



ChatGPT-Mediated Materials and Assessment Design in an Omani EFL Foundation Programme: An Intelligent-TPACK Case Study

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ChatGPT-Mediated Materials and Assessment Design in an Omani EFL Foundation Programme: An Intelligent-TPACK Case Study

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Abstract

Generative artificial intelligence can accelerate English-as-a-foreign-language (EFL) materials and assessment design, yet its pedagogical value depends on teachers' capacity to evaluate linguistic quality, contextual appropriateness, and ethical risk. This interpretive case study examined how five General Foundation Programme EFL teachers at Sohar University, Oman, used ChatGPT to prepare instructional materials and design assessments. Semi-structured interview data were analysed deductively in NVivo through the Intelligent-TPACK framework and Braun and Clarke's six-phase thematic procedure. The teachers used ChatGPT to develop speaking and writing tasks, reading passages, vocabulary and grammar exercises, lesson ideas, and formative assessments. Effective use was described as an iterative process involving explicit prompts, proficiency-level specifications, learning outcomes, templates or tables of specifications, output checking, and prompt refinement. Participants valued efficiency, ideation, and adaptability, but reported concerns about inaccurate or unreliable content, weak coherence and authenticity, cultural inappropriateness, data privacy, academic integrity, overreliance, and the possible erosion of teacher and learner creativity. The study shows that productive teacher-AI interaction is not one-step automation but a cycle of pedagogical specification, linguistic validation, contextual adaptation, and ethical judgement. It recommends targeted professional development and institution-level guidance for responsible generative-AI use in language teaching and assessment.

Keywords: ChatGPT; EFL; Generative Artificial Intelligence; Intelligent-TPACK; Language Assessment; Materials Development.

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Language,
Technology,
and Social Media



INTRODUCTION

Large language models have moved generative artificial intelligence from a specialist technology to an everyday interface through which teachers can request explanations, examples, activities, feedback, and assessment content in natural language. In English language teaching (ELT), this shift is especially consequential because the technology operates through language while also shaping how language is selected, simplified, contextualised, evaluated, and taught. Recent syntheses show that generative AI can support content development, differentiated instruction, feedback, and teacher productivity, although its educational value remains dependent on human pedagogical judgement [1], [2], [3].

For teachers, ChatGPT can function as a planning partner, activity generator, language model, and preliminary evaluator. It can assist with lesson preparation, brainstorming, text adaptation, exercise design, and formative assessment, thereby reducing routine preparation time and creating space for higher-value interaction with learners [4], [5]. At the same time, the system can generate plausible but inaccurate content, encourage uncritical dependence, and complicate the development of writing, creativity, critical thinking, and problem-solving when its outputs are adopted without verification [6], [7].

The emerging evidence therefore challenges simple claims that generative AI is either intrinsically transformative or inherently harmful. Systematic reviews indicate that the field is expanding rapidly but remains uneven in theoretical grounding, empirical design, and attention to teacher practice [8]. In language education specifically, researchers have called for context-sensitive investigation of how teachers negotiate linguistic variation, cultural meaning, instructional goals, and the tendency of large language models to privilege standardised forms of English [9]. Existing scholarship also emphasises that effective adoption requires prompt literacy, critical output evaluation, and pedagogically purposeful integration rather than the transfer of instructional decisions to the tool [10], [11].

Teacher-centred evidence is still comparatively limited. Exploratory work has shown that language teachers use ChatGPT as a content provider, teaching assistant, and evaluator, but that they must assume more critical professional roles when deciding whether outputs are accurate, level-appropriate, and instructionally defensible [12]. This need is particularly salient in Oman, where research on educators' practical incorporation of AI into English teaching remains scarce [13]. Studies in other settings suggest that perceived usefulness and ease of use affect teachers' adoption intentions [14], while EFL teachers simultaneously recognise efficiency gains and express concerns about reliability, preparedness, and the effects of AI on professional agency [15], [16].

Assessment design intensifies these tensions. Generative AI can produce rubrics, item variants, practice tasks, and preliminary feedback, but its outputs may not faithfully represent the intended construct, learner proficiency, local curriculum, or cultural context. Large-scale evidence on academic communication indicates that users value AI feedback for grammar and writing, yet usefulness varies across language skills [17]. Contemporary assessment scholarship consequently argues for redesign principles that retain human oversight and make learning processes visible, while education-sector analyses highlight the need for institutional governance, transparency, and responsible data practices [18], [19].

To examine these intersecting demands, the study is grounded in the Technological Pedagogical Content Knowledge (TPACK) framework and its Intelligent-TPACK extension [20], [21]. This conceptual foundation enables the analysis to connect AI capability with language-

specific content knowledge, pedagogical decision-making, and ethical responsibility; its detailed development is presented in the Literature Review.

Against this background, the study investigates the practices of General Foundation Programme (GFP) EFL instructors at Sohar University. It asks: (1) How do GFP EFL instructors use ChatGPT to prepare instructional materials and design assessments? and (2) What challenges and concerns do GFP EFL teachers experience when using ChatGPT for these purposes? The study contributes a context-specific account of teacher–AI interaction in an Omani foundation programme and reframes effective use as an iterative cycle of pedagogical specification, linguistic validation, contextual adaptation, and ethical judgement. This contribution places language—not technology alone—at the centre of the analysis by examining how teachers evaluate wording, proficiency level, coherence, authenticity, and cultural appropriateness in AI-generated instructional content.

LITERATURE REVIEW

Generative AI in English Language Teaching

Generative artificial intelligence has distinctive significance for English language teaching because language is simultaneously the medium through which users interact with the system and the principal object of instruction. In EFL settings, ChatGPT can generate explanations, model texts, dialogues, examples, and task variations while adapting lexical density, syntactic complexity, genre, and register to a teacher’s prompt [1], [2], [3]. These capabilities can support differentiated instruction and rapid materials development; however, fluent output cannot be equated with linguistic, factual, or pedagogical validity. Reviews of the field continue to identify uneven empirical evidence and insufficient attention to how teachers evaluate language quality in authentic instructional settings [8].

A language-centred perspective also requires attention to sociolinguistic and cultural representation. Large language models may privilege standardised English, flatten regional or multilingual variation, and generate examples that are pragmatically unnatural or culturally misaligned [9]. Consequently, the educational value of generated content depends on whether teachers assess not only grammatical accuracy but also learner proficiency, discourse purpose, authenticity, inclusiveness, cultural appropriateness, and alignment with the local communicative context.

ChatGPT for Instructional Materials and Assessment Design

Existing studies describe ChatGPT as a planning partner, content provider, teaching assistant, and preliminary evaluator. Teachers have used it to formulate lesson plans, adapt reading passages, create vocabulary and grammar exercises, generate speaking and writing prompts, and prepare formative assessment activities [4], [5], [12]. Its principal affordances are speed, variability, and the capacity to produce multiple versions of content for different learner profiles. Nevertheless, these affordances remain pedagogically useful only when the generated material is treated as a provisional draft rather than as a ready-to-use instructional product [6], [7].

Assessment applications require particularly strong human oversight. AI-generated items, rubrics, model responses, or feedback may fail to represent the intended construct, introduce ambiguous wording, provide unreliable answer keys, or mismatch the target proficiency level.

Although users often value AI feedback for grammar and writing, its perceived usefulness is not uniform across language skills [17]. Current assessment scholarship therefore recommends transparent redesign, verification against learning outcomes and scoring criteria, and retention of teachers' final authority over validity, fairness, feedback, and consequential decisions [18], [19].

Teacher Agency, Prompt Literacy, and Ethical Mediation

Teachers' adoption of ChatGPT is influenced by perceived usefulness and ease of use, but adoption intention alone does not determine the quality of classroom integration [14]. Effective practice requires teacher agency: the capacity to decide when AI is educationally warranted, how its role should be bounded, and what forms of evidence are necessary before an output is accepted. Research on EFL educators accordingly emphasises iterative prompting, professional judgement, and critical evaluation of accuracy, level, and instructional defensibility [10], [11], [15], [16].

Prompt literacy involves translating pedagogical intentions into explicit instructions concerning the learner profile, learning outcome, linguistic focus, genre, difficulty, response format, cultural setting, and assessment constraints. It must be complemented by output literacy: the ability to detect hallucination, bias, inconsistency, inappropriate language, privacy risks, and threats to academic integrity. Reviews of language-teacher education and empirical studies of epistemic agency indicate that professional development should therefore combine technical competence with reflective, ethical, and context-sensitive decision-making [22], [23]. A basic understanding of how generative systems produce probabilistic language is equally important because polished prose may conceal unsupported or inaccurate claims [24].

Intelligent-TPACK as an Analytical Framework

TPACK conceptualises effective technology integration as the dynamic relationship among technological, pedagogical, and content knowledge [20]. Intelligent-TPACK extends this relationship to AI-based systems by making teachers' knowledge of model capabilities, pedagogical affordances, disciplinary applications, integrated use, and ethical consequences explicit [21]. For EFL teaching, this extension is especially relevant because teachers must judge both what the technology can generate and how the generated language functions within a specific curriculum, proficiency level, communicative purpose, and sociocultural environment.

The analysis operationalised five interconnected dimensions. Intelligent technological knowledge concerns awareness of what AI-based tools can and cannot do. Intelligent technological-pedagogical knowledge concerns how those capabilities can support or constrain teaching strategies. Intelligent technological-content knowledge concerns the relationship between AI functionality and the linguistic or disciplinary content being taught. Intelligent-TPACK refers to teachers' integrated selection and use of AI for specific pedagogical purposes. Ethics concerns critical judgement about fairness, transparency, accountability, inclusiveness, privacy, and the consequences of AI-supported practice [21]. These dimensions were used as sensitising categories rather than as a checklist that predetermined participants' experiences.

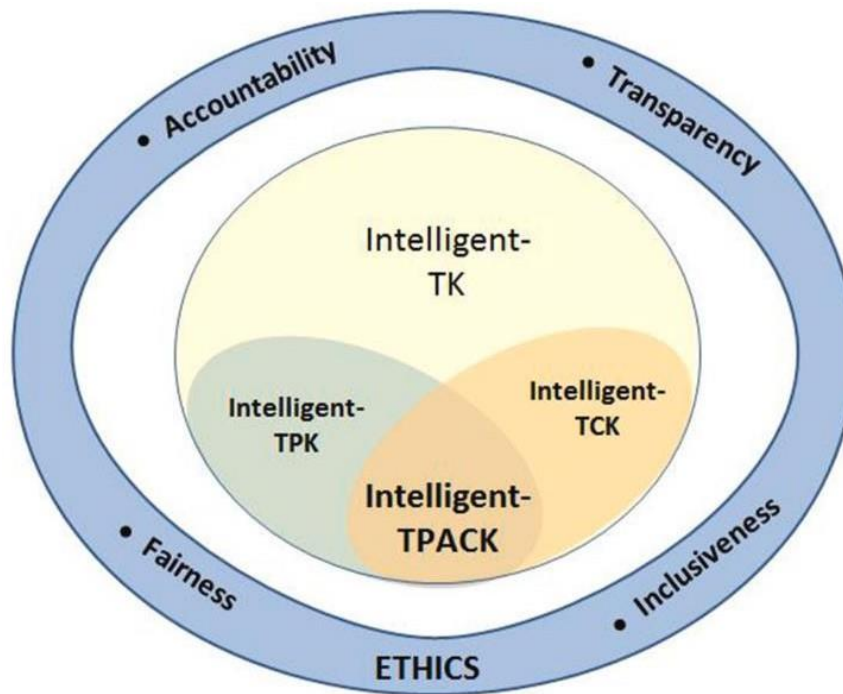


Figure 1. Intelligent-TPACK Framework and Its Components [21]

METHODS

Research Design and Context

The study adopted an interpretive qualitative case-study design. A case study is appropriate when a bounded phenomenon must be understood through participants' meanings and practices in its real-life context [25]. The bounded case comprised EFL instructors in the General Foundation Programme at Sohar University who were already using ChatGPT for professional tasks. The design focused on how participants understood the tool, how they incorporated it into materials and assessment work, and how they evaluated its benefits and risks.

Participants and Sampling

Purposive sampling was used to recruit information-rich participants with direct experience of the phenomenon [26]. The sample consisted of five GFP EFL teachers whose teaching experience ranged from 3 to 34 years and included novice and experienced instructors. The small sample is consistent with the exploratory, context-bound purpose of the study; it was not intended to estimate population prevalence. Table 1 reports the participant characteristics supplied in the original dataset.

Table 1. Demographic Characteristics of Participants

Participant's ID	Gender	Experience	Years of experience
Teacher 1	male	experienced	30
Teacher 2	male	experienced	33
Teacher 3	female	novice	3
Teacher 4	female	novice	4
Teacher 5	male	experienced	34

Data Collection

Data were collected through semi-structured interviews. The open-ended protocol addressed participants' uses of ChatGPT in EFL teaching, perceived benefits, materials preparation, assessment design, interaction strategies, output evaluation, challenges, support needs, and ethical concerns. Follow-up questions were used to clarify meanings and elicit examples. The complete interview protocol is reproduced in [Appendix 1](#) so that the relationship between the research questions and the interview prompts is transparent.

Data Analysis

The interviews were transcribed with SpeakApp, an AI-supported mobile transcription application, and the researcher subsequently checked the transcripts for content accuracy. The verified transcripts were imported into NVivo. A deductive thematic analysis was then conducted using Braun and Clarke's six-phase procedure: familiarisation, initial coding, theme development, theme review, theme definition and naming, and reporting [27]. Intelligent-TPACK informed four organising themes: perceptions and benefits; materials and assessment uses; interaction and evaluation strategies; and challenges and concerns. The complete NVivo codebook is preserved in [Appendix 2](#). Coding-reference counts are reported as indicators of coding density, not as estimates of how many teachers endorsed a position.

Trustworthiness, Positionality, and Ethics

The researcher was an experienced EFL instructor working in the same programme as the participants. This insider position supported contextual understanding and rapport, but it also created a risk that familiar assumptions could influence interpretation. Positionality was therefore acknowledged explicitly, and participant validation was used to strengthen credibility [28]. Interview transcripts and the interpreted findings were returned to participants for confirmation through a structured member-checking process [29]. Procedures followed Lancaster University's published ethics guidance [30]. Participation was voluntary, informed consent was obtained, pseudonyms were used in reporting, and the data were stored on a password-protected computer accessible only to the researcher.

RESULTS AND DISCUSSION

Results

The thematic analysis produced four interrelated findings. The first concerns teachers' overall orientations toward ChatGPT and its perceived pedagogical value. The second identifies the materials and assessment tasks for which it was used. The third explains how teachers prompted, refined, and evaluated outputs. The fourth addresses reliability, cultural, developmental, privacy, and integrity concerns. Quotations are retained to preserve participants' meanings, and the subsequent discussion connects the findings to Intelligent-TPACK and current scholarship.

Positive Orientations and Pedagogical Affordances

Participants generally described ChatGPT as helpful, time-saving, creative, and responsive to contemporary instructional demands. The Theme 1 codebook contained 36 coding references across all five interview files. These references covered lesson planning, proofreading, brainstorming, draft generation, contextualised paragraph production, activity design, writing evaluation, and

support for learners who struggled to generate ideas. Figure 2 visualises the recurring evaluative phrases used by participants.

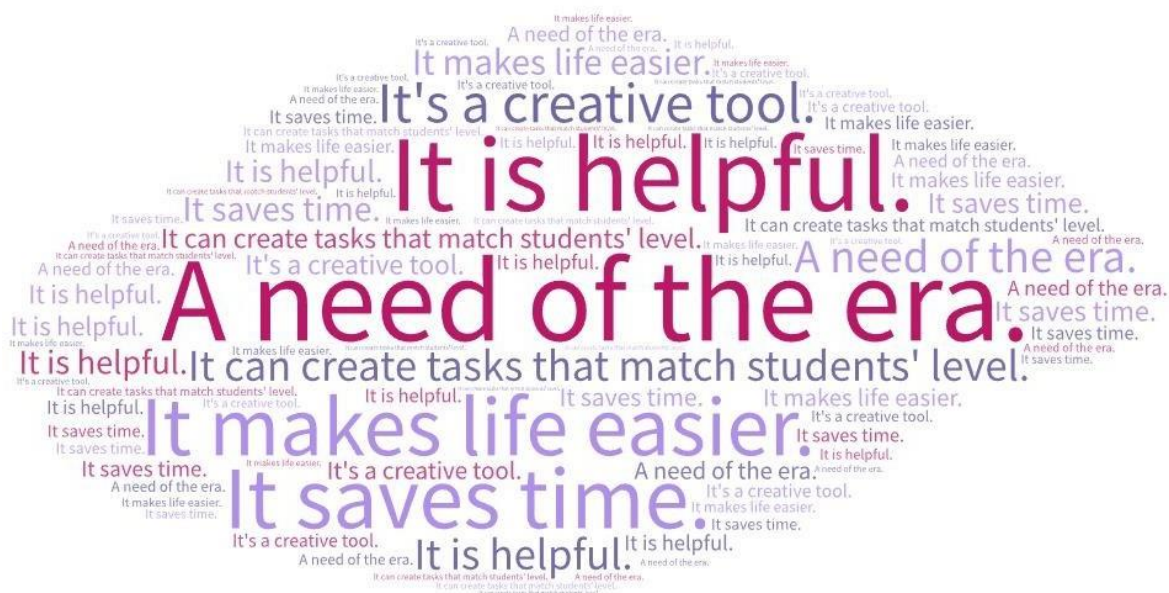


Figure 2. Participants' Attitudes Toward Using ChatGPT

“ChatGPT is good support for [my students]. It saves them when they are unable to come up with points to develop a writing activity. It provides lots of ideas—sometimes, ideas that never come to mind. So, I think it is a resourceful device for brainstorming.” (Teacher 2)
“I often use it to create different exercises based on a core text.” (Teacher 4)

These accounts show that perceived usefulness was not confined to speed. Teachers valued the tool because it could extend the range of examples and activities available during preparation and could provide a starting point when learners or teachers faced an ideational impasse. However, participants did not equate usefulness with autonomous instructional authority; the perceived value of an output depended on subsequent teacher review.

Materials Preparation and Assessment Design

The Theme 2 codebook contained 30 coding references across all five files. Teachers reported using ChatGPT to prepare speaking tasks, writing lessons, reading passages, vocabulary activities, grammar exercises, and contextual examples. Teacher 5 described using it “in different ways,” including the creation of vocabulary-related tasks. Teacher 4 entered target vocabulary and requested sentences and pictures for matching activities. Such practices demonstrate the combination of technological knowledge with knowledge of language content and task design.

“I use it for formative assessment because it aligns well with this goal. For example, after teaching specific language items such as vocabulary or grammar, I ask ChatGPT to generate a short cloze text or a paragraph including those items.” (Teacher 4)

Participants also used the system to transform source texts and produce preliminary assessment materials. Teacher 1 described expanding a reading passage from approximately 200 to 400 words. Teacher 4 experimented with uploading the programme's writing rubric and reported

that the generated feedback was broadly consistent with the teacher's own judgement. Nevertheless, the practices were concentrated on formative and preparatory purposes. Some participants hesitated to rely on ChatGPT for consequential assessment because they did not consider its output sufficiently stable.

"Yeah, I do not rely on it too much because I noticed it is unreliable." (Teacher 3)

The contrast between experimentation and restraint is important. It indicates that teachers were not simply "adopting" ChatGPT; they were assigning it bounded roles. Content generation and preliminary feedback were considered useful when teachers retained control over construct alignment, language level, and final decisions.

Prompting, Iteration, and Output Evaluation

Theme 3 was the most densely coded, with 47 references across all five files. Participants emphasised that usable outputs depended on precise instructions. They specified the target proficiency level, context, learning outcomes, text length, task form, and sometimes a template or table of specifications. When an output did not meet expectations, they added constraints, paraphrased the prompt, requested alternatives, or asked the system to simplify the language.

"Giving clear instructions is the first thing. Your requirements should be inserted correctly, so we can ensure that it generates what we need." (Teacher 5)
"I always start by giving clear and specific prompts." (Teacher 4)

Participants also reported that prompting competence developed through repeated use. Teacher 4 stated that being specific had become easier over time, while Teacher 5 contrasted earlier unfamiliarity with a growing ability to formulate instructions. This learning trajectory reflects Intelligent technological knowledge, but the teachers' accounts show that prompt skill alone was insufficient. They also checked whether the output met course requirements, matched students' proficiency, represented the intended language feature, and remained appropriate to the local culture. Peer checking was mentioned as an additional validation strategy.

Accordingly, the teacher–AI workflow can be represented as a four-stage cycle: pedagogical specification, AI generation, linguistic and contextual evaluation, and iterative revision. This cycle explains why participants regarded ChatGPT as a draft-producing partner rather than a source of ready-to-use instructional content.

Reliability, Cultural Appropriateness, and Ethical Risk

Theme 4 contained 35 coding references across the five files. The most immediate challenge was the time required to inspect and revise generated content. Participants encountered texts that did not match learner proficiency, lacked coherence or authenticity, sounded robotic, or did not fit the cultural context. Prompt-engineering difficulty and uneven technological competence could further reduce the usefulness of the system.

“Regarding my use of ChatGPT, the challenge is that the material generated must always be adapted to add coherence and authenticity or meet the students’ level. So, we can never get ChatGPT to give us an assessment activity, for example, and use it immediately. There should be another stage where you try to humanize ChatGPT’s product.” (Teacher 2)

“It is not just something ready that I can just take and use. Yeah, I need to check.” (Teacher 3)

“I will have to go through it repeatedly to ensure that the language is aligned with our course objectives and outcomes and appropriate to the culture.” (Teacher 4)

Beyond output quality, participants raised concerns about cheating, integrity, privacy, overdependence, authenticity, professional development, and the possible weakening of creativity. Teacher 1 observed that maintaining assessment integrity had become more difficult, while Teacher 4 warned that habitual reliance could diminish teachers’ motivation to develop original materials. Participants therefore requested professional-development workshops, collegial sharing of effective practices, and an institutional framework that defined responsible and unacceptable uses.

“I think we need some professional development sessions and workshops on using ChatGPT.”
(Teacher 3)

“I think there has to be some kind of a framework, an institutional framework, where teachers are given some guidelines on how to use ChatGPT.” (Teacher 2)

Discussion

The findings support a view of ChatGPT as a socio-technical teaching resource whose value emerges through human mediation rather than through model capability alone. Broad analyses of ChatGPT in education similarly identify a dual pattern of instructional opportunity and risks related to misinformation, bias, privacy, and misuse [31], [32], [33]. The present study adds a language-specific account: teachers judged outputs not only for factual correctness, but also for linguistic coherence, authenticity, proficiency-level fit, learning-outcome alignment, and cultural appropriateness. These judgements are central to EFL materials and assessment design and explain why fluent output cannot be treated as pedagogically valid output.

The positive perceptions reported by all five teachers are consistent with research showing that generative AI can expand ideation, improve efficiency, and support flexible instructional design [34], [35], [36]. However, the participants’ insistence on checking and “humanising” generated content complicates efficiency claims. Time may be saved during first-draft production but reallocated to evaluation, correction, contextualisation, and ethical decision-making. This redistribution of labour is a more accurate account of AI-supported preparation than the assumption that automation simply removes teacher work.

Concerns about integrity and overreliance also align with scholarship that warns against using detection and prohibition as the only responses to generative AI [37]. A paradoxical perspective is more productive: the same system that can scaffold ideas and formative feedback can also obscure authorship, encourage surface completion, or weaken opportunities for productive struggle [38]. Institutional policy should therefore distinguish between generative AI used to support a transparent learning process and generative AI used to replace evidence of learning.

The teachers’ use of rubrics, learning outcomes, templates, and tables of specifications suggests an emerging form of assessment literacy for AI-mediated environments. Reviews of

student chatbot use show that positive perceptions do not guarantee deep learning and that empirical evidence remains sensitive to task design and context [39]. In EFL writing, recent reviews identify benefits for feedback and revision but continue to question accuracy, dependency, and the quality of higher-order support [40]. Teacher 4's experiment with rubric-based feedback and Teacher 3's refusal to rely heavily on the tool represent complementary professional responses: cautious trial, comparison against human judgement, and rejection when reliability is inadequate.

The findings also refine the Intelligent-TPACK framework. Intelligent technological knowledge appeared in teachers' growing prompt competence. Intelligent technological-pedagogical knowledge appeared in their use of ChatGPT for brainstorming, differentiation, and formative practice. Intelligent technological-content knowledge appeared in decisions about vocabulary, grammar, reading, writing, and proficiency level. Integrated Intelligent-TPACK appeared when these knowledge domains were coordinated with outcomes and assessment specifications. The ethical dimension was not peripheral; it shaped decisions about privacy, integrity, cultural representation, and the boundaries of acceptable dependence. Research on AI-supported writing assessment [41], EFL teacher cognition [42], and strategic prompting [43] similarly indicates that effective use requires coordinated technical, pedagogical, linguistic, and evaluative knowledge.

A further contribution concerns the interactional character of teacher–AI work. The teachers did not describe a single prompt followed by passive acceptance. They described iterative dialogue: defining the instructional need, constraining the output, checking it, repairing the request, and adapting the response. This makes prompt design a form of pedagogical communication, but one that remains vulnerable to opacity because the model does not share the teacher's lived knowledge of learners and institutional context. Emerging bibliometric evidence confirms the rapid expansion of AI research in English language education [44], yet the present case suggests that future studies should examine interaction logs and produced artefacts, not only attitudes, to reveal how teachers translate professional knowledge into prompts and revisions.

The practical implication is that professional development should move beyond demonstrations of tool features. It should include prompt design tied to learning outcomes, verification of language and factual content, cultural and bias review, assessment-construct alignment, privacy-safe data practices, and transparent disclosure. Engineering-education and academic-integrity scholarship likewise recommends explicit AI literacy and task redesign rather than uncritical adoption or blanket bans [45], [46], [47], [48]. Language-teaching guidance should additionally address linguistic variation, authenticity, and the consequences of standardising model-generated English. Work on AI applications in language learning underscores the importance of positioning the technology as support for, rather than a substitute for, meaningful interaction and teacher expertise [49]. Evidence from other professional-education settings further shows that governance, curriculum, and faculty development must evolve together when generative AI becomes embedded in teaching and assessment [50].

CONCLUSION

This study examined how five GFP EFL teachers at Sohar University used ChatGPT to prepare instructional materials and design assessments and what challenges accompanied that use. The teachers employed the tool for speaking, writing, reading, vocabulary, and grammar activities; brainstorming and drafting; text adaptation; formative assessment; and experimental rubric-based

feedback. Its usefulness depended on a recurrent cycle of detailed prompting, proficiency and outcome specification, critical checking, cultural adaptation, and revision. The central conclusion is therefore that ChatGPT does not replace EFL teachers' professional knowledge; it increases the need to mobilise that knowledge at the point where generated language becomes instructional content. Through the Intelligent-TPACK lens, ethical judgement was inseparable from technological, pedagogical, and content knowledge. Institutions should respond with discipline-sensitive professional development and clear guidance on privacy, integrity, human oversight, disclosure, and appropriate assessment use. The study contributes an empirically grounded account of teacher–AI interaction in an Omani foundation programme and identifies linguistic validation and contextual adaptation as decisive conditions for responsible generative-AI integration.

LIMITATIONS

The study is bounded by one programme, one university, and five purposively selected teachers who were already using ChatGPT. Its findings are analytically transferable but not statistically generalisable. The evidence is based on self-reported practice and does not include classroom observations, prompt histories, generated artefacts, or independent comparisons of AI and teacher assessment decisions. The researcher's insider position provided contextual depth but may also have influenced disclosure and interpretation despite member checking. The rapid evolution of generative-AI systems creates an additional temporal limitation because interfaces and output quality may change. Future research should combine interviews with prompt–response logs, material and assessment artefact analysis, classroom observation, and learner outcomes; compare institutions and cultural settings; and investigate how teacher expertise develops through sustained use.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

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DECLARATION OF USE OF AI IN SCIENTIFIC WRITING

The author used ChatGPT (OpenAI) to support language editing, structural refinement, and reference-format checking during manuscript preparation. The author reviewed and verified the revised content, retained responsibility for all interpretations and claims, and assumes full responsibility for the published work.

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