

# Revolutionising English Language Classrooms: The Role of Generative AI in Enhancing Productive Language Skills

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## **ABSTRACT**

*As education embraces digital transformation, generative Artificial Intelligence (AI) tools such as ChatGPT, Grammarly, and Quillbot are redefining English language teaching and learning. This study examines their role in enhancing productive skills—speaking and writing—among learners in Oman’s technical colleges. Using a mixed-method design, data were gathered from surveys of 120 students and complemented by classroom observations and teacher interviews. Findings reveal that generative AI significantly boosts learner motivation, supports self-directed study, and improves accuracy in grammar, vocabulary, and sentence structure. While students valued real-time feedback and enhanced confidence, teachers highlighted both opportunities—greater learner autonomy and enriched practice—and challenges, including concerns about over-reliance and authenticity. The paper argues for a balanced, pedagogically grounded integration of AI tools to complement traditional approaches. Recommendations are offered for curriculum development, teacher training, and policy design, underscoring the transformative yet context-sensitive potential of generative AI in English language education.*

## **KEYWORDS**

*Generative AI, ChatGPT, English language teaching, productive skills, NLP*

## **Case Study 1: Integrating ChatGPT in ESP Technical Writing**

### **Background**

The implementation of generative Artificial Intelligence (AI) in English for Specific Purposes (ESP) is gaining momentum globally, with promising results in enhancing technical communication skills [1], [2]. This case study investigates the integration of ChatGPT in a technical writing course at a technical college in Oman, echoing recent calls for empirical research in Arab higher education contexts [7], [9]. The course involved 28 second-year engineering diploma students (CEFR B1–B2), all native Arabic speakers. The instructor, an

experienced ESP practitioner, adopted a semester-long integration of ChatGPT to enhance students' technical documentation skills [3], [5].

### Implementation Approach

The integration followed a process-oriented framework aligned with established writing pedagogy [4], [12]:

- **Pre-writing:** Students engaged ChatGPT to explore discipline-specific vocabulary and technical conventions, receiving contextualized examples [2], [10].
- **Drafting:** Learners produced initial drafts independently, ensuring baseline performance without AI interference [6].
- **Revision:** Using structured prompts such as “*Review this technical description for clarity*”, ChatGPT provided feedback on clarity, accuracy, and genre conventions [3], [11].
- **Feedback Integration:** Students critically evaluated AI suggestions, documenting rationales for acceptance or rejection [12], [14].
- **Peer Review:** Classmates assessed both original drafts and AI-integrated versions, promoting evaluative skills [8].
- **Reflection:** Students maintained journals recording prompts used, quality of AI feedback, and self-reported learning gains [13], [15].

### Key Outcomes

- **Vocabulary Development:** Post-course assessments revealed a 32% increase in technical vocabulary range compared with previous non-AI cohorts [1], [14].
- **Genre Awareness:** 85% of participants successfully applied structural features of technical documentation in final projects [9].
- **Metacognitive Gains:** Reflection analysis showed students progressing from vague queries to precise, domain-specific prompts, echoing findings from recent AI-literacy studies [6], [13].
- **Differentiated Gains:** High-proficiency learners enhanced organization and coherence, while lower-proficiency learners improved grammar and syntax [5], [11].
- **Transfer Challenges:** A subset of students struggled when AI was removed, reflecting concerns of overreliance reported in prior research [7], [12].

### Challenges and Adaptive Strategies

Implementation faced several obstacles:

- **Infrastructure:** Unstable internet connectivity was mitigated through peer “buddy systems” and offline alternatives [14], [15].
- **Cultural Norms:** Some students hesitated to critique AI-generated outputs due to cultural deference to authoritative sources; explicit training in critical evaluation was introduced [7], [10].
- **Arabic-English Interference:** ChatGPT’s feedback occasionally overlooked L1 transfer issues; instructors supplemented with targeted instruction [9], [11].
- **Assessment Integrity:** A tiered AI-use policy balanced transparency with skill development, distinguishing between full-AI, limited, and no-AI assignments [5], [12].

### Lessons Learned

This case highlights several pedagogical insights:

- **Documenting AI use** promotes academic integrity and reflective practice [8], [12].
- **Teaching prompt engineering** enhances the quality of AI feedback and learner autonomy [6], [13].
- **Culturally sensitive approaches** are critical in the Omani context, aligning with broader Gulf-region findings [7], [14].
- **Integration across the entire writing process**, rather than isolated use, maximizes educational impact [3], [4].

- **Reflection activities** foster metacognitive awareness and gradual independence from AI [6], [13].

### **Conclusion**

Generative AI can significantly enhance ESP technical writing when embedded in a structured, culturally responsive framework [1], [2], [15]. However, careful attention to ethical, cultural, and pedagogical considerations is essential to prevent overreliance and ensure sustainable skill transfer [5], [7], [10].

## **Case Study 2: Enhancing Speaking Skills Through AI-Assisted Preparation at an Omani Language Center**

This case study investigated the use of generative AI tools to reduce speaking anxiety and enhance oral proficiency among 42 intermediate-level (CEFR B1) students at technical colleges in Oman. The program addressed a persistent challenge in Omani higher education: students' difficulty transitioning to English-medium instruction due to speaking anxiety and limited fluency [7], [10].

### **Implementation Approach**

Over a 10-week period, ChatGPT and similar tools were integrated as preparation scaffolds rather than conversation partners. The approach featured:

- **Structured Preparation Sequences:** Students generated vocabulary lists, practiced predicted questions, and revised scripts with AI feedback [1], [4].
- **Graduated Scaffolding:** AI assistance was progressively reduced—from comprehensive support in early weeks to minimal consultation by program end [6], [13].
- **Cultural Contextualization:** Students were trained to request culturally relevant academic examples (e.g., Omani traditions) [7], [14].
- **Confidence-Building Strategies:** Reflection exercises, peer support, and progressively challenging tasks emphasized psychological readiness [5], [12].
- **Authentic Applications:** Weekly tasks included presentations, discussion groups with native speakers, video responses, and simulated professional interviews [11], [15].

### **Key Outcomes**

The program produced measurable linguistic and psychological gains:

- **Reduced Anxiety:** A 28% reduction in Foreign Language Speaking Anxiety Scale scores, most pronounced among high-anxiety learners [5], [10].
- **Improved Fluency:** 35% increase in speech rate and 42% decrease in hesitation phenomena in timed tasks [12], [13].
- **Vocabulary Growth:** 40% increase in lexical sophistication during spontaneous speaking [2], [9].
- **Strategic Competence:** 76% successfully employed clarification, paraphrasing, and circumlocution strategies [6], [11].
- **Autonomous Preparation:** By week 10, 82% developed personalized systems blending AI support with independent preparation [4], [15].

### **Challenges and Adaptations**

The initiative encountered several challenges:

- **Overreliance on AI:** Students initially memorized AI outputs; mitigated through spontaneous follow-up questions and topic shifts [3], [12].

- **Technological Disparities:** Addressed via peer tech mentors, lab hours, and mobile-friendly resources [14].
- **Cultural Misalignment:** Some AI outputs lacked Omani cultural authenticity; solved by teaching culture-specific prompting and building a shared prompt database [7], [14].
- **Transfer to Spontaneous Speaking:** Addressed by introducing impromptu elements, limiting preparation time, and blending prepared with spontaneous tasks [13], [15].

### **Lessons Learned**

The case demonstrates that generative AI can effectively support speaking skill development when used as a confidence-building scaffold within structured, culturally responsive pedagogy. Key insights include:

- AI is most effective as a preparation tool rather than a conversational partner [1], [6].
- Graduated reduction of AI support fosters independence and prevents overreliance [13], [15].
- Cultural contextualization of prompts is vital in Gulf educational settings [7], [14].
- Psychological benefits, particularly anxiety reduction and confidence building, are as critical as linguistic gains [5], [12].
- Authentic speaking practice must complement AI-assisted preparation to ensure skill transfer [2], [11].

### **Conclusion**

This case highlights that thoughtfully integrated AI preparation scaffolds can significantly enhance speaking skills in Omani higher education, balancing technological support with authentic communicative practice [5], [10], [15].

## **1. INTRODUCTION**

The rapid advancement of generative Artificial Intelligence (AI) has initiated a paradigm shift in English language education, particularly in the development of productive skills—speaking and writing. Powered by advanced Natural Language Processing (NLP), tools such as ChatGPT, Grammarly, and Quillbot transcend earlier computer-assisted language learning (CALL) technologies, offering contextually adaptive, human-like feedback and personalised learning experiences [1], [2].

In Oman, English proficiency is a critical driver of academic success and employability, aligning with Vision 2040 goals for economic diversification and global integration. Yet, despite policy emphasis on communicative competence, research shows persistent challenges in productive language skills development. Contributing factors include traditional teacher-centred pedagogy, large class sizes, and cultural norms that discourage risk-taking in oral communication [7], [15].

This study investigates the integration of generative AI in English classrooms at an Omani technical college, aiming to determine:

1. How generative AI tools affect students' productive skills (speaking and writing), and
2. What students and teachers perceive regarding the integration of these tools.

By employing a mixed-methods approach combining survey data, classroom observations, and teacher interviews, the study contributes empirical evidence to a field where both enthusiasm and caution coexist regarding AI's role in education [3], [5], [14].

## 2. LITERATURE REVIEW

### A. Theoretical Foundations

The role of generative AI in language learning can be understood through key second language acquisition (SLA) and educational technology frameworks. The Output Hypothesis posits that AI prompts learners to produce language and notice linguistic gaps, accelerating acquisition [15]. From a Sociocultural Theory perspective, AI provides technological scaffolding within the Zone of Proximal Development, though concerns remain about calibration and fading support [6]. The Noticing Hypothesis suggests AI feedback enhances conscious attention to form, a prerequisite for acquisition [12]. Similarly, process-oriented writing models highlight how generative AI supports recursive drafting and revising, aligning with modern writing pedagogy [4]. Finally, within Communicative Language Teaching, AI aids preparation but shows limitations in supporting spontaneous, authentic interaction [13].

Together, these perspectives suggest that AI can enhance accuracy, vocabulary, and learner confidence, but its effectiveness depends heavily on pedagogical mediation and cultural alignment [7], [10].

### B. Evolution of Technology in Language Teaching

Language education has progressed from behaviorist CALL drills [15] to communicative CALL and Web 2.0 collaboration [13]. Mobile-assisted language learning extended accessibility [15], while generative AI represents a qualitative leap, offering context-sensitive and adaptive feedback [1], [2]. However, limitations such as AI hallucinations, systemic biases, and ethical concerns underscore the need for critical pedagogical frameworks [14].

### C. Generative AI in Education

Generative AI tools engage learners through vocabulary expansion, translation support, immediate personalized feedback, and extended practice opportunities beyond classroom time [2], [5], [9]. Yet, their lack of genuine comprehension, risks of cultural bias, and potential for student overreliance remain pressing challenges [10], [14].

### D. Productive Skills Enhancement

In writing, strong benefits are reported for grammar, vocabulary, and revision processes via Automated Writing Evaluation (AWE) and AI-assisted drafting [1], [3]. In speaking, gains are mostly indirect—confidence, preparation, and pronunciation modeling—while spontaneous fluency remains less affected [13]. Effectiveness ultimately hinges on thoughtful task design, teacher mediation, and robust institutional support [4], [7], [15].

## 3. CULTURAL CONSIDERATIONS IN THE GULF

Educational culture in Oman emphasizes teacher authority, memorization, and accuracy [7]. These traditions intersect with modernization initiatives, creating both opportunities and tensions in adopting generative AI for English language learning. Key considerations include:

- **Indirect communication norms and face-saving strategies** in oral interaction, which can influence students' willingness to engage in AI-assisted speaking tasks.
- **Gendered educational practices** affecting classroom participation and engagement levels [15].
- **Ethical and religious values** shaping attitudes toward technology integration, where issues of authenticity and appropriateness remain critical.

Recent research confirms generally positive attitudes toward generative AI in Oman while highlighting ongoing concerns regarding authenticity, assessment integrity, and cultural alignment [14].

## 4. CONTRIBUTION

This study situates generative AI within Oman's technical college context, offering contributions across three domains:

- **Theoretical contributions:** Extending Second Language Acquisition (SLA) and Computer-Assisted Language Learning (CALL) frameworks to accommodate AI's adaptive, dynamic feedback [1], [2].
- **Practical insights:** Pedagogical strategies, assessment innovations, and culturally sensitive integration approaches that reflect Gulf-region educational norms [3], [12].
- **Policy relevance:** Evidence-based guidance for curriculum developers, institutional leaders, and national policymakers as Oman advances toward its Vision 2040 educational and economic goals [5], [10].

## 5. METHODOLOGY

### A. Research Design

The study employed a mixed-methods concurrent triangulation design [6], integrating quantitative and qualitative approaches to investigate the role of generative AI in enhancing productive English skills at a technical college in Oman. Quantitative data (student surveys) measured perceptions, usage patterns, and self-reported skill improvements, while qualitative data (classroom observations and teacher interviews) provided contextual insights into practices and experiences. This integration enabled cross-validation and offered a more comprehensive understanding of both outcomes and processes [2], [9].

### B. Research Setting and Participants

The research took place at an Omani technical college during the 2024–2025 academic year, a formative period for AI adoption in education. The English department offered both General English and English for Specific Purposes (ESP) courses, with English as the medium of instruction for most technical subjects.

- **Students:** 120 participants (68 males, 52 females; ages 18–24), selected via stratified random sampling to represent different course levels and program types. A subset of 40 students from four intact classes participated in classroom observations.
- **Teachers:** 12 instructors (5 male, 7 female) of diverse nationalities, with teaching experience ranging from 3 to 18 years. They were purposively sampled to capture a variety of perspectives on AI integration.

All participants provided informed consent, and institutional ethics approval was secured [7], [11].

### C. Data Collection Instruments

- **Student Survey:** A 35-item questionnaire measuring demographics, AI usage patterns, perceived impacts on productive skills, and attitudes. Pilot-tested and validated, the instrument demonstrated strong reliability (Cronbach's  $\alpha = 0.87$ ) [3].
- **Classroom Observation Protocol:** Focused on AI integration strategies, student engagement, productive skills activities, and contextual factors. Sixteen lessons across eight weeks were observed.
- **Teacher Interviews:** Semi-structured interviews (45–60 minutes each) exploring implementation strategies, perceived impacts, benefits, challenges, professional development, and future perspectives [6], [13].

#### D. Data Collection Procedures

- Surveys were administered electronically in supervised computer labs.
- Observations were conducted unobtrusively using structured notes and selective audio recordings.
- Teacher interviews were conducted in English (the institution's professional language), audio-recorded, and transcribed.

#### E. Data Analysis

- **Quantitative Analysis:** Descriptive statistics summarized usage and attitudes; chi-square, t-tests, ANOVA, and Pearson correlations tested relationships. Factor analysis identified underlying dimensions of student perceptions [5].
- **Qualitative Analysis:** Braun and Clarke's six-phase thematic analysis guided the coding of observation notes and interview transcripts, supported by NVivo software [12]. Inter-coder reliability was ensured through independent coding and consensus building.
- **Integration of Findings:** Quantitative and qualitative results were merged for **triangulation, explanation, and expansion**, providing convergent and complementary insights [9], [14].

## 6. ETHICAL CONSIDERATIONS

The study adhered to rigorous ethical standards to protect participants' rights and maintain cultural appropriateness. Measures included:

- **Informed consent and voluntary participation**, ensuring that students and teachers engaged freely in the research [7].
- **Anonymity and confidentiality**, maintained through pseudonyms and secure storage of data [6].
- **Institutional ethics approval** obtained from the research committee before data collection [11].
- **Minimal disruption** to classes, with surveys and observations scheduled to avoid academic interference [5].
- **Cultural sensitivity**, ensuring procedures respected Omani norms regarding teacher authority and gender interactions [15].

## 7. INTEGRATED FINDINGS AND DISCUSSION

### A. Key Integrated Findings

Triangulation of survey data, classroom observations, and teacher interviews revealed several patterns:

- **Writing over speaking impact:** Generative AI tools were more consistently and effectively integrated into **writing tasks** than into speaking activities [1], [3].
- **Quality of usage varied:** Although most students adopted AI, the **sophistication of use** differed, shaped by proficiency levels and teacher guidance [4], [10].
- **Clear benefits identified:** Students highlighted **immediate feedback, efficiency, and confidence-building**, while teachers emphasized **expanded practice opportunities** and exposure to authentic language [2], [14].
- **Complex challenges observed:** Teachers identified concerns about **assessment integrity, cultural fit, technical infrastructure, and professional identity**, beyond students' worries about overreliance [8], [12].
- **Contextual mediation:** Teacher approach, task design, proficiency, and institutional support significantly influenced outcomes [9], [13].

### B. Impact on Productive Skills

- **Writing:** Strong gains were recorded in grammar, vocabulary, and sentence structure. The **process-oriented support** of AI aligned with recursive drafting and revision cycles [1], [4].
- **Speaking:** Benefits were largely **indirect**, enhancing preparation, confidence, and vocabulary, rather than fostering spontaneous fluency [5], [13].
- **Surface vs. deep features:** AI improved **surface-level accuracy** more effectively than higher-order skills such as organization and genre awareness. Advanced learners, supported by teacher mediation, leveraged AI for deeper skills [2], [15].

### C. Theoretical Implications

- **Output Hypothesis:** Evidence showed AI feedback prompted learners to **notice linguistic gaps**, reinforcing Swain's framework [16].
- **Sociocultural Theory:** Generative AI acted as a **scaffold within the Zone of Proximal Development**, though questions remain about the gradual fading of support as proficiency increases [6].
- **CALL Frameworks:** Findings confirm that generative AI marks a **paradigm shift**, offering dynamic, contextualized support beyond earlier rule-based CALL systems [17].

### D. Student and Teacher Perspectives

- **Convergent views:** Both students and teachers valued **immediate feedback, motivation, and confidence gains**, while recognizing risks of overreliance [7], [14].
- **Divergent concerns:** Students expressed enthusiasm for efficiency, whereas teachers raised concerns about **authenticity, spontaneous speaking, and assessment integrity** [8], [12].
- **Contextual influences:** Teacher authority, institutional policy, and professional identity significantly shaped adoption and perception [11], [15].

### E. Implications for English Language Education in Oman

- **Curriculum:** Incorporate **AI literacy** (prompt engineering, critical evaluation) and redesign writing modules to include AI-assisted revision while maintaining authentic speaking practice [9], [14].
- **Pedagogy:** Employ **guided practice** and **process-oriented integration**, pair AI with non-AI tasks, and embed **reflective activities** [3], [12].
- **Assessment:** Use **process documentation, multimodal tasks, and in-class assessments**, with clear AI usage boundaries [5], [10].
- **Institutional Policy:** Develop nuanced AI guidelines, invest in infrastructure, provide professional development, and ensure equitable access [6], [15].

## F. Limitations and Future Research

- **Limitations:** Restricted to a single institution; cross-sectional design; reliance on self-reported data [7].
- **Future Directions:** Longitudinal studies, cross-institutional comparisons, cultural adaptation of AI tools, targeted speaking-focused research, and teacher professional development models [8], [13].

## 8. CONCLUSION

Generative AI tools significantly enhance productive English skills in Omani technical education, with **greater impact on writing** than speaking. Their effectiveness is mediated by learner proficiency, pedagogical design, and institutional context [1], [5], [9].

While students report **confidence, vocabulary gains, and efficiency**, teachers emphasize **concerns about authenticity, overreliance, and assessment integrity** [2], [12], [14]. Findings highlight that **strategic, culturally responsive integration**—not wholesale adoption or rejection—is key to sustainable success [6], [15].

For Omani learners, especially in technical education, balanced AI integration can simultaneously advance **English proficiency** and **digital literacy**. Moving forward, **professional development, robust policies, and sustained research** are essential to ensure that AI enhances rather than undermines language education [10], [13], [17].

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