatGPT is a form of "high-tech plagiarism". My Modern Met https://mymodern-met.com/noam-chomsky-chatgpt/#:~:text=ChatGPT%20is%20basically%20high%2Dtech,to%20avoid%20doing%20- the%20work

2   Reed, B. (2023, July 10). Programs to detect AI discriminate against non-native English speakers, shows study. *The Guardian*. https:// shorturl.at/hmnP2

Teachers' Role

Considering the pros and cons of the integration of ChatGPT in language education, the impact of teachers should not be overstated as they have the potential to shape the use of ChatGPT in the classroom and curriculum with ethical and appropriate practices (Trust et al., 2023). However, incorporating AI-powered tools, like ChatGPT, into language teaching necessitates that language teachers to be well-versed in its pedagogical implications. Despite this necessity, few studies have explored teachers' perceptions of ChatGPT. As explained above, previous research has predominantly focused on learners.

It is important to note that while there is a significant amount of research on teachers' perceptions in language education, there is a noticeable gap in understanding the integration of ChatGPT into this field. Only one study has investigated teachers' perspectives on incorporating ChatGPT in English language teaching (Al-khresheh, 2024). However, this study had limitations in participant recruitment, such as selection bias, and involved participants from diverse contexts with varying technological perspectives. To address these limitations, Al-khresheh (2024) recommended conducting research with preliminary orientation sessions with ChatGPT to ensure feedback is based on firsthand experience. The study may have also underrepresented the cultural nuances intertwined with pedagogical methodologies across regions, indicating the need to explore culturally specific pedagogical contexts to shed light on region-specific complexities in AI tool adoption. The author also suggested that educational institutions should organize AI-centered pedagogical seminars to equip teachers with the latest skills and knowledge. Further research into the application of AI, including ChatGPT, is highly recommended to address unresolved areas identified in the study (Al-khresheh, 2024).

Informed by Al-khresheh (2024) and building on previous literature, this study is rooted in the significance of teachers' perceptions in shaping their teaching approaches and practices (Liu & Wang, 2024) and its impact on their professional identity and development (Heyder, 2019). Through this, the study aims to investigate the perceptions of EFL teachers in Iran regarding how ChatGPT can contribute to the enhancement of language teaching practices and pedagogical awareness. The central research question driving this qualitative study is: How do Iranian EFL teachers perceive the integration of ChatGPT in aiding the development of their pedagogical awareness and practices?

Figure 1
The Stages of the Study
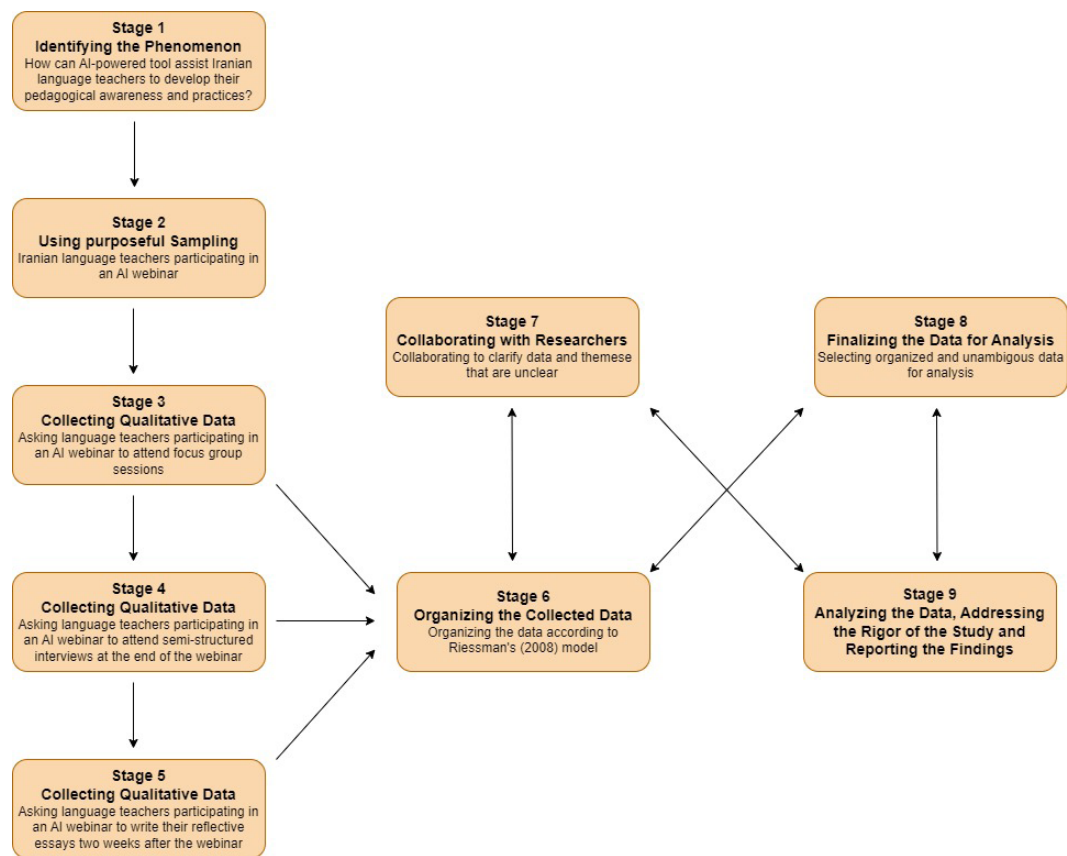
METHOD

Research Design

In order to address the gap in understanding teachers' perspectives on incorporating ChatGPT into language education, a qualitative research design was chosen. This approach allows for a comprehensive examination of the intricate dynamics (Yin, 2018) involved in AI integration within real-world educational settings. The case study method is particularly suitable for this research as it facilitates a thorough exploration of the specific context in which ChatGPT is being utilized, offering valuable insights into its implications. Figure 1 shows the stages of the study.

Webinar, Sampling Technique and Participants

To address the necessity of teachers' professional development and to upskill their CALL competencies, the first author was invited by a private sector in language education to organize a series of webinars on CALL for Iranian language teachers. The webinar which is the focus of the current study

titled 'Artificial intelligent advancement in language education.' The webinar was held using Zoom as the primary platform, and the instructor employed various tools, including Focusky and multimedia tools, to enhance the interaction with participants and the quality of instruction. The webinar consisted of different sections that explored topics such as the timeline of AI progress in language education, basic concepts in AI, critics of AI, the practical implementation of AI in language education, and the Q&A sessions.

According to Czarniawska (2004), purposeful sampling involves selecting a subset of participants who represent the population based on basic screening criteria. In this case study, purposeful sampling was used to choose the participants. The participants were chosen from this specific webinar participants according to the following criteria: (1) they needed to be a language teacher; (ii) they had to participate in the study voluntarily; (iii) they were required to have at least two years of teaching experience during the time when data was being collected.

The first author submitted an invitation email to around 200 language teachers who attended previous CALL workshops

Table 1

Research Participants' Demographic Information

		N = 23	%
Gender			
	Male	8	35%
	Female	15	65%
Age			
	20-24	1	4.3%
	25-29	4	17.5%
	30-34	4	17.5%
	35-39	5	21.7%
	40-44	8	34.7%
	45+	1	4.3%
Teaching experience			
	1-5 years	15	65.2%
	6-11 years	5	21.8%
	12-17 years	2	8.7%
	18-23 years	1	4.3%
Academic degree			
	MA student	5	21.7%
	MA	9	39.3%
	PhD student	8	34.7%
	PhD	1	4.3%

and/or webinars. Among them, 73 English as a Foreign Language (EFL) teachers completed the expression of interest (EOI) forms. The webinar link was sent out to 73 registered teachers, yet only 23 teachers attended and engaged in the webinar. Prior to conducting this study, all participants were given information about the study and agreed to participate. The researchers also obtained informed consent from each individual participant in the study to publish the results. All 23 EFL teachers agreed to participate voluntarily in the research project. This number of participants would be appropriate for a qualitative research study (Lichtman, 2013). These EFL teachers were selected to provide detailed and informative data on the central phenomenon of the study. Demographic information, such as age, gender, teaching experience, and highest qualification, was collected and categorized, and presented in Table 1.

Data Collection

This study employed three complimentary data collection methods: focus group sessions, semi-structured interviews, and reflective essays (see Figure 2). Using multiple methods helps validate results and increases the reliability of a study by capturing diverse perspectives and providing a richer data set (Salmons, 2014). The subsequent sections provide further details about these tools.

Focus Group Sessions

Focus group sessions were organized to gain initial insights into teachers' use of ChatGPT and to foster group discussions that could reveal collective attitudes and experiences. These sessions enabled participants to engage with one another and expand on each other's responses, creating a dynamic and interactive setting for data collection. Although no pressure was exerted on any participants to participate, all 23 teachers were involved and volunteered in the focus group after each session. After completing each section of the webinar, the focus group sessions were held through oral group interviews, which lasted for 20-30 minutes. The sessions were transcribed and coded, and around eight

questions were asked during the focus group sessions, with teachers responding to the questions they chose, followed by feedback from other focus group members. All of the questions were created by the researchers and were rooted in the sessions' content.
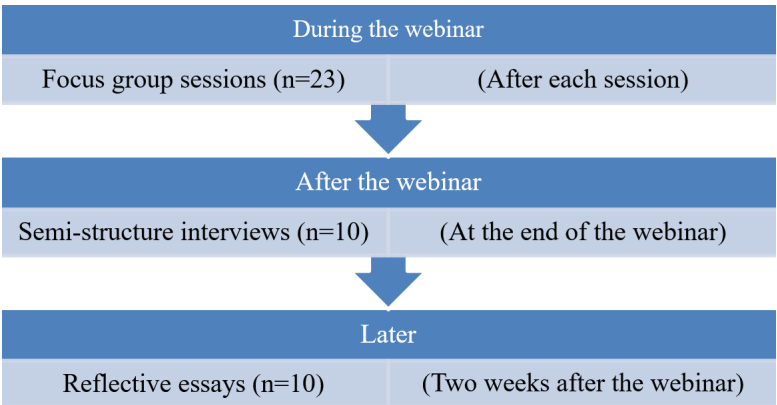
Semi-Structured Interviews

Semi-structured interviews were chosen to delve deeper into individual teachers' perceptions and experiences with ChatGPT. This method provides structure with predetermined core questions while allowing flexibility for follow-up questions and probing based on participants' responses. By conducting one-on-one interviews, the researchers ensured that participants could express their thoughts and feelings without external influence, such as peer pressure, which is essential for obtaining honest and detailed insights (Orvik et al., 2013). At the end of the webinar, ten participants took part in these 45-60 minute interviews individually. All interviews were recorded for transcription purposes. Since both the interviewer (first author) and the participants share Persian (or Farsi) as their mother tongue, all ten interviews were conducted in this language to ensure clarity of expression. To gather additional information, the interviewer used probes such as "Could you explain your response more?" or "Tell me more…" (Creswell, 2012, p. 221).

Reflective Essays

Reflective essays, written two weeks after the webinar, were employed to capture participants' more thoughtful and introspective feedback on their experiences with ChatGPT. The delayed writing of the reflective essays allowed participants the time to contemplate their interaction with ChatGPT and apply it in their actual teaching environments. This data collection method offered a longitudinal view and fostered deeper reflection, complementing the immediate feedback from focus groups and interviews. While the essays contained guiding questions, teachers were free to write as much or as little as they desired in response to the prompts. This section employed data from reflective essays

Figure 2

Stages of Data Collection

During the webinar	
Focus group sessions (n=23)	(After each session)

After the webinar	
Semi-structure interviews (n=10)	(At the end of the webinar)

Later	
Reflective essays (n=10)	(Two weeks after the webinar)

submitted by ten individuals. The first author opted to use a set of prompts for reflective essays, covering all areas of the course material rather than just the ChatGPT content. Teachers were asked to share their experiences with ChatGPT used during the webinar. Specific questions about AI were included:

(1) To what extent are you content with the ChatGPT for teaching and learning?
(2) What aspects of the AI did you appreciate the most? Can you give specific examples of activities that you enjoyed?
(3) Did the AI contribute to your understanding of teaching knowledge and skills?
(4) In what ways can AI enhance your experience with teaching practices?

Data Analysis

The researchers conducted the current study to investigate how language teachers in Iran could benefit from an AI-powered tool called ChatGPT, in terms of developing their pedagogical awareness and practices. The data collected from three sources were analyzed using thematic analysis (Braun & Clarke, 2006). To achieve this, the researchers utilized inductive thematic analysis. This method involves deducing meaning and recognizing patterns from raw data without any preconceived notions (Braun & Clarke, 2006). The advantage of using inductive thematic analysis is that it produces categories based on the information gathered and prioritizes the opinions and perspectives of the research participants over those of the researchers (Braun & Clarke, 2006). Essentially, inductive coding promotes the creation of coding categories that are derived from the initial data.

The researchers utilized NVivo 12 to follow Braun and Clarke's (2006) phases of thematic analysis. They approached the data thematization through multiple recursive phases. The researchers re-read the data multiple times during the initial phase after inputting it into NVivo 12. As per the study conducted by Braun and Clarke in 2006, the second phase of the research involved organizing the data obtained from the initial concepts and uncovering implicit extracts. These extracts were not explicitly stated but inferred from relevant literature. For instance, upon encountering a sentence like "ChatGPT offers various opportunities for my career growth," the researchers identified the first relevant idea - professional development. In the third phase of the research, the initial codes were grouped into potential themes. To do this, the researchers used software to create potential parent codes and themes. It was important to discuss these parent codes and potential themes with other experts to ensure that they accurately represented the participants' intentions. Two research assistants also read the data to identify common themes and created a list of examples for each theme. They evaluated the frequency of each theme both quantitatively and qualitatively by comparing their findings to those from the literature. The researchers shared their findings with the first researcher and formed a panel to reach a consensus on the final themes that all three agreed upon. After some modifications, deletions, and combinations based on the invited experts, the researchers created a comprehensive thematic map using NVivo 12 in the fourth phase.

After analyzing the data, the researchers checked the obtained themes for consistency across all data sets. For this purpose, the researchers renamed the themes based on interesting words or phrases in teachers' data. In the sixth phase, the researchers selected some vivid examples of extracts and provided the report in the Findings section.

The Rigor of the Study

To achieve reliable results in qualitative research, it is essential to ensure rigor. This study focused on three elements of rigor: credibility, transferability, and dependability, as suggested by Ary et al. (2014). To improve credibility (similar to internal validity in quantitative research), we used the peer debriefing technique, where two research assistants in applied linguistics reviewed parts of the data to check if the themes identified were consistent. We also used member checking to verify our themes with all of the participants to strengthen the thematization process. To address transferability (similar to external validity in quantitative research), we used cross-case comparison by including participants with different educational levels and teaching experiences from various parts of Iran to increase the generalizability of our findings. Finally, we ensured dependability (similar to reliability in quantitative research) by evaluating the in-

Table 2

Frequency of Themes and Sub-Themes

Theme	Sub-themes	Freq.
Pedagogical awareness	Enhanced professional development opportunities	140
	Autonomy and confidence	21
	Enhancement of critical thinking skills	15
Pedagogical practice	Understanding students' needs and personalizing teaching	44
	Content creation and resource development	36

ter-coder agreement. All data were independently coded by three coders: two research assistants and the primary researcher. The inter-coder agreement was assessed based on their coding of the entire dataset. We achieved an 83% inter-coder agreement, indicating strong consistency in the interpretation of the data (McHugh, 2012).

RESULTS

According to the research question of the study, data analysis revealed two main themes of teachers' pedagogical awareness and pedagogical practice that emerged from the focus groups, interviews, and reflective essays. As shown in Table 2, these main themes are categorized into various sub-themes: 1) Pedagogical awareness: a) enhanced professional development opportunities, b) enhancement of critical thinking skills, and c) autonomy and confidence, 2) Pedagogical practice: a) understanding students' needs and personalizing teaching, and b) content creation and resource development.

The participants also discussed several challenges they faced during their preparation, but this study did not focus on these challenges, and therefore they were not included in the findings.

Pedagogical Awareness

Based on the data analysis, it was evident that teachers view ChatGPT as a valuable tool for improving their pedagogical awareness. The feedback from the participants underscored various important areas where ChatGPT contributes to their professional growth and development, such as offering enhanced professional development opportunities, fostering autonomy and confidence, and promoting critical thinking skills.

Enhanced Professional Development Opportunities

In her reflective essay, Azadeh emphasizes how ChatGPT provides professional development opportunities tailored to teachers' specific goals by recommending suitable courses, conferences, workshops, and resources:

> ChatGPT provides me with diverse possibilities for professional development. When I sought its assistance, it proposed numerous internet-based courses that were consistent with my professional development objectives, suggested in-person and virtual conferences and workshops that were pertinent to my field of expertise and interests, and shared professional development resources, such as scholarly articles and instructional videos that provided me with knowledge on teaching methods and trends in education. (Azadeh, female – Reflective essay)

Teachers found ChatGPT to be a flexible tool that allowed them to learn at their own pace and according to their schedules, enabling continuous professional development

and lifelong learning. In a focus group, Habib pointed out the advantages of this flexibility: "*I have the freedom to access ChatGPT at any time, day or night, which allows me to learn whenever I have the time and desire. This flexibility enables me to manage my professional development around my hectic schedules*" (Habib, male – Focus group). Vania echoed this sentiment, "*with ChatGPT, I can learn at a pace that suits me and take breaks whenever necessary. This flexibility ensures that I do not feel stressed or pressured, which can improve my overall learning experience and professional development*" (Vania, female – Focus group). Sama emphasized the importance of attaining an improved work-life balance: "*I believe that it is beneficial in achieving a better work-life balance. ChatGPT enables me to plan my professional development around my personal obligations, which can alleviate stress and improve the balance between my work and personal life*" (Sama, female – Interview).

Teachers highlighted that ChatGPT has the capability to personalize the learning process according to individual needs and preferences, facilitating personalized professional development. Hamid shared his firsthand experience: "*ChatGPT has the ability to be personalized in order to meet my unique learning needs and preferences. I have the option of selecting the topics I want to study and the depth of knowledge I desire, providing me with a tailored learning experience.*" (Hamid, male – Interview).

Teachers have also observed that ChatGPT's platform undergoes consistent updates with the most recent trends, knowledge, and effective methodologies in the field of education. This resource enables them to improve their teaching strategies and remain abreast of the latest developments in language education. Kian highlighted this during his interview:

> The AI-based environment is continuously refreshed with the most recent education-related knowledge, trends, and effective techniques. This guarantees that I have access to the most pertinent and current information that can aid me in enhancing my teaching methods and staying up-to-date with the newest advancements in the education sector. (Kian, male – Interview)

Autonomy and Confidence

The data analysis demonstrates that ChatGPT can boost teachers' autonomy and confidence, enabling them to take charge of their own learning and professional development. This empowerment leads to greater job satisfaction and a more rewarding work experience, as expressed by Arvid in the focus group "*through the workshop, I discovered that I have the ability to manage and direct my own learning and professional development using AI technology. As a result, I feel a greater sense of satisfaction and investment in my role as an English language teacher*" (Arvid, male – Focus group). Soosan emphasized the significance of self-directed learning during her interview: "*my primary objective as a teach-*

er is to enhance my skills and knowledge through self-initiated learning. By doing so, I can gain greater confidence in my abilities and effectively implement my learning to improve my teaching practices and enhance my student's academic results" (Soosan, female – Interview).

Enhancement of Critical Thinking Skills

The participants recognized that ChatGPT has the potential to enhance their critical thinking abilities through the presentation of diverse viewpoints and opinions, thereby aiding in making well-informed decisions and effectively addressing problems. Tara highlighted this in her interview:

> The instructor explained that ChatGPT can provide teachers with a range of viewpoints and opinions on a topic, which can help them develop a more comprehensive understanding of the subject matter. By asking questions and seeking out new information, teachers can enhance their critical thinking skills and become better problem solvers and decision-makers. This, in turn, can lead to improved teaching outcomes for students and greater job satisfaction for teachers. (Tara, female – Interview)

Neda also described using an AI-powered decision-making framework to approach complex problems more critically:

> I used an AI-powered decision-making framework to help me approach complex problems in a more critical manner. The framework recommended a structured process, starting with problem identification, followed by problem analysis, generating possible solutions, evaluating options, selecting the best option, and finally implementing and monitoring the solution. (Neda, female – Reflective essay)

Pedagogical Practice

Understanding Students' Needs and Personalizing Teaching

Teachers have noted that AI-supported platforms enable them to gain valuable insights into students' needs and learning styles, which in turn allows for more personalized and effective teaching methods. Through the analysis of student performance data, educators are able to pinpoint strengths and areas for improvement, and provide tailored feedback. Aref described how he used ChatGPT for data analysis, "*following the workshop, I utilized ChatGPT to analyze my students' performance data, enabling me to pinpoint their strengths and weaknesses. This analysis provided me with personalized feedback that I could act on, resulting in improved teaching practices*" (Aref, male – Reflective essay). Nazanin, in her interview, shared that:

> According to the workshop instructor, ChatGPT can analyze student performance data to identify patterns and trends, enabling teachers to gain a deeper understanding of their students' needs and learning styles. This can assist in providing personalized feedback to students and helping them with their individual challenges, ultimately leading to more effective teaching practices. (Nazanin, female – Interview)

Content Creation and Resource Development

AI tools provide support to educators in multiple facets of content development, including idea generation, research, and editing. This assistance ensures the creation of compelling and exceptional educational content. Solmaz has implemented ChatGPT for lesson planning and said that "*it helped me receive feedback on my plans and suggested ways to make them more innovative and captivating. I believe that this can be a valuable resource for teachers to enhance their lesson-planning abilities and generate fresh ideas for upcoming classes*" (Solmaz, female – Reflective essay).

Amin and Eli offered specific use cases demonstrating how ChatGPT facilitates content creation.

> When I was preparing a language test for my students, I asked ChatGPT to create a daily conversation, and it did! Also, I asked it to proofread the whole test, and it did! Also, I asked to make three multiple-choice questions of that conversation, and it did it again! Isn't it amazing? I saved hours. (Amin, male – Interview)

> One of my main challenges in online courses is students' cheating! ChatGPT helped to create a test for each student. It was wonderful as it provided me with 43 reading comprehension tests at the same level of proficiency with the same topic, but different words and content. Humans cannot do it for sure. (Eli, female – Reflective essay)

DISCUSSION

Pedagogical Awareness

The findings indicate that ChatGPT offers substantial benefits for teachers' professional development. However, it is important to acknowledge that ChatGPT's suggestions may sometimes be superficial and not tailored to specific, nuanced teaching contexts. Therefore, in developing an appropriate contextualized program of training for teachers, actual human input would be essential to supplement and balance the training recommended by ChatGPT. When considering teacher training in challenging sociopolitical contexts (like Iran), this balance seems especially relevant to ensure appropriate and contextualized development for teachers (Hubbard, 2023; Nami, 2023).

More widely, our findings are evidence of a paradigm shift in thinking about how AI and teachers can collaborate to achieve particular educational goals. In this case, the added support from ChatGPT may further foster self-directed professional development among teachers and, therefore, put into practice the now long-standing message that teachers need to take responsibility for educating themselves with technology and also responsibility for their wider development (Stockwell, 2009). In this respect, one hurdle that ChatGPT may help overcome is recommending a wide enough range of teacher resources that are accessible and

low-cost/free. This may help maintain teachers' motivation and deter them from giving up pursuing self-directed learning because recommended resources are unavailable or difficult to locate, particularly in print form (Stockwell, 2009).

The flexibility afforded by ChatGPT allows teachers to engage with flexible and convenient professional development. This kind of development is markedly different from the often rigid, scheduled professional development that is provided by institutions. When conceptualized along a cline from face-to-face input to online provision (e.g., see Floris, 2021), we see here that teachers tend to favor online provision over the opposite end of the cline (i.e., traditional face-to-face input). This finding has important implications for how we envisage the provision and delivery of teacher professional development initiatives. It also reiterates and reminds us of the significance of previous observations from Compton (2009) who acknowledges the changing roles and responsibilities of professional development stakeholders in light of the increasing uptake of online development opportunities.

When it comes to personalized professional development, teachers mentioned that ChatGPT could offer tailored opportunities. Alongside the first theme of professional development and growth mentioned above, this capability of ChatGPT may be one way of practically maintaining and protecting teacher motivation along the continuous professional development cycle, with this latter point heavily advocated for in similar contexts to the Iranian one we are studying here (e.g., see Lamb & Wyatt, 2019). These findings are intriguing as the existing literature lacks information on tailored professional development opportunities for educators, with the emphasis solely on personalized learning environments for students (Kuhail et al., 2023).

Connected to personalized professional development is that teachers felt that ChatGPT could provide them with opportunities to develop autonomy and confidence because they can direct their own learning. This finding has important implications for current teacher training in language education. It opens up the possibility of teachers taking control of the design of personalized professional development plans in place of mandatory generic training programs which may be too broad for teachers who want to specialize in particular skills or interests (Borg, 2015). Mandatory generic training may negatively impact their professional development goals if it does not meet their current needs, and thus, suggestions from AI tools may offer greater autonomy and confidence as teachers take control of their own development and shift from focusing on institutional to individual professional development (Borg, 2015).

Teachers appreciated that ChatGPT could provide answers to prompts and include a range of different opinions within the texts. Teachers believed this could help support developing their critical thinking skills and also support them in developing a comprehensive understanding of particular topics. This finding, like the other themes, is further evidence that AI tools like ChatGPT have the ability to shift the focus from text creation as a teacher to focus on using text to develop content understanding and critique, thus promoting a focus on higher-order thinking skills for these teachers (Kasneci et al., 2023).

Pedagogical Practices

Teachers articulated that ChatGPT had the potential to understand student performance and their needs. ChatGPT can allow teachers to generate patterns in student performance data and then they can focus on interpreting that data for their particular course or learning context. In line with the other themes which emerged from the data, this finding highlights how ChatGPT may be able to reduce time spent on collation activities, allowing teachers to spend more time on cognitively demanding tasks like interpreting students' weaknesses and strengths and formulating appropriate strategies for managing those (see Alexander et al., 2023; Haristiani, 2019; Kasneci et al., 2023).

The vast expanse and power of ChatGPT for performing demanding tasks such as providing feedback were illuminated under the theme of creativity. Teachers reported that their lessons had become more creative and innovative methodologically, as a result of lesson plan feedback from ChatGPT. This finding again has implications for teacher trainer roles and the relationship between teacher, trainer, and professional development. If ChatGPT is able to provide feedback to make lessons more innovative and creative, we believe there is a possibility that the relationship and roles between teachers and teacher trainers will change to accommodate greater input and support from AI. The findings align with the integration of other CALL tools, such as Intelligent Tutoring Systems (see Gamper & Knapp, 2010; Schulze, 2008; Stockwell, 2007) and Automated Writing Evaluation (Han & Sari, 2024), and also support the recent research on AI-powered tools (see Cotton et al., 2024; Huang et al., 2022; Kuhail et al., 2023).

Teachers also expressed surprise that ChatGPT could create impressive content. In reflective essays and interviews, teachers mentioned a broad range of content creation prompts that ChatGPT had been able to produce output for. ChatGPT's capabilities to produce test content, proofread, and manipulate text to provide different versions of texts for assessments clearly have important implications for test creation and administration which are in line with other studies (Huang et al., 2022; Kuhail et al., 2023). As highlighted by one teacher, the amount of human time needed to prepare different text versions for individualized student assessment is immense and inefficient if ChatGPT can create the same output in a quicker time. This finding has important implications for test validity and test security because it can help teachers reduce peer-to-peer collusion and plagiarism, as

each student has an individualized text and task. A further point to note is that these thoughts of Eli also remind us that the rapid generation of texts can also help assessors focus on creating questions and tasks around the content of these texts, which can then, in turn, be used to promote assessing students' analytical, critical, communicative, and problem-solving abilities (Cotton et al., 2024).

CONCLUSION

This study aimed to investigate how ChatGPT can enhance language teachers' pedagogical awareness and professional practices. The findings suggest that teachers view ChatGPT as a valuable, self-directed development tool that supplements existing pedagogical frameworks, facilitating personalized, ongoing learning. ChatGPT's integration into teachers' professional routines has the potential to support classroom management and streamline traditionally time-consuming tasks, such as creating reading materials, generating test questions, and proofreading, thereby allowing teachers to dedicate more time to higher-order instructional activities like evaluating student performance and engaging deeply with curriculum design. Although some limitations were noted, including ChatGPT's limited ability to address cultural and affective factors, its challenges in facilitating speaking skills, and teachers' concerns regarding academic integrity, participants generally regarded the tool's disruptive nature as an opportunity for professional growth rather than a threat.

These findings indicate that ChatGPT can foster a shift toward a more autonomous, flexible, and personalized approach to professional development for language teachers, moving away from top-down models that may not always address individual needs effectively. The tool's adaptability and accessibility make it especially suitable for fostering life-long learning habits that align with teachers' unique goals and contexts. Future research could build on this work by examining student perceptions of ChatGPT in language learning, as understanding students' views is crucial to comprehending the tool's broader ethical and pedagogical implications. Comparative studies across diverse educational settings would also be valuable, helping to assess how differences in resources and institutional contexts shape the affordances and limitations of ChatGPT. Such studies would provide a more comprehensive picture of ChatGPT's potential and challenges, ultimately contributing to a more effective and responsible integration of AI in language education.

CONFLICT OF INTERESTS

The authors declare that they have no conflict of interest.

DECLARATION OF COMPETING INTEREST

None declared.

AUTHORS' CONTRIBUTIONS

Dara Tafazoli: conceptualization; methodology; formal analysis; investigation; resources; writing - original draft; writing - review & editing; visualization; supervision; project administration.

Lee McCallum: conceptualization; methodology; writing - original draft; writing - review & editing; supervision.

REFERENCES

Al-khresheh, M. H. (2024). Bridging technology and pedagogy from a global lens: Teachers' perspectives on integrating ChatGPT in English language teaching. *Computers and Education: Artificial Intelligence, 6*, 100218. https://doi.org/10.1016/j.caeai.2024.100218

Alexander, K., Savvidou, C., & Alexander, C. (2023). Who wrote this essay? Detecting AI-generated writing in second language education in higher education. *Teaching English with Technology, 23*(2), 25–43. https://doi.org/10.56297/BUKA4060/XHLD5365

Ary, D., Jacobs, L. C., Sorensen, C. K., & Walker, D. (2014). *Introduction to research in education*. Cengage Learning.

Barrot, J. S. (2023). Using ChatGPT for second language writing: Pitfalls and potentials. *Assessing Writing, 57*, 100745. https://doi.org/10.1016/j.asw.2023.100745

Bonner, E., Lege, R., & Frazier, E. (2023). Large language model-based artificial intelligence in the language classroom: Practical ideas for teaching. *Teaching English with Technology, 23*(1), 23-41. https://doi.org/10.56297/BKAM1691/WIEO1749

Borg, S. (2015). Overview - beyond the workshop: CPD for English language teachers. In S. Borg (Ed.), *Professional development for English language teachers: Perspectives from higher education in Turkey* (pp. 5–13). BC.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77–101. https://doi.org/10.1191/1478088706qp063oa

Celik, I., Dindar, M., Muukkonen, H., & Järvelä, S. (2022). The promises and challenges of artificial intelligence for teachers: A systematic review of research. *TechTrends, 66*(4), 616-630. https://doi.org/10.1007/s11528-022-00715-y

Chiu, T. K. F., Moorhouse, L. M., Chai, C. S., & Ismailov, M. (2023). Teacher support and student motivation to learn with Artificial Intelligence (AI) based chatbot. *Interactive Learning Environment*. https://doi.org/10.1080/10494820.2023.2172044

Compton, L. K. (2009). Preparing language teachers to teach language online: A look at skills, roles, and responsibilities. *Computer Assisted Language Learning, 22*(1), 73-99. https://doi.org/10.1080/09588220802613831

Cotton, D. R. E., Cotton, P. A., & Shipway, J. R. (2024). Chatting and cheating: Ensuring academic integrity in the era of ChatGPT. *Innovations in Education and Teaching International 61*(2), 228-239. https://doi.org/10.1080/14703297.2023.2190148

Creswell, J. W. (2012). *Educational research: Planning, conducting and evaluating quantitative and qualitative research* (4th ed.). Pearson.

Czarniawska, B. (2004). *Narratives in social science research*. SAGE.

Eke, D. O. (2023). ChatGPT and the rise of generative AI: Threat to academic integrity? *Journal of Responsible Technology, 13*, 100060. https://doi.org/10.1016/j.jrt.2023.100060

Engwall, O., Lopes, J., Cumbal, R., Berndtson, G., Lindström, R., Ekman, P., Hartmanis, E., Jin. E., Johnston, E., Tahir, G., & Mekonnen, M. (2022). Learner and teacher perspectives on robot-led L2 conversation practice. *ReCALL, 34*(3), 344-359. https://doi.org/10.1017/S0958344022000027

Floris, F. D. (2021). Online continuing professional development. In H. Mohebbi., & C. Coombe (Eds.), *Research questions in language education and applied linguistics*. Springer. https://doi.org/10.1007/978-3-030-79143-8_115

Gamper, J., & Knapp, J. (2002). A review of intelligent CALL systems. *Computer Assisted Language Learning, 15*(4), 329-342. https://doi.org/10.1076/call.15.4.329.8270

Gao, Y., Wang, Q., & Wang, X. (2024). Exploring EFL university teachers' beliefs in integrating ChatGPT and other large language models in language education: a study in China. *Asia Pacific Journal of Education, 44*(1), 29–44. https://doi.org/10.1080/02188791.2024.2305173

Godwin-Jones, R. (2023). Emerging spaces for language learning: AI bots, ambient intelligence, and the metaverse. *Language Learning & Technology, 27*(2), 6–27. https://hdl.handle.net/10125/73501

Han, T., & Sari, E. (2024). An investigation on the use of automated feedback in Turkish EFL students' writing classes. *Computer Assisted Language Learning, 37*(4), 961-985. https://doi.org/10.1080/09588221.2022.2067179

Haristiani, N. (2019). Artificial intelligence (AI) chatbot as language learning medium: An inquiry. *Journal of Physics: Conference Series, 1387*(1), 012020. https://doi.org/10.1088/1742-6596/1387/1/012020

Heyder, A. (2019). Teachers' beliefs about the determinants of student achievement predict job satisfaction and stress. *Teaching and Teacher Education, 86*, 1–9. https://doi.org/10.1016/j.tate.2019.102926

Hubbard, P. (2023). Contextualizing and adapting teacher education and professional development. In D. Tafazoli & M. Picard (Eds.), *Handbook of CALL teacher education and professional development* (pp. 3-14). Springer. https://doi.org/10.1007/978-981-99-0514-0_1

Huang, W., Hew, K. F., & Fryer, L. K. (2022). Chatbots for language learning – are they really useful? A systematic review of chat-bot-supported language learning. *Journal of Computer Assisted Learning, 38*(1), 237–257. https://doi.org/10.1111/jcal.12610

Inceoglu, S., Chen, W., & Lim, H. (2023). Assessment of L2 intelligibility: Comparing L1 listeners and automatic speech recognition. *ReCALL, 35*(1), 89-104. https://doi.org/10.1017/S0958344022000192

Jeon, J. (2023). Chatbot-assisted dynamic assessment (CA-DA) for L2 vocabulary learning and diagnosis. *Computer Assisted Language Learning, 36*(7), 1338-1364 https://doi.org/10.1080/09588221.2021.1987272

Ji, H., Han, I., & Ko, Y. (2023). A systematic review of conversational AI in language education: Focusing on the collaboration with human teachers. *Journal of Research on Technology in Education, 55*(1), 48-63. https://doi.org/10.1080/15391523.2022.2142873

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. (2023). ChatGPT for good? On opportunities and challenges of Large Language Models for education. *Learning and Individual Differences, 103*(102274). https://doi.org/10.1016/j.lindif.2023.102274

Khazaie, S., & Ebadi, S. (2023). Exploring the feasibility of augmented reality game-supported flipped class-rooms in reading comprehension of English for medical purposes. *Computer Assisted Language Learning*. https://doi.org/10.1080/09588221.2023.2173612

Kohnke, L. (2022) A pedagogical chatbot: A supplemental language learning tools. *RELC Journal*. https://doi.org/10.1177/00336882211067054

Kohnke, L., Moorhouse, B. L., & Zou, D. (2023). ChatGPT for language teaching and learning. *RELC Journal, 5*(4), 537-550. https://doi.org/10.1177/00336882231162868

Kostka, I., & Toncelli, R. (2023). Exploring applications of ChatGPT to English language teaching: Opportunities, challenges, and recommendations. *TESL-EJ, 27*(3). https://doi.org/10.55593/ej.27107int

Kuhail, M. A., Alturki, N., Alramlawi, S., Alhejori, K. (2023). Interacting with educational chatbots: A systematic review. *Education and Information Technologies, 28*, 973–1018. https://doi.org/10.1007/s10639-022-11177-3

Lamb, M., & Wyatt, M. (2019). Teacher motivation: The missing ingredient in teacher education. In S. Mann & S. Walsh (Eds.), *The Routledge handbook of English language teacher education* (pp. 522-535). Routledge.

Lichtman, M. (2013). *Qualitative research in education: A user's guide* (3rd ed.). SAGE.

Liu, G. L., & Wang, Y.(2024). Modeling EFL teachers' intention to integrate informal digital learning of English (IDLE) into the classroom using the theory of planned behavior. *System, 120*, 103193. https://doi.org/10.1016/j.system.2023.103193

Liu, G. L., Darvin, R., & Ma, C. (2024). Exploring AI-mediated informal digital learning of English (AI-IDLE): A mixed-method investigation of Chinese EFL learners' AI adoption and experiences. *Computer Assisted Language Learning*. https://doi.org/10.1080/09588221.2024.2310288

McCallum, L. (2023). New takes on developing intercultural communicative competence: Using AI tools in telecollaboration task design and task completion. *Journal for Multicultural Education, 18*(1-2), 153-172. https://doi.org/10.1108/JME-06-2023-0043

McHugh, M. L. (2012). Interrater reliability: The kappa statistic. *Biochemia Medica, 22*(3), 276-282. https://pubmed.ncbi.nlm.nih.gov/23092060

Nami, F. (2023). CALL teacher education models, methods, and theoretical groundings: A systematic review of the studies in under-represented contexts. In: D. Tafazoli & M. Picard (Eds.), *Handbook of CALL teacher education and professional development* (pp. 483-503). Springer. https://doi.org/10.1007/978-981-99-0514-0_28

Orvik, A., Larun, L., Berland, A., & Ringsberg, K. C. (2013). Situational factors in focus group studies: A systematic review. *International Journal of Qualitative Methods, 12*(1), 338-358. https://doi.org/10.1177/160940691301200116

Rardin, J. (1977). The language teacher as facilitator. *TESOL Quarterly, 11*(4), 383–387. https://doi.org/10.2307/3585734

Rudolph, J., Tan, S., & Tan, S. (2023). ChatGPT: Bullshit spewer or the end of traditional assessments in higher education? *Journal of Applied Teaching & Learning, 6*(1), 342-362. https://doi.org/10.37074/jalt.2023.6.1.9

Salmons, J. (2014). *Qualitative online interviews: Strategies, design, and skills* (2nd ed.). SAGE.

Saville, N. (2023). The future of language learning in the era of ChatGPT. *Journal of e-Learning and Knowledge Society, 19*(3), 6-10. https://doi.org/10.20368/1971-8829/1135875

Schulze, M. (2008). Interfaces in Intelligent CALL. *Computer Assisted Language Learning, 21*(4), 301-303. https://doi.org/10.1080/09588220802393608

Stockwell, G. (2007). Vocabulary on the move: Investigating an intelligent mobile phone-based vocabulary tutor. *Computer Assisted Language Learning, 20*(4), 365-383. https://doi.org/10.1080/09588220701745817

Stockwell, G. (2009). Teacher education in CALL: Teaching teachers to educate themselves. *International Journal of Innovation in Language Learning and Teaching, 3*(1), 99-112. https://doi.org/10.1080/17501220802655524

Tlili, A., Shehata, B., Adarkwah, M.A., Bozkurt, A., Hickey, D.T., Huang, R., & Agyemang, B. (2023). What if the devil is my guardian angel: ChatGPT as a case study of using chatbots in education. *Smart Learning Environments, 10*(1), 15. https://doi.org/10.1186/s40561-023-00237-x

Trust, T., Whalen, J., & Mouza, C. (2023). Editorial: ChatGPT: Challenges, opportunities, and implications for teacher education. *Contemporary Issues in Technology and Teacher Education, 23*(1), 1-23. https://www.learntechlib.org/p/222408

Yan, D. (2023). Impact of ChatGPT on learners in a L2 writing practicum: An exploratory investigation. *Education and Information Technologies, 28*, 13943–13967. https://doi.org/10.1007/s10639-023-11742-4

Yan, L., Sha, L., Zhao, L., Li, Y., Martinez-Maldonado, R., Chen, G., Li, Z., Jin, Y., & Gašević, D. (2024). Practical and ethical challenges of large language models in education: A systematic scoping review. *British Journal of Educational Technology*, 55(1), 90-112. https://doi.org/10.1111/bjet.13370

Yin, R. K. (2018). *Case study research: Design and methods*. SAGE.

Yuan, Y., Li, H. & Sawaengdist, A. (2024). The impact of ChatGPT on learners in English academic writing: opportunities and challenges in education. *Language Learning in Higher Education, 14*(1), 41-56. https://doi.org/10.1515/cercles-2023-0006

Zawacki-Richter, O., Marín, V. I., Bond, M., & Gouverneur, F. (2019). Systematic review of research on artificial intelligence applications in higher education–where are the educators?. *International Journal of Educational Technology in Higher Education, 16*(1), 1-27. https://doi.org/10.1186/s41239-019-0171-0