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Libyan Teachers' Perceptions of AI Tools Use in English Language Learning: DeepSeek and ChatGPT

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تصورات المعلمين الليبيين حول استخدام أدوات الذكاء الاصطناعي في تعلم اللغة الإنجليزية:DeepSeek and ChatGPT

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Abstract

This study investigates Libyan teachers' perceptions of the use of AI language processing models, specifically DeepSeek and ChatGPT, in enhancing English language learning and development. With the rapid advancement of AI technologies, these models have gained significant attention for their potential to support language learning by providing personalized feedback, improving student engagement, and streamlining the learning process. However, teachers' attitudes and experiences significantly shape the acceptance and integration of such technologies into educational practices. The research focuses on two faculties: the Faculty of Arts in Misurata and the Faculty of Education in Tarhuna, utilizing a quantitative research design with questionnaires to collect data from a diverse sample of educators. The study aims to assess teachers' awareness of AI tools, their perceived benefits and challenges, and their overall readiness to incorporate these models into English language instruction. Findings reveal widespread awareness but limited adoption, with educators recognizing benefits such as personalized learning and efficiency while expressing concerns about critical thinking and accuracy. Many faculty members feel only partially prepared to integrate AI, highlighting a need for structured training and ethical guidelines. The study recommends institutional support through professional development, clear policies, and balanced human-AI collaboration to enhance classroom implementation. These insights emphasize the importance of addressing both opportunities and challenges to facilitate effective AI adoption in Libyan higher education.

Keywords: AI Language Processing Models, English Language Learning, Teachers' Perceptions.

الملخص

تبحث هذه الدراسة في تصورات المعلمين الليبيين حول استخدام نماذج معالجة اللغة بالذكاء الاصطناعي، وتحديدًا نموذجي Deepseekو ChatGPT، في تعزيز تعلم اللغة الإنجليزية وتطويرها. مع التقدم السريع في تقنيات الذكاء الاصطناعي، حظيت هذه النماذج باهتمام كبير لما لها من إمكانات في دعم تعلم اللغات من خلال تقديم تغذية راجعة مخصصة،

وتحسين تفاعل الطلاب، وتبسيط عملية التعلم. ومع ذلك، فإن مواقف المعلمين وخبراتهم تلعب دورًا حاسمًا في قبول هذه التقنيات ودمجها في الممارسات التعليمية. تركز هذه الدراسة على كليتين: كلية الآداب في مصراتة وكلية التربية في ترهونة، وتعتمد على تصميم بحثي كمي باستخدام الاستبيانات لجمع البيانات من عينة متنوعة من المعلمين. تهدف الدراسة إلى تقييم وعي المعلمين بأدوات الذكاء الاصطناعي، وفوائدها وتحدياتها المتصورة، ومدى استعدادهم لدمج هذه النماذج في تدريس اللغة الإنجليزية. كشفت النتائج وعيًا واسعًا بأدوات الذكاء الاصطناعي ولكن مع تبني محدود، حيث أدرك المدرسون فوائدها مثل التعلم الشخصي والكفاءة، بينما أعربوا عن مخاوف بشأن تأثيرها على التفكير النقدي والدقة. يشعر العديد من أعضاء هيئة التدريس بأنهم مستعدون جزئيًا فقط لدمج الذكاء الاصطناعي، مما يبرز الحاجة إلى تدريب منظم وإرشادات أخلاقية. توصي الدراسة بدعم مؤسسي من خلال التطوير المهني، وسياسات واضحة، وتعاون متوازن بين الإنسان والذكاء الاصطناعي لتحسين التطبيق في الفصول الدراسية. تؤكد هذه الرؤى على أهمية معالجة كل من الفرص والتحديات لتسهيل تبني فعال للذكاء الاصطناعي في التعليم العالي الليبي.

الكلمات المفتاحية: نماذج معالجة اللغة بالذكاء الاصطناعي، تعلم اللغة الإنجليزية، تصورات المعلمين.

Adoption of Artificial Intelligent Generative Models (AIGM) in various sectors of daily life has been a notable feature of this century. Since launch of ChatGPT as a large Natural Processing Model (NPMs), the wheel of Artificial Intelligence (AI) innovations has tremendously spined to release more novel NPMs, such as Google AI, DeepSeek (Krause, 2025), Gemini, Copilot (Albuhairy and Algaraady, 2025), Llama, Mistral, Qwen, Gemma (Aydin et al, 2025) with their developed and refined versions. Additionally, many studies were conducted to examine the effectiveness of these platforms in English language teaching and learning. Some of these studies focused on the benefits and drawbacks of implementing AI models in language teaching/learning by investigating the students' perceptions while others were set to investigate the teachers' views. However, available literature which dealt with teachers' views and perceptions appears to be limited as stated by Ali and Khan (2025) who investigated teachers' perceptions of DeepSeek use in English as a Foreign Language (EFL) class. This view was also supported by Mutammimah et al. (2024) in regard to teachers' perceptions towards adoption of ChatGPT in English Language Teaching (ELT) milieu. Therefore, the ultimate purpose of this study is to investigate Libyan university teachers' perceptions on integration of two AI language models in English classes to enhance language learning.

Research problem

Despite the growing presence of Artificial Intelligence (AI) in education, there remains a noticeable gap in research concerning the awareness and familiarity of Libyan EFL teachers with AI-powered language models such as ChatGPT and DeepSeek. While several studies have explored the integration of ChatGPT in language teaching, limited attention has been given to teachers' perceptions within the Libyan context, particularly regarding newer models like DeepSeek. The potential benefits and challenges associated with using these AI platforms

in English language instruction from the teachers' perspective are still underexplored. Moreover, there is insufficient understanding of how prepared and willing Libyan teachers are to incorporate these tools into their teaching practices. Finally, a lack of data exists concerning the specific support, training, or resources that teachers may require to implement AI effectively in the classroom.

Research questions

This study was set to answer these questions:

1. What is the level of awareness and familiarity among Libyan English language teachers with AI language models such as ChatGPT and DeepSeek?
2. What are the perceived benefits and challenges of integrating AI language models in English language education from the perspective of Libyan teachers?
3. How ready and willing are Libyan English language teachers to integrate AI tools into their teaching practices, and what kind of support do they need?

Objectives of the study

1. To examine Libyan EFL teachers' awareness, familiarity, and perceptions of AI language models, specifically ChatGPT and DeepSeek, in the context of English language teaching.

2. To identify the perceived benefits, challenges, and level of readiness among Libyan EFL teachers for integrating AI tools into their teaching practices, along with the types of support they may require.

Significance of the study

The significance of this study is seen in these points:

1. It can add to the literature about AI implementation in EFL contexts.
2. Unlike intensive exploration of ChatGPT efficiency in English Language learning and teaching, available studies that investigated DeepSeek effectiveness in this realm seems to be limited (Ali and Khan, 2025). Thus, the current study might be a further addition to bridge this gap.

Literature Review

Implementation of AI technology in English language teaching

Integration of AI applications in English language teaching and learning has been increasingly noticeable these days. Mijwil et al. (2023b) noted that employment of AI tools has altered classroom instruction in language classes. Furthermore, adoption of various AI applications appears to reduce reliance on conventional teaching methods and assist both teachers and students. In this sense Sumakul et al. (2022) added that AI- based learning enhances the potential for practice of English language via novel ways which in turn enhance the learners' language skills. This result is supported by Pane et al. (2017) when mentioned that traditional teaching methods might frequently struggle to motivate language learners who are used to personalized interactive digital experiences. Additionally, appealing features, such as providing immediate feedback, pesonlaized interaction, catering for individual learners' needs, incorporation of game like elements and interactive milieu that AI applications offer (Hamari et al., 2024) might pave the way for successful language learning.

AI applications, chatbots and platforms have rapidly become a distinct feature of English language teaching (ELT) classes during this era. Various types of natural language processing models have been developed to assist language learning and teaching. Examples of these applications are Google AI, DeepSeek (Krause, 2025), Gemini, Copilot (Albuhairy and Algaraady, 2025), ChatGPT, Llama, Mistral, Qwen, Gemma (Aydin et al, 2025) with their developed and refined versions.

Overview of ChatGPT and DeepSeek

ChatGPT is described as a leading generative conversational chatbot in AI because it set the stage for further new AI inventions (Ali and Khan, 2025). The term itself denotes a type of technology that is able to create infinite genuine stream of content (Kostka, 2023). ChatGPT was originally founded by AI Open company and it was introduced to public in November 2022 (Zhai, 2022). According to Alshater (2022), this advanced platform is able to engage into conversations with people and respond to their inquiries. Additionallty, this digital chatbot has the capabilities to adopt to individuals' preferences and employ them to generate personalized replies (Kanbach et al. 2024). More

features were related to ChatGPT from which its capability to guess accurately the next word in a string of words (Taecharungroi, 2023). What is more, ChatGPT-4 which is a refined version of ChatGPT is able to yield answered to prompts related to reasoning and conciseness (Rasul et al. 2023) and produce texts in conversational and descriptive format (Gordijn et al. 2023). Ali and Khan (2025) demonstrated that ChatGPT can be run on any devices and adjusted in terms of appearance and functionality so that it suits the users' preferences and consequently make the whole experience enjoyable and interactive. Subsequent versions of ChatGPT were developed including ChatGPT-3 (Adel et al. 2024) and ChatGPT -4 (Rasul et al. 2023).

However, despite the remarkable prominence ChatGPT has gained in the global market a new Natural Language Processing model has recently emerged, with lower cost and high efficiency, and become a rival to ChatGPT (Mercer et al., 2025). DeepSeek is a NLP which was launched in January, 2025. It was developed by an Artificial Intelligence company in China (Krause, 2025). According to Goldman (2025) on CNN Business webpage, DeepSeek was invented by a Chinese asset manager whose name was Liang Wenfeng. The reason for finding this platform was to have an affordable large scale and economical language learning model that can compete with the other known models in terms of efficiency and capabilities (Aydin et al., 2025). It was described as a sophisticated platform that has the capabilities to boost retrieving of information and assist learners by responding to inquiries based on prompts (Albuhairy & Algaraady, 2025; Alasmari, 2024).

More features of DeepSeek can increase its users' interaction by providing holistic exploration through sophisticated question predictions and comprehensive visual aids (Neha and Bhati, 2025). Furthermore, it offers its users with accurate data in various fields, such as industry, law and healthcare (Ali et al., 2025). Ali and Khan (2025) added that what makes this AI platform widespread accepted is its distinct capability to provide users with authorized responses that include references from which data were cited; as well as, its cost-effectiveness and customization because it is capable of scrutinizing the end-user's behavioural patterns, emotional state and proficiency use level. Many versions of DeepSeek subsequently released, such as DeepSeek Math,

DeepSeek-2, DeepSeek-V3 and DeepSeek-R1and they provided services to various sectors of daily life among them academic domain (Aydin, 2025).

ChatGPT and DeepSeek in English language learning and teaching

The issue of AI-based technology adoption in English language learning and teaching remains debatable. While some studies reveled positive attitudes and perceptions towards use of ChatGPT and DeepSeek in language classroom instruction, other studies indicated some critical considerations to this issue. To begin with benefits of these AI large language models. Sengupta and Chakraborty (2020) noted that ChatGPT can be an effective tool to enhance the learners' involvement and contentment. What is more, Lo et al. (2024) in their study of effectiveness of ChatGPT reported that ChatGPT was a useful tool to promote the learners' engagement and activeness when involved in AI-based learning tasks. In line with these findings, Msimeer (2024) also mentioned that this AI tool can be effective and helpful to ease English language learning and accomplishment of various tasks related to their studies. Other factures that ChatGPT has is its capabilities to translate texts into languages other than English, summarize texts and respond to questions creatively (Adiguzel et al., 2023). In addition to these merits that it provides to the learners, it also can assist teachers in their work. For example, it can set multiple-choice and open - ended questions (Kohnke, 2023), assist teachers prepare lesson plans, design tests and instructional materials (Rasul et al., 2023). Furthermore, it saves the teachers' time and enhances the potential to teacher-students interaction (Ayman et al., 2023).

In regard to DeepSeek, Ali and Khan (2025) indicated that it can be a supporting tool in language class instruction. It has capabilities to analyse large number of research papers based on questions provided by those specialized in academic fields. Furthermore, it provides accurate information in comparison to ChatGPT (Aydin et al., 2025). What is more, DeepSeek was constructed to offer a thorough analysis of linguistic phenomena including complex syntactic structures and deep thought. Moreover, it can discover errors related to word order transfer particularly when providing well-polished order (Albuhairy and Algaraady, 2025). In terms of research writing and citations, DeepSeek displayed moderate rate of plagiarism (Aydin et al., 2025). Gao et al.'s study (2025) revealed that feedback generated by DeepSeek-V3 and R1 on the

learners' writing tasks was always appropriate in comparison to feedback provided by EFL teachers. These language models were able to produce effective comments on content, organistion and coherence of students' written texts while the teacher's feedback was mainly on language use rather than coherence, content and organization of text. The researchers added that DeepSeek-v3 and R1 might be a beneficial tool to assist teachers evaluate their students' writing Gao et al (2025).

Despite favour reported by some researchers about use of AI chatbot as language model in English language classes, there were some studies that highlight some critical considerations. For example, Lo et al. (2024) in their study of effectiveness of ChatGPT stated that ChatGPT was a useful tool to promote the learners' engagement and activeness, however, students' lack of appropriate digital literacy resulted in some improper behaviours; such as plagiarism. Furthermore, working with ChatGPT might influence social interaction among students besides lack of accuracy and credibility. Regarding cognitive skills, the researcher reported noticeable decline in the students' critical thinking skills despite the efficient role it played in enhancing learning. another critical point was ensuring that AI applications are not biased (Soledispa et al., 2023) because this might result in social inequality among the learners' and influence their learning progress (Langer and Langer, 2023).

Related studies

The first study to state here was conducted by Ali and Khan (2025). The study entitled *'Teachers' Perspective on Integrating DeepSeek in Saudi EFL Classrooms'*. The aim of the study was set to investigate opinions of EFL Saudi teachers towards use of DeepSeek in English language learning. To achieve the purpose of this study, the two researchers employed a qualitative approach. The participants in this study were 30 Saudi teachers who were in service in 10 local universities. These teachers were randomly selected. Interviews were established to collect data from the study participants and the results of this study revealed that teachers expressed a positive attitude towards adoption of DeepSeek in EFL class instruction. They thought that DeepSeek can be an effective, free tool that allow for infinite number of questions in contrast to ChatGPT. Furthermore, the results disclosed that being capable of producing precise results and free of

charge make DeepSeek more convenient language model to use. Another finding was that DeepSeek can be bring its users together to share data, collaborate and interact for effective results. Overall, the data obtained from the participants through questionnaire indicated that AI tools are now skyrocketing and their effectiveness cannot be questioned.

Another study was done by Mutammimah et al. in 2024. They investigated teachers' perspective towards ChatGPT acceptance in English language teaching. The aim of this study was to know the teachers' perception towards using ChatGPT in English language learning. The researchers in this study employed a cross-sectional method. The participants were 114 Indonesian teachers who has experienced using ChatGPT in their English class instruction. These teachers were randomly selected. The data for this study was collected via online questionnaire and after analyzing them, the results disclosed positive attitude and support of implementing ChatGPT in language instruction; however, this attitude was influenced by the teachers' behavioral intentions. The findings of the study also supported employment of AI technology and highlighted importance of encouraging teachers to stimulate their motivation and desire to incorporate technology-based instruction in their classes.

In 2024, Zainuddin wrote a paper about *'Teachers' Perceptions of AI Tools in Enhancing Student Engagement for English Language Learning'*. The study reported in this paper was set to find out how effective AI applications can be in enhancing the learners' engagement with English language learning from teachers' perspective. The researcher here employed qualitative research design in order to gather detailed data. The participants were 15 English teachers from various educational levels: Primary to tertiary, from urban and rural contexts and varied in length of their teaching experience. Semi-structured interviews were employed to collect data from these participants. The results of the study showed that teachers perceived utilization of AI application in classroom instructions positively because these applications can offer enjoyable, gamified learning with immediate response which can stimulate the learners' motivation and allow for individual learning based on their needs. Conversely, the teachers claimed that issues, such as differences among learners in access to technology, over dependence on AI applications and lack of professional training might hinder employment of AI applications; therefore, they need to be considered.

Chi conducted a study in 2023 in order to explore English language teachers' attitudes and perceptions about utilizing ChatGPT in language teaching and assessment. The researcher used quantitative research design. The participants in this study were 43 English university teachers whose work experience was at least 5 years. Furthermore, majority of them had experience with ChatGPT while the rest had not used it. The data for this study were collected by online questionnaire which were designed on Google Forms. The findings revealed notable variation and contradictions in the teachers' viewpoints in terms of effectiveness and challenges in relation to integration of ChatGPT in class instruction and assessment. These variations and contradictions was attributed to the lack of adequate training and guidance, particularly on how to write accepted prompts properly when using ChatGPT.

Method

Research design

The researchers in this study adopted a case study approach to accomplish the aim of the current study. According to Crowe et al. (2011), employment of case study approach might result in comprehensive understanding of the issue under investigation.

Participants and setting

The participants in this study were eight Libyan EFL teachers who were in service at public universities. They were males and females. Four of them were from the Faculty of Education in the University of Azzaytuna and the other four were from the Faculty of Arts in Misurata University. The study was conducted in Spring Term, 2025.

Data collection instruments

To collect data for this study, the researchers employed Google forms to set online questionnaire. This electronic questionnaire was sent to the participants' WhatsApp via a link. The questionnaire had both closed and open-ended items. It consisted of six sections. The first section was to collect demographic data about the participants. It included questions (1-6). The second section consisted of three questions (6-8). It was devoted to investigate the participants' awareness and familiarity with AI language tools. The third section explored the

participants' perception on benefits provided by AI natural language models. The participants' answers here were measured on a five-point Likert scale: 'Strongly agree', 'agree', 'neutral', 'disagree' and 'strongly disagree'. The addressed questions here were (9-13). The fourth section addressed the challenges that the participants encounter when using language models in questions (14-18). Similarly to the previous question, the participants' responses were measured on a five-point agreement Likert scale. The fifth section was set to know about the participants" readiness to integrate AI models in their classes. The answers of questions (19-21) were measured on dichotomous scale: 'Yes' or 'No' while question 22 offered a four-point frequency Likert scale: 'Fully', 'Partially', 'Rarely' and 'Not at all'. The last section of the questionnaire had three open ended questions: (23-25).

Data collection and analysis

This study investigated Libyan university faculty members' perceptions regarding the integration of AI language tools in English language education. Through a mixed-methods approach analyzing both quantitative survey responses and qualitative open-ended feedback, the research explores awareness levels, perceived benefits, challenges, and readiness for AI adoption. The sample comprised eight respondents from Faculties of Education and Arts across Libyan universities, providing insights into this emerging educational technology landscape.

Demographic Characteristics

The participant group demonstrated distinct demographic patterns.

Table 1: Participant Demographics.

Characteristic	***Category***	***Frequency***	***| Percentage***
Gender	Male	2	22.2%
	Female	6	66.8%
Age	30-40	5	55.6%
	41-50	3	33.3%
Teaching Experience	5 years	2	22.2%
	5-10 years	1	11.1%
	10 years	5	55.7%

Notably, the sample skewed heavily towards experienced female educators, with two-thirds

(55.7%) possessing more than a decade of teaching experience. This demographic distribution

suggests that the findings particularly reflect the perspectives of seasoned female faculty

members in Libyan higher education.

Awareness and adoption patterns

The data revealed unanimous awareness (100%) of AI language tools among respondents,

though adoption rates proved more modest.

Table 2: AI Tool Familiarity and Usage

Metric	***| Category***	***Frequency***	***| Percentage***
Usage Frequency	Daily	1	11.1%
	Weekly	1	11.1%
	Occasionally	6	66.7%
	Never	1	11.1%
Awareness Source	Social Media	5	55.6%
	Online search	2	22.2%
	Workshops	1	11.1%

The predominance of social media (55.6%) as the primary awareness channel suggests

informal networks play a crucial role in disseminating technological knowledge among

faculty. However, the gap between awareness and regular use - with only (22.2%) employing

AI tools weekly or daily - indicates significant barriers to implementation despite theoretical

familiarity.

Perceived benefits analysis

Quantitative analysis of Likert-scale responses showed strong positive perceptions, with (77.8%) agreement regarding AI's educational benefits. Qualitative responses further illuminated these advantages.

Table 3: Key Perceived Benefits

Benefit Category	***Frequency***	***Percentage***
Personalized learning	6	66.7%
Accessibility	5	55.6%
Time efficiency	4	44.4%
Instant feedback	3	33.3%
Engagement enhancement	2	22.2%

These findings emphasis on personalization (66.7%) reflects growing pedagogical

emphasis on learner-centered approaches in language education.

Challenges and concerns

Despite recognizing benefits, faculty expressed substantial reservations.

Table 4: Primary Concerns Regarding AI Integration

Concern /	***Frequency***	***Percentage***
Critical thinking erosion	5	55.6%
Accuracy issues	4	44.4%
Data privacy	3	33.3%
Teacher displacement	2	22.2%
Creativity limitations	2	22.2%

The prevalence of concerns about critical thinking (55.6%) and accuracy (44.4%) mirrors

broader academic debates about AI's cognitive impacts. Ethical considerations, particularly

regarding data privacy (33.3%), emerged as significant barriers to adoption, reflecting global

concerns about educational technology.

Readiness and training needs

Faculty readiness levels demonstrated notable variation

Table 5: Readiness Levels and Training Needs

Readiness Level	***Frequency***	***Percentage***	***Training Need***	***Frequency***
Fully ready	1	11.1%	Integration strategies	4 (44.4%)
Partially ready	6	66.7%	| Ethical guidelines	3 (33.3%)
Not sure	2	22.2%	Technical workshops	)3 (33.3%

The predominance of partial readiness (66.7%) coupled with specific training requests (66.7% overall) underscores the necessity for institutional support mechanisms support beyond mere tool familiarity.

Discussion and Iimplications

The study reveals a paradox characterizing faculty attitudes: strong theoretical recognition of AI's potential coexists with practical hesitation. This tension manifests in three key dimensions:

First, the awareness-usage gap suggests that familiarity alone cannot drive adoption. While social media effectively spreads awareness (55.6%), formal channels may better facilitate implementation. This gap aligns with Chi's (2023) findings, where university teachers exhibited contradictory views on ChatGPT's effectiveness due to insufficient training. Similarly, Mutammimah et al. (2024) found that while Indonesian teachers supported ChatGPT integration, their behavioral intentions significantly influenced adoption. This suggests that familiarity alone does not drive implementation—structured professional development is crucial. Institutions should develop structured professional development programs addressing both technical competencies (requested by 33.3%) and pedagogical integration.(%44.4)

Second, ethical concerns (33.3%) and accuracy worries (44.4%) indicate need for institutional frameworks governing AI use. The development of clear guidelines could alleviate faculty anxieties while ensuring responsible implementation. For instance, Lo et al. (2024) reported risks like plagiarism and declining critical thinking skills among students using ChatGPT. Additionally,

Soledispa et al. (2023) warned about AI bias exacerbating educational inequality.

Third, the predominance of experienced educators in the sample (66.7% with 10 years experience) challenges assumptions that younger faculty drive technology adoption. This suggests professional development should target all career stages. This aligns with Zainuddin's (2024) study, where teachers across career stages valued AI for gamified learning and personalized instruction. However, challenges like unequal access to technology and overdependence on AI (Zainuddin, 2024) persist. Institutions must Provide equitable AI access, particularly for rural educators; offer scaffolded training for all experience levels, as suggested by Adiguzel et al. (2023) and encourage human-AI collaboration, ensuring teachers remain central to instruction while leveraging AI for efficiency (Rasul et al., 2023).

Conclusion

The findings demonstrate that while Libyan English faculty recognize AI's pedagogical potential (77.8%) agreement on benefits), their optimism remains cautious due to concerns about critical thinking erosion (55.6%) and implementation challenges. The strong demand for training (66.7%) underscores the need for structured institutional support to bridge the gap between AI's theoretical advantages and its effective classroom integration. Addressing these concerns through targeted professional development and ethical guidelines will be crucial for facilitating responsible adoption in English language education. Future research should explore longitudinal impacts of AI integration on learning outcomes and pedagogical practices. The integration of AI in ELT is inevitable, but its success depends on addressing faculty concerns through training, ethical guidelines, and equitable support. Institutions can bridge the gap between awareness and effective implementation.

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