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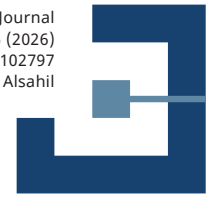

Castledown

Secondary school English-as-a-foreign-language teachers' artificial intelligence use and practices in teaching

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The widespread introduction of generative artificial intelligence (AI) technologies has triggered an intense debate on its potential influence on language teaching. The sophisticated features of generative AI technologies and their rapid adoption present challenges and opportunities for language teachers. This research explores the use and practices of AI among secondary school English-as-a-foreign-language (EFL) teachers. It investigates their attitudes toward the utilization of AI in teaching, how they adapt traditional methods to integrate AI tools, and the perceived benefits and challenges of AI integration. The study employs an exploratory qualitative approach relying on pre- and post-questionnaires and semi-structured interviews with 11 Saudi female EFL teachers in secondary public schools. The teachers received online pedagogical training highlighting the benefits of AI in teaching English and possible practices, such as lesson planning, activity design, and assessments. The findings indicate that the teachers had positive attitudes toward using AI for lesson planning, designing classroom activities, and making and correcting assessments. However, the teachers pointed out the challenges of using such technologies, including student and teacher training, over-reliance, connection malfunction, and ethical use of personal information. The findings offer insight into the current state of AI integration in EFL education, reveal gaps in knowledge and resources, and point to recommendations for the effective implementation of AI in language teaching.

Keywords: Generative artificial intelligence (GenAI, GAI), pedagogical training, secondary education, teacher attitudes

1. Introduction

The rapid development of artificial intelligence (AI) has transformed various sectors, with education being one of the most affected (Duong et al., 2024; Yim & Su, 2024). In the field of English as a foreign language (EFL) pedagogy, AI technologies, particularly generative AI (GenAI) tools like ChatGPT, Google Bard, and other large language models, are transforming instructional methodologies and redefining the teacher's role in the language learning process (Abernathy, 2024; Moorhouse & Kohnke, 2024; Chiu, 2024). New technologies offer new possibilities for personalized learning, automated content development, and innovative assessment design (Moorhouse et al., 2023; Busso & Sanchez, 2024). However, concerns arise regarding ethical issues, teacher preparedness, and the effective integration of AI into curricula (Nguyen et al., 2025; Kildė, 2024).

GenAI tools have numerous practical applications for English language teachers. For instance, they may be utilized to plan lessons, check grammar, produce writing prompts, develop reading materials, and simulate interactive dialogues for speaking practice (Abernathy, 2024; Hsu et al., 2023; Alharbi, 2023). Research indicates that GenAI systems can help provide education that is tailored to students' competency levels, provide immediate feedback, and facilitate the use of different methods (Moorhouse & Kohnke, 2024; Chounta et al., 2021). This may be useful for managing diverse classrooms and fostering student autonomy in an EFL context (Chen et al., 2022; Kern, 2024). As a result, many teachers report that AI improves their ability to manage workloads and enhances student engagement through interactive and personalized tasks (Moorhouse et al., 2024).

Despite these advantages, challenges exist in the implementation of AI in classroom practices. For instance, the limitations imposed by frameworks often restrict teachers' ability to incorporate emerging technologies into their teaching. Rigid curricular constraints and restricted instructional time can impede their use of innovative technology (Lo, 2025). Further, a limited number of educators possess the digital competencies necessary to effectively integrate AI tools into their pedagogical practices. As Tapel et al. (2023) indicate, insufficient technical knowledge and training experience are major obstacles for many teachers who seek to incorporate AI into language instruction. Although the potential of AI is considerable, its implementation in EFL classrooms relies on focused support, professional development, and some level of management.

In parallel, the ethical implications of AI in education are constantly expanding. Notably, students may find it difficult to differentiate between their own work and that produced by AI. This issue has raised concerns about weakening speaking skills, degraded academic integrity, and growing plagiarism as unexpected consequences of the improper utilization of AI (Duong et al., 2024). Students connect their concern about AI-powered platforms to their worries about the lack of human interaction, which diminishes the possibilities for authentic communication (Kim et al., 2021). As the use of AI systems becomes more prevalent, teachers are encouraged to maintain a

human-centered approach in their pedagogical practices and to consider, employ, or advocate for AI as a support tool rather than a substitute for human interaction.

In this context, the global drive to integrate AI into education raises questions regarding teacher readiness, particularly in K-12 settings. Recent research emphasizes the importance of early exposure for AI literacy among both students and educators. In this regard, Yim and Su (2024) suggested utilizing intelligent agents such as Google's Teachable Machine, Learning ML, and Machine Learning for Kids as models for demonstrating AI principles in educational contexts. Nevertheless, when K-12 educators agree to utilize new technologies, they frequently lack the necessary pre-service or professional development to employ these tools following an effective pedagogical method (Yue et al., 2024). Teachers must therefore engage in learning that evaluates their technological pedagogical content knowledge, attitudes towards AI, and self-efficacy in using these technologies to fully incorporate them as potential learning experiences. Neglecting these aspects implies that improvements in the education sector enabling educators to integrate AI will not be grounded in reality.

In Saudi Arabia, the discourse on AI in education is just emerging. Despite governmental backing for its implementation through digital transformation, empirical research on the integration of AI into secondary public schools and teachers' perspectives remains limited. Most studies to date have concentrated on higher education or technical training, overlooking the distinct needs, challenges, and opportunities present in K-12 environments. This shortage of research at the secondary level is particularly concerning due to the increasing significance of AI literacy and the essential role of secondary education in preparing students academically and technologically. The present research seeks to fill this gap by examining the experiences of secondary school EFL teachers in Saudi Arabia who are exploring and implementing the use of AI tools in their teaching practices.

In particular, the research explores how teachers adapt their traditional practice when including AI use in their lesson planning, instructional practices, and assessment tasks. We conducted a structured pedagogical training intervention through Zoom to help participating teachers use AI tools. After the intervention, the participants completed pre- and post-questionnaires and took part in semi-structured interviews. The mixed-method design produced a holistic understanding of the ways GenAI tools may disrupt classroom practices and teachers' attitudes.

The same research question could easily apply outside of Saudi Arabia, as educational professionals around the world are trying to figure out how they can ethically and meaningfully use AI in classrooms. Gisbert Cervera and Caena (2022) and Chiu (2024) noted the need for educators to develop skills specific to teaching with AI as well as critical literacy to evaluate AI output and monitor their students' input. Teachers are no longer just content deliverers; they must act as facilitators, co-designers, and ethical gatekeepers in increasingly AI-mediated learning environments. In light of this, the present study aims to

provide timely insights into the benefits, limitations, and practical realities of AI integration into secondary school EFL education. It addresses four central research questions:

- What are EFL teachers' attitudes toward the use of AI in teaching?
  - What benefits and limitations of AI tools do teachers encounter when they use them to facilitate their teaching practices?
  - To what extent do AI pedagogical interventions change Saudi EFL teachers' perspectives on the use of AI in teaching?
- How do EFL teachers adapt their traditional teaching methods to integrate AI-driven tools and resources?

By examining these questions, the research contributes to the growing body of literature on AI in education and offers actionable recommendations for policymakers, curriculum developers, and teacher training programs. Most importantly, it amplifies the voices of teachers on the front lines of AI integration, whose insights are essential to creating equitable, ethical, and effective learning environments in the digital age.

2. Literature review

The integration of AI into EFL teaching has caught the attention of educators. The growth of GenAI sheds new light on the nature of foreign language learning, which can be characterized as multifarious, unstructured, informal, and independent rhizomatic learning (Kairienė & Mažeikienė, 2023). In the Saudi K-12 educational context, the integration of AI is determined by educational, cultural, and policy frameworks that must be taken into account when assessing teacher practices and attitudes (Al-Shehri, 2023). This literature review explores the use of AI tools in teaching, the adaptation of traditional methods by EFL teachers, the use of AI in K-12 education, and the challenges and benefits of the effective integration of AI tools into EFL teaching.

2.1. Use of artificial intelligence in english language teaching

GenAI represents an emergent technology with the potential to enhance education through innovative pedagogical methods while simultaneously posing challenges to schools, teachers, and students. Teachers' perspectives are essential for understanding technology's role in learning, instruction, evaluation, and administration (Chiu, 2024). Research demonstrates that AI tools enable individualized learning experiences by customizing lessons and feedback based on learners' progress, potentially improving overall language competency (Abernathy, 2024; Moorhouse, 2024; Moorhouse & Kohnke, 2024). These applications can generate tailored learning materials, including reading passages and exercises, based on students' proficiency levels and interests, potentially boosting motivation and engagement while facilitating continuous practice beyond classroom walls (Chiu, 2024; Moorhouse & Kohnke, 2024).

Studies examining AI's pedagogical applications reveal multifaceted benefits. Teachers identify advantages including enhanced student autonomy,

personalized education delivery, reduced workload, streamlined evaluation processes, and efficient content synthesis (Derakhshan & Ghiasvand, 2024; Lo, 2025). However, these same studies document persistent concerns regarding creativity constraints, academic integrity risks, examination cheating, research misinformation, and technical plagiarism (Derakhshan & Ghiasvand, 2024). Additionally, designing general education–oriented materials using artificial intelligence helps teachers incorporate further digital resources. However, teachers voiced worries about using artificial intelligence inside rigid curricula and limited teaching time (Lo, 2025).

2.2. Pre-existing teacher perceptions of AI in language education

Prior to targeted interventions, teachers' AI adoption patterns demonstrate considerable variation. Research indicates that while many educators recognize AI's theoretical potential, actual integration remains sporadic and limited primarily to research rather than instructional design (An et al., 2022; Chounta et al., 2021). Teachers report moderate confidence levels and express concerns about the technical competence, prompt precision, and cultural appropriateness of AI-generated content (Tapel et al., 2023; Yue et al., 2024). Several studies identify barriers to adoption, including insufficient training, limited digital competencies, and uncertainty about effective pedagogical integration strategies (Gisbert Cervera & Caena, 2022; Kildė, 2024; Yue et al., 2024).

Despite theoretical optimism about AI's transformative potential, teachers encounter practical limitations, including time constraints, curricular rigidity, and inadequate professional development, that frequently hinder full realization of AI's educational possibilities (Gisbert Cervera & Caena, 2022; Yue et al., 2024). Initial teacher perceptions often reflect tension between recognition of AI's potential benefits and anxiety about implementation challenges, ethical implications, and their own preparedness (Chounta et al., 2021; Tapel et al., 2023).

2.3. Adapting teaching methods through AI integration

As GenAI tools become more prevalent, EFL teachers explore ways to adapt traditional methodologies to enhance learning outcomes. Integration strategies involve combining conventional approaches with AI capabilities to create more interactive environments that foster creativity, innovation, and problem-solving (Kern, 2024; Nguyen et al., 2025). Effective integration requires teacher guidance in helping students critically evaluate AI technologies and use them responsibly (Moorhouse et al., 2023). Evidence from Japan demonstrates that AI integration can shift teachers' roles from content deliverers to facilitators who encourage independent critical thinking (Busso & Sanchez, 2024). Teachers value ChatGPT particularly for supporting students who struggle with idea organization, noting its efficiency in generating outlines and facilitating brainstorming (Wang & Vásquez, 2022).

GenAI applications assist teachers in producing innovative materials to support language tasks (Dehouche & Dehouche, 2023), positioning teachers as crucial facilitators of technology-mediated learning (Chiu, 2024). However,

successful integration requires professional development that builds awareness, responsiveness, and technical competencies while addressing social and material considerations alongside personal skill development (Guerrettaz et al., 2021; Gisbert Cervera & Caena, 2022).

2.4. Impact of professional development on AI adoption

Targeted interventions and structured training significantly influence teachers' AI integration practices. Research demonstrates that perceived usefulness and ease of use strongly drive technology adoption (An et al., 2022), with structured professional development enhancing both factors. Studies show that pedagogical training equips teachers to leverage GenAI for differentiated instruction, adaptive feedback, and innovative activity design (Moorhouse, 2024; Moorhouse et al., 2024; Moorhouse & Kohnke, 2024). Following intervention programs, teachers report increased confidence, expanded tool repertoires, and shifts toward more student-centered, technology-integrated pedagogies (Moorhouse et al., 2024).

Professional development programs that demonstrate AI's practical applications enable teachers to move beyond theoretical understanding to confident classroom implementation. Training that addresses both technical skills and pedagogical integration strategies proves most effective in fostering sustained AI adoption and innovative teaching practices (Kildė, 2024; Moorhouse et al., 2024).

2.5. Benefits and challenges of AI integration in EFL teaching

AI integration in EFL education presents both significant opportunities and persistent challenges. Research documents improved language learning outcomes through AI's capacity to promote student engagement, enable self-paced skill development, and provide real-time personalized feedback (Mikeladze et al., 2024; Nguyen et al., 2025). AI chatbots facilitate low-pressure speaking practice, reducing anxiety and promoting willingness to communicate (Hsu et al., 2023; Nguyen et al., 2025). Specific tools target particular competencies: chatbots foster speaking fluency through low-anxiety conversation practice, while writing tools support brainstorming, organization, and error correction (Hsu et al., 2023; Wang & Vásquez, 2022). Adaptive reading texts customized to proficiency levels enhance comprehension (Moorhouse & Kohnke, 2024), and immediate feedback improves both fluency and accuracy in production skills (Busso & Sanchez, 2024; Chan, 2023; Chiu, 2024).

However, successful integration requires addressing substantial challenges. Ethical considerations include data privacy protection, prevention of technology over-reliance, and maintenance of academic integrity (Busso & Sanchez, 2024; Chan, 2023; Chounta et al., 2021). Students express concerns about AI's impact on speaking skill development and plagiarism risks (Duong et al., 2024), while educators note limitations in error correction accuracy, contextual understanding, and preservation of human interaction in learning environments (Chiu, 2024; Kim et al., 2021; Meyer et al., 2023). Effective

integration thus necessitates institutional support, robust ethical frameworks, and pedagogical strategies ensuring that AI enhances rather than replaces human-centered teaching and authentic communication (Chan, 2023; Mikeladze et al., 2024).

3. Methods

3.1. Research design

The study employed an exploratory qualitative approach to investigate participants' experiences and viewpoints in depth. The flexibility of this approach enabled the researchers to adapt to emerging themes and subtleties throughout the study.

3.2. Participants

The participants were 11 female EFL teachers in secondary Saudi public schools. Selected based on a convenience sampling strategy. The first researcher sent an invitation to EFL teachers based on familiarity and accessibility. While this strategy and the sample size might limit the generalizability of the findings, they align with qualitative research conventions for in-depth exploratory studies (Creswell & Plano Clark, 2011) and enable a thorough thematic analysis that captures the nuanced experiences essential for understanding AI adoption processes in this specific educational context. These 11 teachers completed a pre-questionnaire before attending an online Zoom meeting to discuss the use of an AI application (ChatGPT) in lesson planning, activities, and assessments. After the intervention (3 weeks of using an experiment with AI integration in their teaching practices), they completed a post-questionnaire. Then, these EFL teachers participated in semi-structured one-on-one interviews.

Based on the pre-survey results, all participants possessed between 5 and 15 years of teaching experience, held bachelor's degrees in English, and taught across different grade levels (10–12), providing diversity in expertise and student populations. Eight teachers reported using GenAI before, while only three have never used it. Those who used it said they primarily used ChatGPT. This sample represents the demographic profile of female secondary EFL teachers in Saudi public education, where female educators constitute most language instructors in girls' schools under the gender-segregated system.

3.3. Ethical considerations

All participants received full information about the study's aims, procedures, benefits, and risks and signed a consent form before participating. Moreover, individual responses were coded anonymously to protect participants' identities, and only aggregate findings are reported. Participation was voluntary, and teachers could withdraw at any time without penalty. The study fully complied with institutional and legal data-protection guidelines. The study protocol was submitted to and approved by the institutional ethics review board before data collection.

3.4. Data collection and procedures

3.4.1. Pre- and post-questionnaires. A questionnaire was administered twice, before the online Zoom meeting and then later after intervention and their AI use in their teaching practices, to the 11 participating teachers (coded T1–T11) to capture shifts in their perceptions and self-reported competencies (Shadish et al., 2002). The instrument was adapted from Moorhous et al. (2024) to align with the study's objectives. The questionnaire items were reviewed by twoeducational experts to enhance content and face validity (DeVellis, 2016; Dillman et al., 2014). Changes were made in response to their suggestions. The instrument was then sent to the participants electronically via Google Forms.

The items were designed to collect both quantitative ratings and rich qualitative insights. For ease of reference, the full list of the two questionnaires' items is provided in Appendices A and B. This pre/post-intervention design enabled the detection of changes in teachers' self-assessed competence, familiarity with GenAI tools, attitudes toward their utility, concerns, and informational needs resulting from the intervention (Cohen et al., 2018; Creswell & Plano Clark, 2011).

3.4.2. Semi-structured interview. The researchers formulated the interview questions based on the purpose of the study, focusing on yielding insights and perspectives into the practical part of the study to answer the research questions. Interviews were conducted with all 11 teachers online via Zoom and lasted between 20 and 30 minutes.

The respondents' responses were transcribed, and the answers were organized and limited to data for each person separately and for each answer. Qualitative content analysis was then performed so that the interview results served as justification for their positions, based on their experiences in this field and their personal opinions on the issue under study.

3.4.3. Data analysis. We conducted a descriptive analysis of the pre-post closed-ended questionnaire, while NVivo was used to conduct thematic analysis of open-ended responses and interview qualitative data.

4. Findings

4.1. RQ1: EFL teachers' attitudes toward AI use in teaching

As reported in the interviews, at the beginning of the intervention, teachers set multiple learning objectives for their students during the learning process, including helping students develop their self-confidence and fluency in using English in real-life situations. Teachers also aimed to enable students to use technology in the best way possible to learn and search for information. The participants' learning objectives for their students are summarized in Figure 1.

The semi-structured interviews revealed that teachers articulated multifaceted learning objectives for their students, spanning the linguistic, affective, and technological domains. Primarily, they emphasized the development of

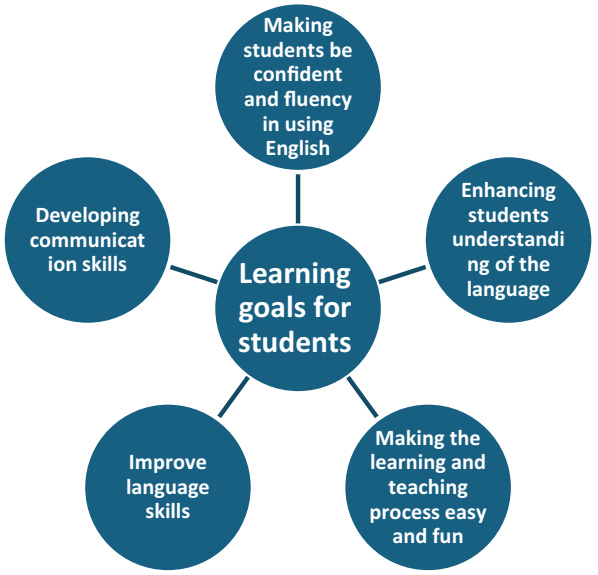

Figure 1. Teachers' educational goals for their students

self-confidence and fluency in real-life English use, tailoring expectations to three proficiency tiers: a focus on everyday expressions for beginners, accuracy and fluency for intermediate learners, and articulating complex ideas clearly for advanced learners. Some teachers also aimed to foster their students' digital literacy and enable them to leverage technology effectively for language practice and information retrieval. For example, T3 explained:

> *"My main goal is to help students develop communication skills and become lifelong learners who are confident in using English inside and outside the classroom. Also, I want them to break through any anxiety and fear of speaking English."*

Beyond linguistic competence, the participants aspired to make lessons engaging and enjoyable, reduce learners' anxiety about speaking, and promote communication skills in the classroom and beyond. These interview insights aligned closely with the patterns that emerged from the pre- and post-questionnaire data. The eleven teachers reported good familiarity with GenAI tools (e.g., ChatGPT, Gemini) and a shared belief that these tools can enhance lesson planning, activity design, and assessment, key drivers of student engagement and confidence. For instance, several teachers noted that AI-generated exercises provide personalized speaking and writing practice, which supports fluency development and lowers affective barriers. Others described using ChatGPT to design interactive activities and tailor materials to individual learner profiles, emphasizing that AI can act as "supplementary support" in language acquisition by customizing content for learners' needs.

Moreover, a unanimous positive shift was observed in teachers' self-reported competence from merely competent before the intervention to more

confident after the training. This underscores the technology's capacity to bolster educators' readiness to implement learner-centered and communicative approaches. These findings suggest that integrating AI tools not only supports the linguistic and affective learning goals identified in the interviews but also empowers teachers to reach these objectives more effectively. Additionally, the results of the semi-structured interviews showed that the participating teachers' experiences with using AI to improve teaching practices were excellent. These tools facilitated the process of preparing lessons, distributing tasks, and assigning students projects. AI also helped generate diverse ideas for teaching lessons, making practical exercises more engaging for students. The teachers also reported a very positive experience with using AI to design creative activities, adapt content to different student levels, and save valuable time on administrative tasks, such as assessment and lesson planning. This allowed them to focus on student engagement and diverse teaching methods. For example, the participating teachers utilized AI to create personalized learning materials and quizzes based on students' performance data, which can improve their results. The teachers also used AI in the creation and tracking of materials and visual stories for storytelling and vocabulary games.

Figure 2. Benefits of AI for improving teaching practices

In addition, interviews consistently portrayed teachers' experiences with AI as very positive. For example, T5 stated, "*It was positive. Artificial intelligence helped me save time, personalize lessons, and engage students more effectively.*" Participants highlighted that AI tools streamlined lesson preparation, enabling the rapid generation of diverse ideas and adaptive materials. For example, many described using ChatGPT and Gemini to draft lesson plans,

quizzes, and storytelling visuals, making the activities more engaging and tailored to each proficiency level. T4 explained:

> *"Using artificial intelligence has been a very positive experience; it allowed me to generate creative activities quickly and adapt content to different student levels. I have used artificial intelligence to create and track materials, comic strips for storytelling, and vocabulary games. By using it, I save time, and it opens up new possibilities for student engagement."*

Several teachers valued that automating administrative tasks such as generating assessment items and organizing project assignments freed up time for focusing on student interaction and creative pedagogy. Others praised AI-driven visual stories and vocabulary games for enhancing student motivation and supporting varied learning modalities. These qualitative insights were mirrored in the pre- and post-questionnaire findings. Before intervention, some teachers (T1, T2) reported minimal GenAI use despite acknowledging its potential. After training, 100% actively used at least one AI tool, with all confirming improved lesson planning and materials design. For instance, T3 shifted from using AI solely for research to creative activity design, while T7 expanded from basic ChatGPT prompts to multimedia tools (Synthesia, Canva AI). This transition illustrates how targeted pedagogical support builds confidence and competence for integrating AI into practice.

4.2. RQ1a: Benefits and limitations of AI tools

Qualitative analysis revealed both benefits and limitations of AI tools in teaching practice. Teachers identified key strengths, including flexibility and ease of use, lesson idea generation, quick content creation, time savings, personalized learning support, administrative efficiency, resource generation, and varied materials. T8 noted, "Strengths *such as personalized learning support, as artificial intelligence can adapt to students' learning levels and provide tailored feedback, helping meet the diverse needs in a classroom.*"

However, teachers also identified significant limitations. Multiple participants (T1, T8, T9) cited the need for accurate prompts, explaining, "*Artificial intelligence tools don't understand what I want precisely,"* alongside bias and accuracy concerns: "*Artificial intelligence systems can produce biased or incorrect information if the underlying data or algorithms are flawed; they sometimes give wrong answers and inaccurate suggestions; the images do not match our culture and our curriculum."* Teachers (T2, T3) highlighted AI's lack of emotional intelligence, occasional inaccuracy, contextual understanding limitations, and cultural appropriateness issues, noting that "*artificial intelligence lacks emotional intelligence and cannot fully understand student moods, motivations, or context.*" Moreover, T11 identified AI limitations such as over-reliance risks: "*Teachers may become too dependent on artificial intelligence, reducing creativity or critical engagement in lesson planning*," and equity concerns: "*Not all students have equal access to technology or reliable internet, which can widen the*

Figure 3. Benefits of artificial intelligence tools in teaching

Figure 4. Limitations of artificial intelligence tools in teaching

achievement gap." Data privacy emerged as another concern, with T8 stating, "*Using artificial intelligence tools involves sharing student data, which raises concerns about security and ethical use*."

Questionnaire data reflected these qualitative impressions. Before intervention, 10 of 11 teachers (91%) identified clear benefits; after intervention, all participants (100%) did so, demonstrating growing confidence in AI utility. Conversely, initial concerns about resource constraints and training

were reported by two teachers (18%), with only one (9%) citing worries post-intervention (specifically over-reliance), indicating that focused pedagogical support can mitigate perceived limitations.

4.3. RQ1b: Changes in Saudi EFL teachers' perspectives on the use of AI resulting from the intervention

Semi-structured interviews revealed that GenAI integration transformed teaching to become more engaging, interactive, and student-centered. T9 stated, *"It is a very good tool that can help me and the students make teaching and learning the English language more fun."* Participants noted increased student engagement, interest, and activity involvement. AI facilitated the creation of varied teaching strategies and tools, such as worksheets, videos, and explanations, providing students with diverse learning resources. T11 explained, *"I have learned how to use generative AI tools to create interactive activities, improve students' writing and reading skills, and make the learning process more engaging and effective."* Teachers reported that teaching became more student-centered, adaptable, and focused on real-world communication skills, with increased personalization, technology integration, and emphasis on digital literacy alongside language skills.

Figure 5. Changes in teachers' perspectives on technology after AI integration

The semi-structured interviews indicated that GenAI can transform EFL teaching along several dimensions: lessons become more engaging, interactive, and student-centered; activities are enriched with multimedia resources (worksheets, videos & graphics); and real-world communication skills and digital literacy are prioritized. Teachers reported that AI-enabled tools allowed

them to create varied explanations and adaptive materials quickly to foster students' motivation and participation.

Pre- and post-questionnaire data confirmed these shifts. Before intervention, 82% (n = 9) anticipated AI could enhance classroom engagement; after intervention, 100% (n = 11) reported experiencing these benefits directly. Before training, only 64% (n = 7) had experimented with AI for multimedia/interactive tasks; after training, all participants incorporated at least one AI-generated activity, from interactive quizzes to video-based prompts, into lesson plans.

Participants believed AI enhanced all language skills (reading, writing, listening, speaking, vocabulary, and grammar). T7 stated, *"I learned that generative AI can be a powerful tool to support English language teaching. It also helps enhance students' reading, writing, speaking, and listening skills."* Specific skill improvements included vocabulary acquisition through personalized recommendations and contextualized learning; reading comprehension via tailored materials and instant feedback; writing skills through grammar assistance, style suggestions, and creative writing support; speaking and pronunciation via speech recognition and conversational simulation; listening skills through adaptive exercises and real-time feedback; and grammar/syntax improvement through instant error identification and correction suggestions.

Figure 6. Language skills improved by the use of artificial intelligence in teaching

Before intervention, only 73% (n = 8) agreed AI could boost language skills; after intervention, 100% (n = 11) confirmed this belief based on direct classroom experience. This convergence of interview and survey findings demonstrates how targeted pedagogical support transforms expectations into practice.

4.4. RQ2: Adaptation of traditional teaching methods to integrate AI tools and resources

Analysis showed AI had diverse educational applications, most prominently for lesson planning (100% of participants), followed by materials creation, assessment design, and interactive activity development. Teachers utilized AI across a spectrum of pedagogical tasks: Lesson planning and test design, including generating grammar exercises tailored to proficiency levels and creating vocabulary activities aligned with curriculum objectives; creative resource development such as worksheets, comic-strip dialogue prompts for writing/speaking practice, and storytelling visuals; visual and storytelling aids including AI-generated graphics and interactive vocabulary games; writing and editing, where tools like ChatGPT produced initial drafts, improved grammar and tone, and suggested alternative phrasings; and research and brainstorming, notably explaining technical concepts in simple terms and generating slogans or project ideas. For instance, T3 stated, "*AI has been used to create grammar exercises designed for different levels of students; I also often use AI to create interactive resources.*"

Figure 7. Most widely used artificial intelligence methods in teaching

Despite AI's transformative potential, teachers emphasized that their fundamental role remained unchanged. Rather, AI reshaped how they fulfilled teaching responsibilities. T3 explained, "*I think that my rule will shift from mainly providing information to guiding the students on how to use AI responsibly, helping them build confidence, think independently, and become future-ready learners.*" Teachers described new responsibilities, including scaffolding AI use, moderating AI-led discussions, and fact-checking AI-generated content for accuracy and cultural appropriateness. T6 explained, "*Generative artificial intelligence is reshaping many roles, and mine is no exception. With generative artificial intelligence, I am now less of a content creator and more of a facilitator, helping students learn how to use these tools effectively and critically.*" Rather

than simply delivering content, teachers now see themselves as interactive partners in co-creating learning experiences: they guide students in effective prompt design, curate AI-generated resources, and foster critical reflection on AI output. This evolution reflects a shift from content delivery to learning design, where teachers co-create with AI while maintaining essential pedagogical judgment, cultural mediation, and student support functions.

5. Discussion

This study examined Saudi secondary EFL teachers' attitudes toward AI (RQ1), perceived benefits and challenges of AI tools (RQ1a), impact of targeted AI pedagogical intervention on perspectives (RQ1b), and how teachers adapted traditional methods to integrate AI tools (RQ2). Findings demonstrated that GenAI can meaningfully enhance EFL instruction when teachers receive appropriate training and support.

5.1. Teachers' attitudes and AI integration

Initially, teachers exhibited moderate confidence and reported sporadic experimentation with AI, primarily for research rather than instructional design. Following intervention, 100% actively used AI tools for lesson planning, materials design, and assessments, with all confirming that AI improved teaching effectiveness. This positive shift in self-reported competence and perceived usefulness aligns with An et al.'s (2022) model showing that perceived usefulness and ease of use strongly drive adoption. Similarly, targeted interventions develop GenAI competence among teachers (Moorhouse et al., 2024), reinforcing structured training's value. Present findings echo Moorhouse's (2024) evidence that targeted AI training equips teachers to leverage GenAI for differentiated instruction and adaptive feedback, and Moorhouse and Kohnke's (2024) demonstration that AI integration fosters innovative activities underpinned by real-time analytics.

Beyond procedural changes, AI integration reshaped teachers' roles from content deliverers to learning designers who co-create with AI. Teachers guide students in prompt crafting, curate AI output, and foster critical reflection, an evolution aligning with Busso and Sanchez's (2024) findings in Japanese EFL contexts where AI integration shifted roles toward facilitation and independent learning support. Integration of AI-generated visuals, interactive quizzes, and multimodal materials reflects broader calls to harness digital tools for richer communicative experiences (Chiu, 2024; Gisbert Cervera & Caena, 2022). Rather than replacing instructors, AI empowered them as facilitators and co-designers, supporting blended student-centered pedagogy where human insight and AI efficiency combine to enrich learning.

5.2. Benefits and challenges of AI tools

Teachers identified personalization, time savings, and increased student engagement as primary benefits, lending credence to Abernathy's (2024) assertion that AI serves as "supplementary support" by tailoring exercises to individual needs. However, teachers raised persistent concerns regarding

prompt precision, occasional inaccuracies, cultural appropriateness, over-reliance, and data privacy. These issues reflect well-documented challenges: the need for careful prompt design and critical oversight guarding against bias and inaccuracy (Meyer et al., 2023), the absence of emotional intelligence, and ethical concerns around data privacy and equitable access. These limitations echo those documented by Chounta et al. (2021) and highlight the necessity of critical oversight and robust ethical guidelines (Chan, 2023).

Both interview and survey data aligned with recent literature emphasizing AI's role in personalizing instruction and reducing teacher workload. As Chiu (2024) argues, GenAI transforms educators' roles by automating routine tasks and enabling more student-centered activities, an effect reflected in participants' reports of increased classroom engagement and differentiated learning experiences. Post-intervention data showed AI-enabled tasks moved beyond planning to interactive student-centered activities, such as comic-strip dialogues, adaptive reading passages, and pronunciation exercises. Teachers credited AI with fostering improvements across vocabulary, reading, writing, speaking, listening, and grammar, outcomes consistent with Moorhouse and Kohnke's (2024) findings that AI integration supports differentiated skill development and Nguyen et al.'s (2025) evidence that AI conversational partners boost willingness to communicate.

6. Conclusion

This study investigated how Saudi secondary EFL teachers perceive and integrate GenAI into classrooms and whether targeted pedagogical intervention strengthens these practices. Employing an exploratory qualitative design with pre- and post-intervention questionnaires and semi-structured interviews enabled quantification of shifts in self-reported competence while capturing nuanced lived experiences. Results demonstrated marked transformation in teachers' attitudes and behaviors following Zoom-based training. Where many initially used AI tools sporadically or only for research purposes, all participants, after the intervention, began to regularly employ AI for lesson planning, materials creation, and assessment design, confirming that perceived usefulness and ease of use drive technology adoption. Furthermore, findings highlighted teacher awareness of the AI benefits for teaching, rapid content generation, personalized learning support, and administrative efficiency, alongside being mindful of the persistent AI challenges that require attention: over-reliance risks, cultural appropriateness concerns, accuracy limitations, and equity issues around access and data privacy.

The study has several pedagogical implications; first, findings underscore the importance of integrating AI training into teacher-education programs and ongoing professional development. Institutions should provide stable infrastructure, access to AI platforms, and ethical-use frameworks to maximize benefits and mitigate risks (Kildė, 2024; Lo, 2025). Embedding digital literacy into the EFL curriculum ensures students can effectively and responsibly leverage AI tools. In addition, teachers need ongoing professional development, clear ethical guidelines, and a robust infrastructure to ensure that AI acts as an inclusive, responsible educational partner. Teachers' persistent concerns

about cultural appropriateness, over-reliance risks, equity issues, and data privacy (Abernathy, 2024; Chan, 2023; Kildė, 2024) necessitate comprehensive support systems addressing both technical skills and ethical implementation. Finally, sustainable AI integration requires longitudinal research that measures student outcomes and explores diverse educational contexts (Nguyen et al., 2025; Lo, 2025). By systematically addressing both affordances and constraints of GenAI, educators and policymakers can harness its full potential to enhance creativity, personalization, and learner autonomy while maintaining teachers' indispensable roles as mentors, guides, and critical thinkers in the digital age.

The study has some limitations that need to be considered. The limited scope of this study, which is 11 female teachers in Saudi public schools, may affect generalizability. Findings are situated within specific contextual parameters: gender-segregated educational system, Saudi cultural framework, secondary education level, and public-school infrastructure. While providing valuable insights into AI integration within this particular context, results may not directly transfer to male teachers, mixed-gender schools, private institutions, or educational systems in other countries with different cultural, infrastructural, or policy frameworks. Additionally, the intervention focused specifically on ChatGPT and related GenAI tools, meaning findings may not fully apply to other AI technologies or future tool iterations. The study captured perspectives during 2024–2025 amid rapid AI development; teacher attitudes and practices may evolve as technology advances and institutional support structures develop. Future research should include larger, more diverse samples, control groups, and longitudinal designs assessing sustained effects. Investigating students' perspectives on AI-mediated learning and measuring objective gains in language skills would further enrich understanding. Research across multiple contexts, including male teachers, different educational levels, private institutions, and international settings, would enhance knowledge of AI integration's broader applicability and effectiveness.

Finally, this research contributes to the growing literature on AI in education by amplifying the voices of teachers at the frontlines of AI integration, whose insights are essential for creating equitable, ethical, and effective learning environments. Looking ahead, sustainable AI integration requires longitudinal research that measures student outcomes and explores diverse educational contexts. By systematically addressing both GenAI's affordances and constraints, educators and policymakers can harness its potential to enhance creativity, personalization, and learner autonomy while preserving teachers' indispensable roles in the digital age.

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Appendices

Appendix A

Pre-Questionnaire

1. Name
2. Phone number
3. Teaching level (Elementary/Intermediate/Secondary)
4. Did you receive training for using AI tools in teaching? (Yes/No)
5. How competent do you think you are in using technology for teaching? (very competent/competent/incompetent/very incompetent)
6. How familiar are you with generative AI tools (e.g., ChatGPT, Gemini, Gamma, etc.)? (very familiar/familiar/unfamiliar/very unfamiliar)
7. Have you used any generative AI tools? yes/no
8. If yes, what are the names of the tools and how do you use them? If not, why not?
9. Do you think generative AI tools can help you be a more effective English output skills (speaking and writing) teacher? Yes/No
10. If yes, how can they help you?

    – If your response was No, why do you think they cannot help you?
11. Do you have any concerns or worries about the use of generative AI tools in teaching English? Yes/No
12. If yes, what are your concerns or worries? If not, why do you not have any concerns?
13. What would you like to know about the use of generative AI in teaching English skills?

Appendix B

Post-Questionnaire

1. Name
2. Teaching level (Elementary/Intermediate/Secondary)
3. How competent do you think you are in using technology for teaching? (very competent/competent/incompetent/very incompetent)
4. How familiar are you with generative AI tools (e.g., ChatGPT, Gemini, Gamma, etc.)? (very familiar/ familiar/unfamiliar/very unfamiliar)
5. Do you think generative AI tools can help you be a more effective English output skills (speaking and writing) teacher?
6. If yes, how can they help you? If not, why do you think they cannot help you?
7. Do you have any concerns or worries about the use of generative AI tools in teaching English?
8. If yes, what are your concerns or worries? If not, why do you not have any concerns?
9. What have you learned from this course about the use of generative AI in teaching English skills?

Appendix C

Semi-Interview Questions

1. What learning goals do you have for your students?
2. How was your overall experience in using AI to enhance your teaching practices?
3. In which way did you use AI the most? Can you explain and provide examples?
4. What are the strengths and limitations of AI tools that you found as you use them to facilitate your teaching practices?
5. How do you see your role changing considering generative AI?
6. How do you see English language teaching changing after integrating generative AI?
7. What language skills could be improved as a result of using AI in your teaching?

In addition to questions from the questionnaire's items for deeper understanding of teachers' attitudes and practices.