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Unpacking the role of AI in transforming English language teacher professionalism¹

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Abstract

Purpose: Since its launch in November 2022, Chat-Generative Pre-trained Transformer, i.e., ChatGPT, as an advanced Artificial Intelligence-powered chatbot simulating human interaction and offering tailored feedback, has provoked mixed feelings in education. To promote its potential pedagogical relevance, its role from the perspectives of English language teachers needs to be explored further. Thus, the current study aims at investigating teachers' behavior patterns, perceptions, and suggestions about the role of ChatGPT to develop teacher professionalism. Accordingly, a case study was carried out involving 11 graduate students pursuing a degree in English Language Teaching (ELT). While two participants had recently completed their pre-service teacher training and were not actively teaching at the time of the study, the remaining participants were in-service English language teachers employed in diverse educational contexts, including public schools and higher education institutions. A self-administered written survey with ten items was utilized to gather the qualitative data, which were analyzed through manual thematic content analysis. The participants' self-reports illustrated varied instrumental genesis of ChatGPT that require teachers to be active users rather than passive recipients. Still, they remained conscious of the numerous inherent challenges, limitations, and ethical concerns raised in existing research in light of which the participants offered suggestions to mitigate those challenges. The study concludes by suggesting AI-empowered teacher professional development that emphasizes teacher agency rather than positions teachers as mere recipients of ChatGPT outcomes.

Keywords: ChatGPT, AI, teacher professional development, English language teachers.

Introduction

In November 2022, OpenAI launched an AI-based large language model, i.e., ChatGPT, that serves as a dialogue system imitating human conversation, understanding emotional and social cues, and offering helpful responses quickly (Kasneci et al., 2023; Lin, 2024). Metaphorically, its use within the field of education has been described as a double-edged sword with potential benefits and inherent drawbacks. The former covers its ability to produce human-like responses, assistance to devise instructional materials, help for language skill promotion, time saving,

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tailored feedback, to list but a few (Karataş et al., 2024; Kasneci et al., 2023). Yet, the latter covers the inability to make sense of cultural contexts, unreliable outcomes, lack of human nuances, data privacy, risk of misuse, to list but a few (Kohnke et al., 2023; Trust et al., 2023).

Background of the study

Recent literature has highlighted the role of AI tools, including ChatGPT, to help teachers grow professionally. It can support teachers in designing instructional materials, conducting assessments, and managing daily routines (Kasneci et al., 2023), though limitations remain (Lin, 2024). Such tools could serve as both learning and teaching assistants for not only in-service but also pre-service English teachers. They could create activity ideas, prepare lesson plans together with tailored instructional materials and assessment activities, and refine their language use (Kerr & Kim, 2025; Moorhouse, 2024).

AI tools in general are documented to transform teacher training and education. ChatGPT as one popular chatbot could also serve as a critical friend for language teachers, better their noticing skills, and help them connect theory and classroom practice (Arefian et al., 2024). In other words, it could help teachers reflect upon their assumptions, beliefs, and actions. In another relevant study, Outamgharte et al. (2025) identified positive teacher attitudes towards human and AI collaboration in reflective practice, in that teachers collaborating with AI as a critical friend gained self-confidence, identified their strengths and weaknesses, clarified professional development needs, and enhanced their instructional practices, although they valued human interactions irreplaceable.

Despite those benefits of utilizing AI tools for classroom practices, the relevant literature has also documented a wide range of constraints. Teachers are concerned about inaccurate AI-enhanced outcomes, equal access, lack of touch, misuse, plagiarism, decrease in teacher creativity, and data privacy (Adiguzel et al., 2023; Kasneci et al., 2023; Moorhouse, 2024; Trust et al., 2023).

Türkiye has also engaged with this trend, though research on ChatGPT's role in developing foreign language teacher professionalism remains limited. To illustrate, Aydın-Yıldız (2024) found that integrating ChatGPT in lesson planning helped pre-service teachers critical thinking, creativity, communication, and collaboration. Similar results were found by Kartal (2024), yet with well-documented challenges. The study of Özdemir-Çağatay (2023) underlined the potential of ChatGPT to assist teachers in reaching authentic materials, promote their language skills, and offer them tailored personalized guidance. However, it was also found that they were concerned about unethical AI use, plagiarism, unreliable outcomes, the need for human touch, and its role to suppress students' creativity and critical thinking.

Theoretical pillars of the current study

This case study, which explores in-service teachers' behavior patterns, perceptions, and suggestions regarding the role of ChatGPT in enhancing teacher professionalism, is grounded in Vygotsky's Sociocultural Theory (1978), the Technological Pedagogical Content Knowledge (TPACK) Framework (Mishra & Koehler, 2006), and Instrumental Genesis Theory (Rabardel, 1995). The first theory emphasizes that learning and growth are inherently social acts mediated by various texts, tools, and social relations to extend teachers' zone of proximal development (ZPD). In the context of the current research, ChatGPT as a mediational artefact could extend teachers' ZPD through various cognitive and pedagogical tasks such as helping them get knowledge, re-

examine their understanding, and reflect upon their assumptions, beliefs, and actions outside school borders that may not be achievable without such mediated support.

Second, based upon the understanding that teaching is a highly complex cognitive activity requiring the integration of diverse types of knowledge, the TPACK framework (Mishra & Koehler, 2006) underlines the intersection of technological, pedagogical, and content knowledge for effective teaching, which dynamically influence and shape each other. Building their conceptual framework on Shulman's pedagogical content knowledge, they extend it to integrate the role of technology into effective pedagogy. In their own words, "thoughtful pedagogical uses of technology require the development of a complex, situated form of knowledge" (p. 1017). In the context of the current research, in-service teachers are assumed to be engaged with tools like ChatGPT and decide where, when, and how to utilise it for their pedagogical decisions. In other words, they are expected to engage with it across theoretical, pedagogical, and methodological dimensions.

The last pillar of the current research is the Instrumental Genesis Theory developed by Pierre Rabardel, a French teacher-researcher specializing in psychology and ergonomics. Rabardel (1995, as cited in Tapan-Broutin, 2024, p. 167), the instrumental genesis process involves two key aspects: Instrumentation and instrumentalization. While the former should be understood as adapting one's ways of thinking and behaving to utilise a tool effectively, the latter requires modifying the tool to meet one's own needs. The theory underlines the dynamic relationship between the user and the tool. In the context of the current research, the study aims to explore how in-service teachers appropriate and personalize ChatGPT to meet their pedagogical needs.

The integration of Sociocultural Theory, the TPACK framework, and Instrumental Genesis Theory could offer a multidimensional lens to explore the beginning, novice and experienced language teachers' engagement with ChatGPT for professional development. The Sociocultural Theory highlights how various texts and tools shape teachers' professional learning who interact with those tools through adopting and adapting them taking their own classrooms and institutional contexts into consideration. TPACK, on the other hand, could help the researchers explore how they conceptualize and utilize AI tools as a key framework highlighting the intersection of technological, pedagogical, and content knowledge. Finally, Instrumental Genesis Theory could further deepen this exploration through guiding the researchers to explore how they transform those tools into instruments through adaptation. Together, these frameworks enable a comprehensive analysis of participants' professional trajectories, emphasizing evolving perceptions and behavior patterns.

These research questions are informed by an integrated theoretical framework. Sociocultural Theory provides a basis for examining how ChatGPT facilitates teacher learning and professional development through interactive guidance and cognitive scaffolding, particularly relevant to 1.2. and 1.3. Rabardel's Instrumental Genesis Theory could help understand the instrumentation and instrumentalization processes of the participants, aligning with 1.1 and 1.2. Additionally, the TPACK framework guides the investigation into how teachers integrate technological tools with pedagogical strategies and content knowledge, particularly addressing questions 1.1 and 1.3. Lastly, 1.4. intersects with all three theoretical pillars through guiding the exploration of enhancement of AI tools to support teachers' cognitive processes and classroom practices.

The rationale for the current research

It has been suggested that pre- and in-service teachers need to be empowered with AI literacy skills to ensure staying up-to-date (Kasneci et al., 2023). To that end, first their awareness levels and perceived benefits and challenges need to be explored to set an agenda for empowerment (Brandão et al., 2024; Trust et al., 2023). However, teacher perspective is an under-researched area, and further studies are needed to understand and promote the pedagogical relevance of AI in English language education (Arefian et al., 2024; Celik et al., 2022). Responding to the need to explore that under-researched area of teacher perspective (Ulla et al., 2023), the current case study aimed at investigating teachers' behavior patterns, perceptions and suggestions about the role of ChatGPT to develop teacher professionalism. To that end, the following research questions were devised to guide the current research:

1. What are the behavior patterns, perceptions, and suggestions of the participants regarding the use of ChatGPT in enhancing teacher professionalism?
2. How do participants currently use ChatGPT in their professional practices?
3. How do participants envision the future integration of AI tools into their continuous professional development?
4. How do participants perceive the usefulness of ChatGPT in supporting different aspects of their professional development?
5. What improvements do participants propose to enhance ChatGPT's effectiveness for professional use?

Methodology

Research design

The current investigation was devised as a case study, which should be understood as an in-depth, empirical investigation of a contemporary phenomenon from real-life contexts that aim at understanding complex real-world cases through utilizing multiple sources and guided by related theoretical propositions (Yin, 2018). Similarly, the current study set out to explore teachers' behavior patterns, perceptions, and suggestions regarding the utilization of ChatGPT for teacher professional growth.

Setting and participants

The current study took place within the context of a graduate-level English Language Education program at a public university in Türkiye designed to support the ongoing academic and professional development of in-service and prospective English language teachers. The program offers a range of field-specific courses. The study was conducted with a convenience sample of 11 graduate students majoring in English Language Teaching (ELT) (F=9; M=2) enrolled in the program. All had completed their undergraduate studies, and most were actively working as English language teachers at various educational levels. The participants, all pre-service or novice English language educators actively engaged in both academic coursework and ongoing professional development, were purposefully selected as the focus of the current study. Having completed their undergraduate studies in English Language Teaching, they were positioned to provide critical insights into the integration of AI in language education, owing to their dual roles as MA students and practicing teachers. Demographic details of the participants are presented in Table 1.

Table 1 Participant information

Participant Code	Gender	Age	Teaching Experience	Hometown	Current Status
P1	Female	29	6 years	Sinop	A high school teacher at a public school
P2	Female	25	One-term	Malatya	Inactive
P3	Female	38	16 years	Ordu	An instructor at a state university
P4	Female	24	4 years	Trabzon	A private language teacher
P5	Male	38	17 years	Trabzon	An instructor at a state university
P6	Female	27	5 years	Trabzon	A high school teacher at a public school
P7	Male	32	14 years	Trabzon	A secondary school teacher at a public school
P8	Female	22	One-term	Trabzon	A private language teacher
P9	Female	25	3 years	Bayburt	A high school teacher at a public school
P10	Female	40	11 years	Trabzon	Guiding teachers to devise Erasmus projects
P11	Female	28	6 years	Rize	A high school teacher at a public school

Data collection and procedure

A self-administered questionnaire devised by the researchers was utilized to gather the qualitative data of the current case study. It is a data collection tool that respondents complete on their own at their convenience, without researcher or interviewer help, typically in written or digital form (Bryman, 2012). The researchers preferred self-administered questionnaires for its time and cost-effective nature, absence of interviewer effect and therefore data bias, and the convenience for the participants (Bryman, 2012). The self-administered questions included a total of ten items: four items on demographic information, one item on current teacher behaviors, three items on teacher perceptions towards the role of ChatGPT in teacher professional development, one item on participant suggestions, and one item on future plans. Although the items were presented in Turkish, participants independently selected the codes they used to respond. To enhance transparency and enable replication, the full set of self-administered survey items—translated into English (excluding the demographic section)—is provided below:

1. Have you used, or are you currently using, ChatGPT or any other AI tool for professional development purposes? If so, please describe the specific ways you have used it, providing detailed examples.
2. What are the potential benefits of using ChatGPT or other AI tools for professional development in English language teaching in Turkey? To what extent do you believe AI can positively impact teachers' professional growth? Please explain.
3. What are the potential drawbacks or limitations of using ChatGPT or other AI tools for professional development in English language teaching in Turkey? Do you believe AI may negatively affect teachers' professional growth? Please elaborate.
4. What recommendations would you offer to teacher educators, education faculties, school leaders, and the Ministry of National Education to support the effective use of ChatGPT and other AI tools in the professional development of pre- and in-service teachers?
5. Do you plan to use ChatGPT or other AI tools for your professional development in the future? If so, in which specific areas do you anticipate seeking support?
6. If you were to describe the use of ChatGPT or any AI tool for professional development using a metaphor, what would it be and why?

Data Analysis

Content analysis was used to analyze and interpret the qualitative data. The researchers manually coded the data, identifying the codes, creating the broader and more abstract categories, and themes out of them. They utilized ChatGPT to aid their data analysis, for it has been recently

documented to produce reliable qualitative data analysis (see, for instance, Bijker et al., 2024; Wachinger et al., 2024). ChatGPT functioned as a secondary coder, in that the researchers compared AI-generated codes with those of the manual analysis to review the discrepancies collaboratively. AI served as a complementary tool for the researchers to validate and corroborate the manual coding process.

Findings

The findings are presented in three broad themes in line with the research questions, namely participant behavior patterns, perceptions, and suggestions.

Participants' behavior patterns: Current and future use

The participants were asked whether they were currently utilizing ChatGPT for their professional development, and the self-reported utilization is reported in five broad themes in descending order as follows:

Table 2 Participants' current utilization of ChatGPT

Themes/Categories	Indicators	Participant Codes
Reflective Practice and Professional Development	Utilise AI for reflective teaching and professional feedback as part of a master course	P3, P4, P5, P6, P7, P10
	Use it as a reflective problem-solving and feedback tool for professional development	P1, P2, P4, P7, P8
Academic Support and Research	Support their research	P2, P4, P10
	Generate ideas	P2, P10
	Get language assistance for assignments	P10
Instructional Design and Teaching Support	Devise assessment and evaluation activities	P7, P11
	Adapt and simplify teaching materials	P9, P11
	Devise speaking activities and materials	P4
Administrative Assistance	Carry out administrative tasks such as preparing documents requested by school management	P9, P11
Language Practice	Practice speaking	P4

As is documented in the table above, the participants reported that they utilise it as a critical friend in their reflection as part of a master course. Although they were required to do so, almost half (n=5) stated that they were intrinsically motivated to utilise it to get pedagogical suggestions and feedback to solve their classroom problems. To illustrate, the following excerpts show how this course requirement turned the participants into a motivated reflective practitioner:

I wasn't using it until I started my master's degree. However, after beginning my graduate studies, I started using it due to course content and assignments, though I've only been using it for a short time. I use it while preparing for exams and to get advice on problems I encounter related to my profession. (P7)

I use ChatGPT every day for professional development purposes. When I experience a problem related to my profession, I believe GPT is the tool from which I can get the quickest feedback, and receiving objective feedback without being judged makes me feel happy. For example, I was having problems during lessons because one of my private tutoring students was getting distracted very easily. I already had some knowledge on this issue due to my own experience, but a few methods I tried didn't work. Later, I asked GPT to offer some suggestions on this topic. (P8)

The second area of support is academic in that they are reported to have utilized ChatGPT while devising and writing research assignments, generating ideas, and getting language support while wording their assignments. The following excerpt exemplifies that academic support role:

Yes, I use ChatGPT to get feedback and ideas. Sometimes, ChatGPT is even more helpful than people, and I can write to it anytime, at any hour. Besides that, I use an AI-based website called SciSpace to compile the articles I will use for my research and to get brief information, and I find it useful. (P2)

Still another utilization area was found as instructional design and teaching support. Almost half (n=4) stated that they utilized ChatGPT to devise instructional and evaluation materials or adapt the existing one. The following excerpt shows how the participant utilized ChatGPT to save time to customize the existing materials and get assessment and evaluation support:

Since I struggle with managing my time effectively, I don't always have the opportunity to prepare lessons and do readings. When preparing lessons in a limited time, I need to adjust the lesson content to suit my vocational high school students whose English proficiency is low. For this reason, I copy and paste the reading texts from the Ministry of Education coursebook into ChatGPT and enter commands like: "Convert this into an A2-level English text," "Make it even simpler," "Create 5 questions for this text." Also, because of my administrative position, I often have to read the secondary education regulations. For instance, I ask AI questions like: "According to the secondary education regulations, how many project assignments can be given? Please show the reference in the legislation." "In fact, I could read the regulation myself, but it takes a lot of time. AI shortens the amount of time I spend on such tasks. Sometimes I also upload the written exam questions I prepared into the system and ask: "Can an A2-level student understand and answer this question? If not, simplify it." So I also get help from AI in the process of preparing for exams. (P11)

In addition to their current behavioral patterns, participants were also asked whether they planned to use ChatGPT for their teacher growth in the future. Their current AI use and future plans were almost the same, which fall in five main categories, namely (1) professional development and pedagogical support, (2) research support, (3) instructional design and materials development, (4) AI integration into student learning, and (5) administrative and institutional support. The first theme shows that the participants were planning to get personalized feedback and suggestions on various professional and pedagogical matters (P1, P3, P4, P6, P7, P8, P9), use it as a reliable academic mentor to gain in-depth explanations on unfamiliar topics (P2, P4), and get resource and activity suggestions (P3, P4). On the other hand, some participants reported planning to use ChatGPT to support their academic assignments, such as designing or refining research frameworks (P3, P5, P10), and to receive translation assistance for analysis tasks (P2, P10). Similarly, the third category encompasses future pedagogical plans, including devising instructional materials (P4, P5, P11), preparing slides/academic materials (P11), and developing assessment and evaluation activities (P9). The last two categories encompass plans to incorporate AI tools as resources or materials in student project assignments (P9) and conducting numerous readings related to administrative tasks (P11). The following excerpt illustrates the second broad category, i.e., research support:

I can use it to get feedback on the problems I encounter in the classroom. I can also benefit from it by stating my areas of interest and asking for suggestions on useful resources and activities. Considering that master's and doctoral studies are also part of professional development, I can use it to access new or similar resources in addition to the ones I have found, to get ideas for my assignments, and to get help while designing the research framework. (P3)

Participant perceptions towards the utilization of ChatGPT to grow professionally

The participants were invited to share their perceptions regarding the use of ChatGPT in teacher

professional development. Their responses were overwhelmingly positive, highlighting a range of advantages, as listed in a descending order as follows: devise instructional activities and materials (P2, P3, P4, P5, P6, P7, P8, P9, P10, P11), save much time (P1, P2, P4, P11), get suggestions to solve their problems (P3, P7, P11), promote language skills of teachers (P3, P4, P10), receive personalized feedback (P2, P10), attract students' attention (P8), adapt teaching materials (P4), assess and evaluate their students (P4), and get academic/research assistance (P5). The following excerpt shows participant utilization of AI for instructional assistance:

English language teaching is one of the departments that requires the most materials beyond the official coursebook. ChatGPT is useful for teachers in the field of English language teaching. For example, instead of spending time searching for materials suitable for students' language levels, interests, and needs, a teacher can enter this information into ChatGPT and request sample material. In this way, the teacher can also develop their own ideas. (P9)

The participants were also asked whether ChatGPT could have any negative impact on their professional development as teachers. Only two of them (P6, P8) noted that there were not any negative impacts on teacher development; the others self-reported various concern areas, in line with the existing literature, which could be listed in a descending order as follows: suppress creativity (P2, P3, P4, P7, P9, P10, P11), cause teacher laziness (P1, P3, P7, P9), produce unreliable outcomes (P1, P4, P5, P11), result in overreliance (P2, P4, P10), isolate teachers (P1, P3), lack sensitivity to educational backgrounds (P3, P10), hamper problem solving skills (P7, P10), decrease teacher productivity (P5), violate ethical principles (P4), lack emotional aspects (P4), and hamper critical thinking (P7). The following two excerpts illustrate several of those negativities:

Despite their many benefits, I believe that the convenience offered by AI tools may, in the long run, lead teachers to become lazy, isolated, and overly individualistic. Additionally, since AI tools like ChatGPT can sometimes provide information from unreliable sources, I think those who lack sufficient knowledge to distinguish credible information may contribute to the spread of misinformation. (P1)

When I think about the possible disadvantages, the first thing that comes to mind is that it might lead teachers to become lazy and reduce their creativity. A teacher who gets used to relying on AI tools for everything may eventually find it difficult to generate original ideas, as doing so might start to feel like a burden. Another concern is that AI tools can sometimes give repetitive responses. Over time, this can reduce their functionality. For example, when giving professional development suggestions, it often recommends attending a workshop; however, the teacher's institution or circumstances might not be suitable for that. Moreover, teachers who could socialize and share experiences with their colleagues may choose to use AI instead, leading to a more antisocial attitude and missing out on the valuable and realistic advice and experiences of peers. Ultimately, although AI tools can offer good advice, I don't believe that this advice can replace real human experiences. I find interaction with colleagues very beneficial for professional development. (P3)

To understand participant perceptions better, they were asked to produce a metaphor to describe the role of ChatGPT for teacher professional development. Table 3 summarizes all the created metaphors, their source domains, impact, and entailments.

Table 3 Metaphors created by the participants

Participant Code	Metaphor	Source Domain	Impact Direction	Entailment
P1	Swiss army knife	Tool	Ambivalent	A multifunctional but potentially risky tool in professional development

P2	Kitchen robot	Tool	Ambivalent	Highly functional but dependent on human touch
P3	Navigation device	Tool	Positive	Guidance and support that enhances direction
P4	Having a second brain	Situation	Positive	A complementary second brain that enhances human thinking and perspective
P5	Swiss army knife	Tool	Ambivalent	Powerful and multi-functional, but requiring wise and context-sensitive use
P6	Bag	Object	Positive	Knowledge repository that grows over time through accumulated input
P7	Medicine	Object	Ambivalent	Beneficial when used in moderation but harmful and addictive if overused
P8	Time machine	Tool	Positive	Saves much time
P9	Pencil sharpener	Tool	Positive	Refining and enhancing existing tools to improve performance
P10	Master key	Tool	Ambivalent	Versatile and flexible in unlocking multiple challenges, yet requiring skilled and mindful use.
P11	Torch/Light	Tool	Positive	Providing illumination and support through the fluctuating, sometimes uncertain path of a teaching career

As is seen in the table above, almost half of the participants (n=5) created ambivalent metaphors to describe the role of ChatGPT for teacher professional development. The remaining six participants created positive metaphors. None of the participants created a negative metaphor to describe this role. ChatGPT was mostly associated with a multifunctional tool that could serve well to meet various needs of teachers, yet it requires skilled and mindful use, for the contrary situation may bring about various negativities. To illustrate, the following three metaphors highlight that ambivalent stance:

Using ChatGPT or any AI tool for professional teacher development is like using a Swiss army knife, as Swiss army knives have over 30 functions and hundreds of possible uses. Similarly, ChatGPT offers a wide range of practical and versatile applications. However, just as a knife can be extremely harmful in the wrong or malicious hands, AI can also become dangerous when used beyond educational purposes or when it starts contributing to misinformation. (P1)

Using ChatGPT or any AI tool for teacher professional development is like medicine, for example, a painkiller, because when used appropriately, it solves problems, relieves pain, and provides solutions. However, excessive use leads to addiction and loss of ability. Just as overusing medicine can harm internal organs like the liver and even cause dependency, these AI tools can similarly cause addiction and harm many abilities, especially productivity. (P7)

If I were to describe using ChatGPT or any AI tool for professional development in teaching with a metaphor, it would be a "master key." Because a skeleton key is a flexible tool that can open different locks. Similarly, ChatGPT is used to unlock different "locks" to meet various needs in teachers' professional development. Just as a skeleton key can open multiple locks, these tools provide solutions to different problems teachers face and open new doors on their professional journey. However, just as skillful handling is required to use a skeleton key effectively, it is equally important to use ChatGPT correctly and consciously. (P10)

On the other hand, the following one touches upon the entailment of providing illumination and support through the fluctuating, sometimes uncertain path of a teaching career:

Using ChatGPT or any AI tool for professional development in teaching is like a powerful flashlight illuminating a road with flickering street lamps, which prevents you from falling, because the road with flickering street lamps is used to represent the teaching career. Sometimes in the profession, there are dark periods and sometimes bright ones. Sometimes there are days when we feel completely hopeless, fully dependent, and in need of AI. AI can act like a beam of light, helping us get out of these situations. At other times, during bright

periods, it can metaphorically help us shine even more professionally. For example, it can make prepared activities more attractive and engaging. (P11)

Participant suggestions about the role of ChatGPT to develop teacher professionalism

The participants were further asked whether they had any suggestions for mindful AI utilization in teacher professional development. They almost equally suggested integrating elective courses and workshops into pre-service teacher training (n=8; P1, P3, P4, P5, P6, P9, P10, P11) and in-service teacher training (n=9; P1, P2, P3, P4, P6, P7, P9, P10, P11). On the other hand, two (P5, P7) underlined the importance of training students about the ethical use of AI. One participant (P8) suggested devising an AI platform for teacher collaboration and support. The following two excerpts best exemplify their concern for training teachers about the mindful utilization of AI:

To be honest, seeing people of all ages using AI-supported applications in one way or another makes me a bit concerned. For this reason, I believe that it is necessary to provide training on the correct and effective use of AI within ethical boundaries. Saying “don’t use such a convenient tool” would be meaningless, but providing education on how it should—and even should not—be used would be beneficial. (P4)

In-service training programs can be provided for teachers working in the Ministry of National Education. However, these training sessions should not be planned as one-shot sessions. After delivering the theoretical knowledge, the training should continue in the form of practical lesson design. Elective courses on artificial intelligence and English language teaching can be added to university curricula. Since needs will vary across age groups, different content can be created for children, adolescents, and adults. Effective methods for using artificial intelligence and AI tools should be incorporated into course content. (P11)

Discussion, conclusion, and recommendations

The current case study aims at investigating English language teachers’ behavior patterns, perceptions and suggestions about the role of ChatGPT to develop teacher professionalism. To that end, a case study was carried out involving 11 graduate students pursuing a degree in English Language Teaching (ELT), and the data were collected through a self-administered questionnaire covering ten items on participant behavior patterns, perceptions, and suggestions. It was found that the participants were currently incorporating and planning to incorporate ChatGPT into a wide range of professional practices, with the most common use being reflective teaching and seeking professional feedback. This may result from the fact that they were recently engaged in human and AI-supported reflective practice within a structured master’s course. This is in line with the study of Arefian et al. (2024), who found that ChatGPT could serve as a critical friend or mentor and improve the noticing and reflective thinking skills of in-service teachers.

The participants also highlighted the creative and practical dimension of ChatGPT, as they utilized it to devise instructional materials, conduct their assessment and evaluation routines, and get assistance for their academic tasks and assignments. These findings also support the well-documented benefits of ChatGPT for teachers’ routine responsibilities (e.g., Trust et al., 2023). Interesting, contrary to the study of Tliti et al., (2023), tutor-type utilization was not popular among the participants who did not use it as ChatGPT to get information. This may result from the fact that ChatGPT outcomes could be unreliable (Kohnke et al., 2023; Ulla et al., 2023). Overall, the responses reveal ChatGPT’s role as a multifaceted support tool in teacher professional development. Yet, in line with the well-documented literature, the participants of the current study were found aware of various inherent challenges of ChatGPT (Kartal, 2023; Kohnke et al.,

2023; Tili et al., 2023). However, contrary to the studies of Aydın-Yıldız (2024) and Kartal (2024), the participants did not believe that AI enhances teachers' critical thinking and creativity.

The participants' behavioral patterns, perceptions, and suggestions could be contextualized with interpretations through the lenses of Sociocultural Theory (Vygotsky, 1978), the TPACK Framework (Mishra & Koehler, 2006), and Instrumental Genesis Theory (Rabardel, 1995). It was found that the participants were utilizing ChatGPT for reflective teaching and seeking professional feedback. This aligns closely with Vygotsky's Sociocultural Theory (1978), which posits that learning and growth are mediated and enhanced through social relations as well as various tools and texts. In the current research, ChatGPT seemed to extend their ZPD through encouraging them to reflect upon their practices and offering them pedagogical assistance. Particularly, the dialogues with ChatGPT to get personalized feedback seems to have turned teacher learning into a social one even in solitary settings.

In line with the TPACK framework (Mishra & Koehler, 2006), the participants demonstrated the development of emerging Technological Pedagogical Knowledge (TPK) through their growing familiarity with AI tools and platforms. Their use of these technologies to generate instructional content indicated the acquisition of Technological Content Knowledge (TCK), as they reported using AI to deepen their understanding of subject matter and to design relevant, customized activities, tasks, and materials. Furthermore, their application of AI in interactive classroom tasks and engagement strategies reflected further growth in TPK, particularly in terms of enhancing teaching methods. Participants' self-reports also revealed that AI tools contributed to their professional development by enabling them to strategically integrate technological, pedagogical, and content knowledge in both instructional planning and classroom practice—effectively using AI as a teaching and learning assistant.

Lastly, these findings strongly support the Instrumental Genesis (Rabardel, 1995), in that the participants were found to utilise ChatGPT actively rather than passively. Rather than asking for ready materials, they were found to appropriate the tools to meet their specific professional needs meaningfully, which highlights teacher agency.

Based upon those findings and the suggestions the participants offered, several pedagogical implications could be offered. The participants agreed on the importance of AI-empowered ELT, and therefore they suggested integrating elective courses into pre-service teacher training and promoting awareness and skills of in-service teachers. However, as noted by Trust et al., (2023), integrating elective courses as single subjects to pre-service training cannot ensure that teachers would adopt and utilise it in the future. Therefore, a more sustainable and effective approach should be adopted to embed AI-related competencies across the entire teacher education curriculum. Additionally, in-service teachers need to be offered continuous professional development opportunities to foster teacher self-confidence. Those trainings need to raise their awareness of the inherent challenges and ethical AI use in pedagogy (Kasneci et al., 2023; Trust et al., 2023).

The findings also showed that the requirements of a master course on reflective practice, i.e., engaging in a reflective cycle supported by peers, AI, and faculty experts, increased the participants' awareness of the dynamic and active utilization of ChatGPT rather than passive one. Therefore, teacher educators need to devise such purposeful tasks that help pre- and in-service teachers experience how to appropriate AI meaningfully to have sharpened noticing and critical

thinking skills.

Limitations and future directions

Lastly, the current study is not without its limitations. The small sample size and the utilization of a single data gathering instrument do not allow the researchers to generalize their findings to broader populations. Therefore, similar studies with more robust study designs could be conducted to explore the issue holistically. Besides, studies comparing teachers' perceptions and practices could help explore the underlying factors supporting or hindering effective AI utilization in foreign language pedagogy, which could help more targeted and practical recommendations for teacher training and policy-making.

Statement of researchers

Researchers' contribution statement

This study was a result of equal collaboration between the authors. Both the first and second authors contributed equally to the conceptualization, data collection, analysis, and writing of the manuscript.

Conflict statement

The authors declare that there is no conflict of interest regarding the publication of this article.

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