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Unlocking the Potential: Attitudes of Tertiary Level EFL Learners Towards Using AI in Language Learning

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In the current era of rapid change in which AI has become inevitable in foreign language education as in many aspects of life, this study, which aims to examine EFL learners' attitudes towards AI and to analyse its future potential, was conducted with the participation of 772 English preparatory year students studying at A2, B1, and B2 levels in the schools of foreign languages of a state and a private (foundation) university in Türkiye. The data for the study were collected online through an attitude scale (MALL:AI) and an open-ended survey question. Quantitative results revealed that the participants had moderate attitudes towards the use of AI in EFL learning, with no clear tendency towards positive attitudes. While university type and gender were not found to be significant determinants of attitudes, engineering and natural sciences students showed more positive attitudes towards AI in EFL learning than those in the humanities and social sciences. In terms of proficiency level, A2 level participants reflected lower attitudes in the behavioural factor than B1 and B2 levels. Qualitatively, it was found that students had overwhelmingly positive perspectives on the use of AI, shared some negative approaches with reservations, and offered concrete suggestions for the integration of AI into ELT. With its intriguing findings, the present study sheds light on further studies and paves the way for educational administrators and EFL instructors to better make use of AI in language education.

Introduction

In the past several decades, newly developed digital technologies have become practical and scientific areas of focus in English language teaching (ELT) (Schmidt & Strasser, 2022), as the use of mobile technology has redefined the language learning environment by replacing traditional techniques with more interactive and personalised ways (El-Hussein & Cronje, 2010; Kuhail, Alturki, Alramlawi, & Alhejori, 2023). The incorporation of artificial intelligence (AI) in the realm of foreign language instruction has emerged as a crucial and rapidly growing area of research. According to researchers, AI has the potential to customise learning environments and enhance the effectiveness of learning

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and teaching English as a foreign language (EFL) (Grassini, 2023). Recently, researchers, educators, and IT specialists have been investigating the use of AI tools in foreign language education to enhance the efficiency and involvement of teaching and learning by integrating AI technology based on large language models (LLM) (Bonner, Lege, R., & Frazier, 2023). In that sense, the studies conducted by scholars such as Aydın Yıldız (2023), Fast & Horvitz (2017), Yilmaz, Maxutov, Baitekov and Balta (2023), and Suh and Ahn (2022) aimed to explore the possible impacts of AI and the opinions of both the general public and academia, particularly students, regarding the increasing use of AI tools by university students to enhance their language learning. Language learners' acceptance and habitual use of AI are overwhelmingly influenced by their attitudes towards this innovative technology, as they tend to quickly embrace positive advancements in new technologies (Sindermann et al., 2021).

As with all other learning processes, attitude is considered to be one of the most influential factors in foreign language acquisition. More specifically, there is evidence that the habitual use of technology has a significant impact on tertiary-level foreign language learning performance besides shaping their attitudes in a positive direction (Bohner & Dickel, 2011; Suh & Ahn, 2022; Tafazoli, Gómez Parra, & Huertas Abril, 2019). Furthermore, in their studies on the attitudes of EFL learners towards AI, Yilmaz et al. (2023), and Zou, Liviero, Hao, and Wei (2020) among others, discovered that students were actively motivated and enthusiastically engaged in the learning process, notwithstanding the challenges they faced and the restricted availability of AI tools. It is also known that while certain individuals demonstrate a positive attitude and admiration towards the cutting-edge AI-powered educational resources, others voice apprehensions regarding the possible disadvantages and constraints (Chomsky, 2023; Grassini, 2023; Hockly, 2023). By comprehending the attitudes and views of learners regarding language learning and utilising digital skills in this direction, it becomes possible to establish an appropriate language learning process that supports the adoption of technology-based pedagogy and the utilisation of digital applications for language instruction and learning. Thus, in order to successfully develop AI-integrated learning environments that cater to the preferences and requirements of learners and assess their viewpoints, it is imperative for educators and developers to comprehend these attitudes (Aydın Yıldız, 2023; Sindermann et al., 2021).

Literature Review

In the literature, it has been demonstrated that attitudes towards learning EFL and the integration of technology into the learning process can be broken down into several factors. These factors include cognitive components, which consist of beliefs about conditions related to attitudes; an affective construct, which involves expressing and evaluating feelings that arise about cognitive elements; and a behavioural component, which encompasses specific learning behaviours implemented by the learners (Masgoret & Gardner, 2003). There exists a correlation between these perspectives on CALL and foreign language acquisition (Erdem, Saykili, & Koçyiğit, 2018). It is, therefore, possible to conclude that a strong correlation among these three factors is fundamental to the effective implementation of language learning and the utilisation of technology, specifically AI, in the context of this research. As a matter of fact, comparable elements categorised as communicative, behavioural, and cognitive were underscored in the study in which Aydın Yıldız (2023) constructed the MALL:AI scale used through this very research.

Previous studies have established that computers and the internet have a substantial impact on the adoption and utilisation of emerging information technologies by students. However, the

efforts to evaluate the attitudes of EFL learners focused predominantly on CALL and MALL through the analyses of quantitative and qualitative data obtained by overall questionnaires, surveys, semi-structured interviews, observations, or solely the review of the literature (Schepman & Rodway, 2020; Sindermann et al., 2021; Suh & Ahn, 2022; Tafazoli et al., 2019; Yilmaz et al., 2023). To this end, as language learners prefer to embrace the advancements in new technologies positively, their initial adoption of AI is predominantly influenced by their attitudes towards the technology (Sindermann et al., 2021).

The extant corpus of literature concerning AI in language learning emphasizes the profound capacity of diverse AI tools to affect change (Bonner et al., 2023; Topsakal & Topsakal, 2022). In this regard, Ojeda-Ramirez et al. (2023) assert that, in conjunction with metacognitive reflections, the effective use of AI provides personalised language learning experiences that are both dynamic and context-aware, tailored to the specific requirements of each user. The effectiveness of AI tools in delivering customised and adaptable language learning experiences has been demonstrated in numerous studies, as prior research on the benefits and drawbacks of AI in language learning provides the framework for comprehending the perspectives of tertiary-level EFL education (Hockly, 2023). Moreover, as theories and literature point to the fact that attitudes are shaped by experiences and vary over time and context, it turns out to be a fundamental necessity to investigate the attitudes of learners in different settings in order to ensure successful integration of AI into learning foreign languages at higher education level (Hockly, 2023; Phan, 2023; Wang, Chai, & Zhou, 2023; Yeh et al., 2021; Yilmaz et al., 2023).

Theoretical Frameworks

Undoubtedly, the adaptation and application of AI in the realm of language acquisition have been shaped by a multitude of frameworks and theories. Self-Determination Theory, coined by Deci & Ryan (1985), is an influential theory placing significant emphasis on the learning process through the lens of autonomy, competence, and relatedness. AI-supported language learning platforms have the capacity to nurture learners' independence by granting them control over the speed and subject matter of their studies (Fathali & Okada, 2017). Simultaneously, these platforms offer avenues for competency enhancement via tailored feedback and adaptive learning trajectories. (Chiu, Moorhouse, Chai, & Ismailov, 2023). Nevertheless, these theories and frameworks fall short of providing a comprehensive examination of the attitudes held by EFL learners, especially at the tertiary-level. Therefore, by applying Expectancy-Value Theory (EVT) to the investigation, a more comprehensive insight could be gained regarding the manner in which university students perceive AI as a relatively recent technological instrument in their language learning endeavours. Exploring the determinants of learner motivation and engagement, EVT has been implemented in a variety of educational contexts, including the learning and teaching of EFL (Wigfield & Eccles, 2000). When the theory is applied to AI-assisted language learning, it takes into account the expectations of learners concerning the efficacy of AI tools and the worth they assign to these tools in relation to attaining their language learning objectives. It is critical to comprehend these cognitive processes in order to forecast the EFL learners' attitudes and patterns of adoption (Wang et al., 2023).

The Integrated Model of Technology Acceptance (IMTA), derived from the Technology Acceptance Model (Davis, 1989), has also been employed to investigate individuals' attitudes and willingness to adopt AI tools and technologies in language learning (Zou et al., 2023). The TAM model, a robust paradigm for forecasting humans' acceptance of new technologies,

centres around the link between attitude, intention, and behaviour. According to Davis (1989), attitude pertains to the degree to which individuals are interested in and favourably evaluate the use of particular technologies. TAM offers a framework to examine the elements that influence learners' willingness to adopt AI as well. Within the realm of AI in language learning, TAM aids in comprehending a variety of factors that impact learners' attitudes and intentions towards using these cutting-edge technologies (Lin, Ho, & Yang, 2022). It has been highlighted in recent studies that the notions of perceived ease of use and perceived utility, which, together, ultimately result in forming positive attitudes, play a crucial role in the overall acceptability of AI in language learning (Liu & Ma, 2023).

The Current Study

All these theoretical propositions as well as the existing literature eventually lead to the point that awareness about students' attitudes towards computers can serve as a crucial criterion for the introduction, assessment, and evaluation of computer-related learning processes (Edmett, Ichaporia, Crompton, & Crichton, 2023). That is why attitudes towards AI, the cutting-edge technological instrument of the digital age, should be regarded as crucial constructs when examining attitudes towards future technology. Hence, the present study aims to uncover the attitudes of higher education EFL learners towards using AI in their language learning processes, and to gain deeper insight into their perspectives on the future of AI in EFL learning. In light of the research objectives, the present study seeks to answer the following research questions:

(1) What are the attitudes of tertiary EFL learners towards the use of AI in language learning?
(2) Do the attitudes towards using AI in language learning differ in terms of;

    (a) the type of the institution (either a state or a private university)?

    (b) the gender of the EFL learners?

    (c) the department of the EFL learners?

    (d) the language proficiency level of the EFL learners?

(3) How do the participants perceive the potential of AI in English language learning in the future?

Method

Research design

This study mainly adopts an explanatory quantitative research design to uncover the existing attitudes of tertiary level EFL learners in terms of several variables. However, it also utilizes qualitative data obtained through a structured open-ended question, which turns the research into a mixed-method study, in which both quantitative and qualitative data are collected and analysed in an attempt to better fulfil the research objectives (Creswell, 2003). The qualitative data in the present study serves to gain a deeper insight into the overall purpose of the research as well as seeking answers to the last research question.

Setting and Participants

The context of the study consisted of two English preparatory programs at a state and a private (foundation) university located in two different metropolitan cities in order to gain insights into two distinct profiles of tertiary EFL learners. Both institutions comply with the foreign language teaching framework and regulations mandated by the Council of Higher Education (CoHE) in Türkiye, and adopt similar EFL teaching curricula based on CEFR objectives and proficiency levels. Likewise, in both institutions, the EFL learning process is supported and supplemented through educational technologies and online learning tools integrated into the curricula, such as in-class devices and software, online learning platforms, and digital materials. The participants for the present study were selected on a voluntary basis through the convenience sampling method. Yet, there was a simple criterion for exclusion; those who had no prior contact with generative AI tools or who had no sufficient idea of how to use AI in language learning were not included in the study. In the end, a total of 772 participants (388 females and 384 males) provided quantitative data for the study, and 116 of them answered the open-ended question, which was particularly intended to answer the last research question. The demographic profile of the participants in terms of the independent variables selected for the study is summarized in Table 1.

Table 1. Descriptive statistics of the participants split by the university type

University Type	Group	*f*	%
	Private	366	47.4
	State	406	52.6
	Total	772	100
Gender			
Female	Private	204	26.4
	State	184	23.8
	Total	388	50.2
Male	Private	162	21.0
	State	222	28.8
	Total	384	49.8
Domain			
Engineering and Nature Sciences	Private	121	15.7
	State	274	35.5
	Total	395	51.2
Humanities and Social Sciences	Private	245	31.7
	State	132	17.1
	Total	377	48.8
Proficiency Level			
A2	Private	162	21.0
	State	95	12.3
	Total	257	33.3
B1	Private	134	17.4
	State	177	22.9
	Total	311	40.3
B2	Private	70	9.1
	State	134	17.4
	Total	204	26.5

Instruments and data collection

The quantitative data for the study were collected online through 'The Attitude Scale of Language Learning with Artificial Intelligence (MALL:AI)' which was developed by Aydın Yıldız (2023) as a valid and reliable instrument to measure the attitudes of university level language learners towards utilizing AI tools during the language learning process. The scale consists of 15 items under three main factors as 'communicative', 'behavioural', and 'cognitive'. Upon receiving the Ethical Committee Approval and institutional permissions, the scale was sent to the participants via an online form, which also contained an 'informed consent form', a 'demographic information' form, and an open-ended question as "How do you perceive the current and future potential of AI-supported applications in language learning?" in an attempt to elicit the participants' perspectives on the potential of AI in language learning. The Cronbach's Alpha value yielded from the reliability test for the 15-item scale was calculated as $\alpha = .84$, revealing a high level of reliability within the context of the present study. As for the qualitative data, in order for the reliability of the analyses to be assured, the data were initially analysed independently by the two researchers, and a third coder, who is an expert in qualitative methodology, also analysed randomly selected 20% of the data. The discrepancies were then negotiated, and the analyses were finalized in consistency with the defined criteria in the relevant literature (O'Connor & Joffe, 2020). It is also worth noting that all the data were collected in Turkish, which is the native language of the participants, and then relevant responses were translated and cross-checked by both researchers.

Data Analysis

In order to determine the statistical tests to analyse the research data, normality tests were run on all the variables, and it was found that the skewness and kurtosis values ranged between the values of ±1.5. As the normality test results complied with the assumption of a normal distribution (Tabachnick & Fidell, 2013), parametric tests were carried out to analyse the data. In this regard, along with the descriptive statistical tests, Independent Samples T-Tests were calculated to find out the difference between the attitudes of foreign language learners in terms of their university type, gender, and departmental domain. As for the difference between the attitudes in terms of proficiency levels, One-way ANOVA tests were carried out. To identify the variables where the significant differences occurred, Tukey's HSD post hoc comparison test was run.

As for the qualitative data, content analysis technique was utilized as a qualitative data analysis method to identify the recurring codes, the categories under which the relevant codes were collected, and the major themes revealing the overall perspectives of the respondents. In this regard, the procedure outlined by Braun and Clarke (2006) was adhered to. This procedure entailed reviewing the texts and creating initial annotations to become familiar with the data. Descriptive phrases were used to code, categorise, and organise the data using the ATLAS.ti qualitative data analysis software. This led to the identification of comprehensive and explanatory academic themes. The accuracy and appropriateness of these themes in representing the collected data were also ensured. Due to confidentiality concerns, the respondents were labelled as Participant X (P1, P2, P3, etc.) throughout the study.

Results

Quantitative results

With the purpose of comparing the attitudes of EFL learners, studying at a state university (M = 2.10, SD = .36) and a private university (M = 2.09, SD = .42), towards the use of AI in language learning, Independent Samples T-test was calculated and the results showed no statistically significant difference between the groups, $t(770) = -.25$, $p = .801$. Likewise, university type did not appear to be a significant determinant of attitudes towards AI in language learning in the 'communicative', 'behavioural' and 'cognitive' domains (Table 2).

Table 2. Independent samples T-test results for attitudes between university types

	Group	*N*	*M*	*SD*	*t*	*p*	*d*
Attitude Overall	Private	366	2.09	0.42	-0.253	.801	-0.018
	State	406	2.10	0.36			
Communicative	Private	366	1.97	0.50	-1.226	.22	-0.088
	State	406	2.01	0.42			
Behavioural	Private	366	2.42	0.42	-1.304	.193	-0.094
	State	406	2.46	0.43			
Cognitive	Private	366	2.06	0.51	1.797	.073	0.130
	State	406	2.00	0.42			

The measurements also indicated that there was no significant effect for gender, $t(770) = -1.336$, $p = .182$, although males (M = 2.11, SD = .38) reported slightly more positive attitudes towards using AI in LL than females (M = 2.08, SD = .40).

Table 3. Independent samples T-test results for attitudes between genders

	Group	*N*	*M*	*SD*	*t*	*p*	*d*
Attitude Overall	Female	388	2.08	0.40	-1.336	.182	-0.096
	Male	384	2.11	0.38			
Communicative	Female	388	1.97	0.47	-1.619	.106	-0.116
	Male	384	2.02	0.46			
Behavioural	Female	388	2.45	0.42	0.186	.853	
	Male	384	2.44	0.43			
Cognitive	Female	388	2.01	0.46	-1.227	.220	-0.088
	Male	384	2.05	0.46			

Another round of Independent Samples T-test revealed that whether the participants were enrolled in a department under the engineering and nature sciences (M = 2.11, SD = .34) or the humanities and social sciences (M = 2.08, SD = .44) domains made no significant difference in their overall attitudes towards AI use in language learning, $t(770) = .806$, $p = .420$ (Table 4). Although no significant differences for departmental domains were obtained in the communicative and cognitive sub-factors, when compared to the humanities and social sciences domain (M = 2.41, SD = .45), the engineering and nature sciences group (M = 2.48, SD = .40) demonstrated significantly higher attitudes towards the use of AI in LL in the behavioural attitudes sub-factor, $t(770) = 2.469$, $p < .05$. In other words, the participants who were enrolled in engineering or positive sciences departments had more positive behavioural

attitudes than those registered in departments under the humanities and social sciences domain.

Table 4. Independent samples T-test results for attitudes between domains

	Group	*N*	*M*	*SD*	*t*	*p*	*d*
Attitude Overall	Eng&Nat	395	2.11	0.34	0.806	.420	0.058
	Hum&Soc	377	2.08	0.44			
Communicative	Eng&Nat	395	2.02	0.41	1.721	.086	0.124
	Hum&Soc	377	1.96	0.51			
Behavioural	Eng&Nat	395	2.48	0.40	2.469	.014	0.178
	Hum&Soc	377	2.41	0.45			
Cognitive	Eng&Nat	395	2	0.41	-1.72	.086	-0.124
	Hum&Soc	377	2.06	0.51			

In order to explore the effects of foreign language proficiency levels on the learners' attitudes towards AI use in LL, One-way ANOVA test was done to compare means of attitudes, and the results are presented in Table 5. The calculations showed that proficiency level did not function as a significant determinant of the overall attitudes of the EFL learners towards AI in their language learning process, $F(2,769) = .780$, $p = .459$. However, unlike the other two, proficiency level turned out to have a significant effect on behavioural attitudes $F(2,769) = 10.602$, $p < .001$.

Table 5. One-way ANOVA test results for attitudes across proficiency levels

		N	*M*	*SS*	*df*	*F*	*p*	*Sig. Dif.*
Attitude Overall	1-A2	257	2.07	.243	2-769	.780	.459	
	2-B1	311	2.08					
	3-B2	204	2.12					
	Total	772	2.09					
Communicative	1-A2	257	1.99	.103	2-769	.237	.789	
	2-B1	311	1.98					
	3-B2	204	2.01					
	Total	772	1.99					
Behavioural	1-A2	257	2.35	3.806	2-769	10.602	.000	1-2
	2-B1	311	2.46					1-3
	3-B2	204	2.53					
	Total	772	2.44					
Cognitive	1-A2	257	2.03	.094	2-769	.215	.806	
	2-B1	311	2.01					
	3-B2	204	2.03					
	Total	772	2.02					

Post-Hoc comparisons employing the Tukey HSD test with Bonferroni correction showed that the attitudes of A2 level participants ($M = 2.35$, $SD = .45$) towards using AI in LL were significantly lower than those of the B1 level participants ($M = 2.46$, $SD = .42$). Likewise, it was seen that the means scores for the attitudes of A2 level language learners ($M = 2.35$, $SD = .45$) were significantly lower than those of the B2 level participants ($M = 2.53$, $SD = .39$). However, the attitudes of B1 and B2 level students towards the use of AI in LL did not significantly differ according to the post hoc test results. In other words, it can be concluded from the results that the higher the language proficiency levels of the participants were, the more positive attitudes they possessed.

Qualitative findings

The analysis of the data through in vivo and descriptive coding yielded 24 diverse codes compiled under 12 categories and summarized as 4 major themes, which made it obvious that participants had a variety of perspectives on the future potential of AI in EFL learning in higher education. Table 6 enlists the codes, categories, and themes in the order of frequency, with relevant sample references to the respondents.

Table 6. Themes, categories, and codes regarding the participants' views on AI in ELL

Themes	Categories	Codes	*f*
Positive views of EFL learners on the use of AI in language learning	Practicality	Usefulness	21
		Ease of use	11
		Accessibility	6
	Instruction	Accelerated learning	13
		Supportiveness	14
		Facilitator	5
	Autonomy	Personalized learning	5
		Feeling comfortable	5
	Interaction	Communicativeness	5
Reservations of EFL learners regarding the use of AI in language learning	Teacher's role	Teacher's irreplaceability	14
		Discipline	1
	Interaction	Lack of real communication	5
	Nature of AI	Need for improvement	5
		Temporary popularity	3
		Ethical considerations	1
Negative views of EFL learners regarding the use of AI in language learning	Emotional	Insincerity	2
		Isolation	1
	Cognitive	Limited perception	2
	Social	Overrated	3
		Cost	1

Overwhelmingly highlighting various potentials and benefits of the use of AI tools in foreign language learning, the participants' responses were coded and categorized under the main theme 'positive views of EFL learners on the use of AI in language learning' in terms of 'practicality', 'instruction', 'autonomy', and 'interaction'. To begin with, codes categorized under 'practicality' pointed to the usefulness and efficiency of AI technologies in language learning. The extracts from the responses exemplify the positive views related to the aforementioned categories.

The following lines from P10 and P79 clearly illustrate the 'practicality' of AI by emphasizing the 'usefulness' of and 'ease of access' to AI tools.

> Even now, it is very helpful to students. It can renew itself day by day according to the questions of users and appeal to more people. As the number of people using it increases, AI will collect more data about English learning and become more useful. (P10)
> We have already been using many technologies in our English classes. I am sure that it [artificial intelligence] will be used much more in the future in terms of ease of access, whenever we want, and being more involved in technology every day. (P79)

In terms of instructional potential of AI, P95 comes up with strong remarks referring to several language skills such as speaking, listening, and reading.

> AI reinforces learning with many visuals and videos. Speaking activities are more fluent and easier than in the school environment. It contains understandable texts for listening. In terms of reading, there are also applications in virtual books that make it easier to show the meaning of a word when you do not know it. I use these in my educational life. I find them very useful. Its potential is very high. (P95)

Another participant draws on the supportive role of AI in language teaching and learning for both teachers and students.

> I think AI is a good thing for both students and teachers. Teachers will still be necessary in the future, but their job seems to be easier. It is very useful to access more content with AI both in and outside of classes and to be exposed to English in our own studies. (P73)

P11 states that AI also contributes to learner autonomy by allowing the students to choose their own path to learning.

> I think this [artificial intelligence] is inevitable for the future. We cannot ignore this reality. While teachers cannot easily change their own teaching style, I think that giving a student the freedom to choose this way of learning will accelerate language education. (P11)

Besides personalization of the language learning process, another respondent brings forth the affective dimension of autonomous learning.

> Language learning with AI will definitely be inevitable. It will be much more useful for students with anxiety like me. The functional contribution of AI is undeniable in an online system where only theory and practice can be done entirely online. I believe that the use of AI will improve us a lot, as it allows us to communicate more easily and make mistakes recklessly since we are dealing with a robot, not a human. (P116)

As for the communicative benefit of AI in language learning, one of the respondents mentioned an excess of teacher talking time, which appears to be an undesirable situation in many language classes, and pointed to the usefulness of AI tools in improving communicative skills.

> Using artificial intelligence while learning a foreign language is good in terms of interaction because the teacher can be the one who talks more during the lessons. AI requires mutual correspondence, as we cannot get a response without entering the content. (P51)

Along with the positive views of EFL learners regarding the use of AI, a considerable number of reservations are also expressed by the participants. Rather than being rooted in negative views and thoughts on AI, these reservations were clearly accompanied by positive perceptions. In other words, the participants revealed their concerns while expressing optimism about the potential of AI in language learning. As it is presented in Table 7, the concerns are mainly centred around the role of the teacher in the age of AI and the nature of AI in its current form.

The most recurrent code in this category appeared to be the 'irreplaceability of teachers' in the future. As it is evident in the following extracts, EFL learners in the present study strongly believed that it is highly unlikely that real teachers will be displaced by AI technologies in the future of foreign language education.

> AI will be useful in determining a person's success, shortcomings, and strong aspects, but I do not see it possible for it to meet all the functions of a teacher and the classroom environment on its own. I see it positively in using classical education as a supporting model. (P87)

Another outstanding code within the category of 'interaction' emerged as the lack of natural or human-like communication with AI tools. This issue is stated by a participant as follows:

> Although it is theoretically possible to provide more detailed information, it cannot be expected to be more advanced than a human in practice. After all, language is a phenomenon that emerged to enable human communication with humans, so AI can be supportive to some extent, but it should not be expected to replace talking with a human. (P110)

An active user of AI based large language models quotes that AI needs to be improved in several ways to meet the needs of language learners, and further alterations to existing models or new platforms could meet the needs.

> I use AI, I'm talking about ChatGPT here, quite often to translate English into Turkish. As an active user of the GPT4 model, which is the latest publicly available model, I can say that ChatGPT is not currently sufficient in terms of grammar, but it is a very helpful tool in understanding what we want to say and easily adding personality to the text we want to translate or create. These restrictions can be removed with a special AI tool trained only on grammar or a new LLM trained only on language education. (P11)

Some participants noted that AI has been enjoying a 'temporary popularity' in society and in many fields like many other technologies.

> I think comparing AI and real teachers is not good; they are different things, but both are necessary. To me, the popularity of AI will decrease in the future. Everyone seems to be taking a look at it out of curiosity right now. (P56)

Though verbalized only by one respondent 'ethical considerations' was another code regarding 'the nature of AI'. The statement of P113 as "*AI is good when learning English, but I think it has ethical problems*" clearly indicates that she has a positive stance for using AI in language learning but still takes ethical issues into account without going further into detail.

In short, the responses analysed so far suggest a nuanced view acknowledging the participants' positive aspects while also recognizing limitations or concerns. Thus, it was possible to reach the theme that university students endorse the potential of AI to complement traditional teaching and learning methods in EFL classes, but express reservations about its ability to fully replace human teachers, emphasizing the irreplaceable role of educators in fostering meaningful learning experiences. Also, quite a few EFL learners expressed ethical concerns about AI integration in language learning, emphasizing the importance of maintaining genuine connections and meaningful interactions between learners and educators.

Finally, a number of participants highlighted the need for continuous development and adaptation of AI technologies in language learning, stressing the importance of addressing challenges, refining algorithms, and ensuring the ethical and responsible use of AI in educational contexts.

On the other hand, some perspectives which were not so positive were also visible in the data. Although less frequent, participants also expressed some negative sentiments towards the potential of AI in language learning. To this end, the main theme was yielded as 'negative views of EFL learners regarding the use of AI in language learning', and the codes emerged were categorized under emotional, cognitive, and social domains. The codes such as 'overrated', 'cost', 'isolation', 'limited perception' of AI, and 'insincerity' highlighted concerns about AI technology being overhyped, expensive, potentially isolating, difficult to understand, and lacking sincerity in interactions. To exemplify, there were responses such as "*I think AI is highly overrated. These artificial intelligence tools are useless without human intelligence. I personally do not think very positively*" (P111), "*It might be useful if it wasn't costly*" (P23), "*I think the use of AI will shape the future of education, but it is not good if one is not isolated from society*" (P54), and "*AI will never be able to replace a teacher in terms of sincerity, perception, and communication. Sometimes it cannot even understand simple commands*" (P9).

Lastly, the vast amount of data from students brought in a number of recommendations for maximizing the potential of AI in language learning in higher education. These recommendations were collected and analysed under a separate theme as "recommendations on the use of AI in EFL learning" as demonstrated in Table 7.

Table 7. Themes, categories, and codes regarding the participants' recommendations

Theme	Categories	Codes	*f*
Recommendations on the use of AI in language learning	Training	Orientation of users	3
	Policy	Tailored curriculum	3
		Integration	2

In this regard, the relevant codes 'information sharing', 'integration', 'tailored curriculum' were associated with the training of potential users on utilizing AI technologies for educational purposes and educational policies to be restructured in the light of current AI tools, and applications in order to take advantage of this trending technology. The excerpts below refer to the recommendations coded under this category.

> Maybe not much at the moment, but considering the pace of development of AI, I think it is inevitable that it will reach the level of a teacher in a few years, and perhaps even reach the level of working more usefully and efficiently. I think that in the coming years, people in the field of foreign languages in the education sector will need to adapt to this development, and it may become a necessity for them to stand out by developing in AI systems and their use. (P72)
>
> A new course titled "How to use AI" should be added for students starting from middle school, and children should be taught how to use AI for their own development. The biggest responsibility for the use of AI among students in a way that is beneficial to them falls on parents and schools. (P96)
>
> Although there is a partial increase in the success of language learning with AI, many errors also come to the fore. If these errors are eliminated, over time, language learning with AI will be a useful way, although it is not as functional as learning from a teacher. (P8)

In conclusion, the qualitative data analyses highlight the multifaceted nature of AI and reflect the diverse perspectives and considerations surrounding the potential of AI in language learning, encompassing both optimism in terms of various aspects and reservations, particularly regarding the role of human teachers and the potential limitations of AI technology as well as recommendations for future implementation and development. While the majority of codes emerged in the data analysed reflected positivity, there were also instances of negativity and reservations. The recommendations provided by participants offer valuable insights for stakeholders to consider for optimizing AI integration in language education in universities.

Discussion

In the present study, it was found that the attitudes of the participants towards using AI in EFL learning did not differ significantly in terms of the university type, and the attitudes appeared to be moderate with no clear tendency towards positive feelings. These findings were in line with a recent study by Edmett et al. (2023) who also exhibited a considerable amount of scepticism towards the potential of AI in language teaching among the EFL teachers in Japan. On the other hand, the findings of the current research seem to contradict several other studies (Liu & Ma, 2023; Yilmaz et al., 2023; Zou et al., 2020) asserting that EFL learners demonstrate overwhelmingly positive attitudes towards making use of AI tools in their language learning process. Due to the similar paths they covered during their pre-university education, the student profiles of the both state and private universities in the present study might have shown similar attitudes towards the potential of AI in language learning. Moreover, since experiences shape attitudes (Wang et al., 2023; Wigfield & Eccles, 2000), the participants in both groups might not have had sufficient amount of experience with AI yet, and as Iqbal, Ahmed and Azhar (2022) also suggest, this situation might have influenced their current attitudes in the study.

As another independent variable, gender did not have a significant impact on the attitudes towards AI in EFL learning. This finding contradicts the assumption that gender can occur as a factor influencing attitudes towards AI since experiences can vary depending on gender (Yilmaz et al., 2023). On the other hand, despite not specifically aiming to measure attitudes towards AI, the study by Tafazoli et al. (2019) also suggests that gender is not a determinant of attitudes towards using new technological tools and practices in language learning. In the context of the present study, gender may not have alternated attitudes significantly since the participants were all ‘digital natives’ (Prensky, 2001), and they had similar tendencies towards embracing new developments and technologies regardless of their genders.

In the literature, it is suggested that the departments or majors of the learners lead to significant differences in their attitudes towards the use of AI (Asio & Gadia, 2024). Similarly, the participants enrolled in engineering and nature sciences majors showed significantly more positive behavioural attitudes than those enrolled in humanities and social sciences departments in the present study. Though not identical with the current one in terms of its scope and purpose, another study in the literature (Yeh et al., 2021) also revealed departmental differences in the perception of AI among university students. They concluded that the participants in the business departments favoured AI significantly more than those in the humanities departments. It should, however, be noted that the participants in the present research have not started studying in their departments yet, but they might still have a tendency to reflect the attitudes attributed to their departments. That is why it might be expected that the EFL learners enrolled in engineering and other positive sciences majors will

demonstrate more positive attitudes towards using AI in learning English due to the possible factors of interest, familiarity, or experience (Iqbal et al., 2022).

This study has also come up with the finding that the proficiency level of the EFL learners played a significant role in determining their behavioural attitudes towards AI use in language learning. To be more precise, B1 and B2 level participants showed significantly more positive behavioural attitudes than the participants in A2 level, while there was no clear difference between those in B1 and B2 levels. Given the fact that A2 level learners were more preoccupied by simpler course contents and tasks, they might have shown lower attitudes towards using AI in their studies. On the other hand, higher level students' positive attitudes can be attributed to their expectations of success (Eccles & Wigfeld, 2020), which turn out to be predictive in explaining their inclinations towards making use of AI in learning English. In the literature, there is also contradictory evidence on the effect of the proficiency level on learner attitudes. For instance, Yoon (2019) investigated the perspectives on AI by collecting data from 310 university students at various levels. The researcher discovered that the individuals exhibited both interest and perceived utility in AI, while simultaneously experiencing a sense of threat. Significant disparities were observed among proficiency levels. There was a general tendency for beginners to be the most positive, followed by intermediate, then advanced to be the least positive towards AI in language classes. The contradictory evidence between Yoon's (2019) study and the present one might have resulted from contextual factors such as the research settings or the curricula adopted in the given settings.

Within the scope of the current study, qualitative findings suggest that the respondents predominantly emphasize the advantages or benefits of using AI in the EFL learning process. While there is no clear inclination towards positive attitudes in the analysis of the quantitative data, a deeper analysis of the open-ended responses reveals overwhelmingly positive remarks such as usefulness, speed, supportiveness, ease of use, and accessibility. In their study with 405 EFL learners, Liu and Ma (2023) similarly draw on the significance of 'perceived usefulness' in determining EFL learners' attitudes and emphasize the potential of AI as an effective tool for learning English. Gallacher, Thompson and Howarth (2018) also came up with positive attitudes towards using AI in L2 learning, with a special emphasis on the mobile accessibility of AI tools and the independent learning opportunities it provides. Likewise, Haristiani (2019) mentions the speed and ease of access to AI tools due to their ubiquity as the advantages AI in LL perceived by the EFL learners. In line with the findings of the current research, Phan (2023) also points to the positive perceptions of EFL learners, who find AI applications supportive and capable of giving immediate feedback. Personalized learning opportunities through AI are other key benefits mentioned by the participants of the present study, which supports the propositions of a recent paper (Kuhail et al., 2023). The authors of the study posit that customized learning contents and paths as well as an adjusted level of proficiency provide language learners with a unique opportunity to master a new language.

On the other hand, participants also reflected negative views on the use of AI in EFL learning. The respondents perceive AI as an overrated innovation that is likely to lose its popularity in the future. Besides, they find AI difficult to interact with, which is a clear indication of the importance of prompts while using AI for educational purposes. Lack of human sincerity, cost of access to AI tools, and feeling isolated while learning through AI are other negative remarks emerged. The lack of human instructors makes it impossible to foster interest and motivation among learners, which is a key consideration in education (Gary, 2019). Some negative arguments and future concerns regarding the use of AI in TEFL have also been

raised by Chomsky (2023) and Hockly (2023) in terms of ethics, by Grassini (2023) about teachers' roles in educational settings, and by Yu (2023) with a perspective on the effectiveness and efficiency of the learning process. All those arguments confirm the concerns expressed by participants for the urgency of the actions for the adaptation of education systems curricula to the invasion of AI-based tools heavily used in and out of language classes. Training requirements and demands for information sharing for the better use of AI tools by learners and teachers were also highlighted by Mukhallafi (2020).

The grey area of the emerging views consisted of reservations regarding the use of AI in EFL learning. The respondents in this group stated their concerns regarding the usefulness and benefits of using AI tools and applications in learning a foreign language. Despite its potential in teaching English, AI was not believed to replace teachers in the future due to a lack of real (human-like) communication, disciplinary issues, and ethical considerations. In the literature, several other studies have also highlighted the potential of AI to assist teachers rather than replace them (Gallacher et al., 2018; Xu & Ouyang, 2022). For instance, Gallacher et al. (2018) clearly highlight the irreplaceability of teachers since AI lacks feelings, visual cues, and human interaction, while drawing on a number of benefits of using AI in L2 education. Likewise, in an EAP speaking skill-focused study, Zou et al. (2020) conclude that the students thought that AI cannot actually replace teachers although it can contribute much to their EFL skills. Despite the abundance of studies supporting the findings of the present research, there are also studies (Firat, 2023; Hwang et al., 2020) which address the potential of AI in redefining the teachers' role in class and even replacing them in the near future. As another reservation, some participants raised their concerns about the need for further improvement of AI technologies to be used in foreign language education. This finding validates the previous research findings (Gallacher et al., 2018), concluding that the implementation of AI technologies in EFL learning requires further modifications on the existing applications and some purposefully tailored educational AI tools. The variety of responses in the present study all together seem to validate the existing research in the literature regarding the appreciation of high-end technologies in education, such as AI tools and applications (Firat, 2023; Hockly, 2023; Iqbal et al., 2022; Kohnke et al., 2023).

Conclusions and Implications

To conclude, the quantitative results of the present study revealed that tertiary level Turkish EFL learners did not seemingly disfavour the use of AI in their language learning endeavours, as the statistical analyses put forward moderate attitudes in the research sample. Demographic variables such as the university type and gender did not have a significant impact on their attitudes, while the majors they were enrolled in and the proficiency levels led to significant differences in their behavioural attitudes towards using AI in language learning. On the other hand, an in-depth analysis of the qualitative data indicated that the respondents in the current study predominantly favoured the use of AI in EFL learning, with some clear reservations and concerns. Though few in number, there were also EFL learners presenting a negative stance against the use of AI in their language learning experiences. As for the future of AI in EFL education, the participants adopted overwhelmingly positive views yet clearly rejected the idea that AI technologies could replace real teachers in the future, which brought about a number of recommendations for better incorporation of AI into EFL education. These findings may be attributed to their current knowledge of AI technologies, familiarity, and user experiences with the existing educational AI tools and applications, as well as their fixed mindsets on using novel technologies for educational purposes as postulated within the EVT.

With its comprehensive scope and relatively large sample size, the present study is an important attempt to understand the existing attitudes of university level EFL learners towards utilizing AI in their language learning endeavours. As discussed in consideration of the relevant literature, the participants might not be familiar enough with the AI technologies used in language learning. Besides, the clear need to be informed on how to make use of this recent phenomenon proves the need to inform students about using AI effectively and ethically in their language learning process. Moreover, the suggestions regarding a tailored language teaching curriculum should be taken into consideration in order to catch up with the trends of the digital age and take advantage of recent technological developments. The findings of the study can pave the way for the educational administrators and the policymakers in the higher education system in Türkiye to come up with more empirically based decisions about the integration of AI into the language teaching curriculum. In this regard, AI literacy courses can be integrated in the existing curricula especially in the secondary and post-secondary levels. Besides, educational institutions can invest more in generative AI technologies for educational purposes to let the learners benefit from the technology of the age.

Limitations and Recommendations

Although the study attempts to come up with generalizable findings by collecting data from two diverse settings and a large number of participants, it may not be sufficient to reflect the overall picture of the attitudes of EFL learners in the entire Turkish higher education system. Further studies, therefore, could collect more comprehensive data from all around the country, representing all the demographic backgrounds and learner profiles. Furthermore, exploring the attitudes of all the stakeholders, such as learners, instructors, and administrators, could yield a deeper insight into the phenomenon of AI. Once and for all, further studies delving into attitudes towards the use of AI in language education by carrying out comprehensive research in various settings, conducting systematic reviews of relevant studies, developing new data collection instruments, and collecting multiple forms of data from larger samples will substantially contribute to the existing body of literature.

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