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Enhancing English Communicative Competence Through AI Tools in Vocational Higher Education: A Study Among English for Professional Purposes (EPP) Students

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Abstract

This paper explores the impact of AI tools in promoting language competence (LC) among English for Professional Purposes (EPP) students in vocational higher education. Low LC among EPP learners has implications for academic performance, social integration, and self-confidence at the individual level, and overall student quality and graduate output at the institutional level. A qualitative study was implemented with a focus on exploring the AI tools being employed by EPP learners for language learning, the frequency of use, and the features of the AI tools that promote language competence among EPP learners. Qualitative interview data from nine (9) respondents were analyzed for codes related to the research objectives. Findings highlighted the role of AI features that support feedback, translation, vocabulary auto-suggestion, assessment, and self-monitoring in promoting language competence. Participants also believe higher language competence is related to more frequent use of these AI tools. The study bridges the current gap in the enhancement of communicative competence among EPP students and contributes to ongoing discourse on the specific role of AI-Assisted Language Learning (AALL) within the broader technology-aided language learning (TALL) and language learning strategies (LLS) discourse. Future studies employing quantitative approaches and longitudinal studies will contribute to enhancing the findings while also addressing the development of a clear model for promoting the various components and overall communicative competence of vocational EPP students.

1. Introduction

Communicative competence (CC) in language learning refers to the ability to effectively and appropriately use a language to communicate in various contexts (Jeong, 2018; Kalugina, 2016; Wong & Moorhouse, 2021). Effective communication involves various competencies that enhance both cognitive and metacognitive skills. These competencies are essential for achieving not only successful communication but also for gaining the knowledge embedded within it (Herdiawan, 2018). CC goes beyond just knowing grammar rules and vocabulary; it involves understanding how language is used in real-life situations, including application to social, cultural and professional contexts. It is the ability to interact effectively with people from different linguistic and cultural backgrounds (Iswandari, 2022), adapting appropriately to their behaviors, attitudes, and expectations (Yuan et

al., 2023). Encouraging CC among English as a Foreign Language (EFL) learners is the primary educational goal of communicative English language learning.

Hymes (1972) is credited with coining the term "communicative competence," which encompasses both implicit language knowledge and appropriate language use (Herdiawan, 2018; Nazari, 2007). This argument was set forward as an objection to Chomsky's idealized notions of just linguistic competence (Kyeong-Ouk Jeong, 2018). It was proposed that the word "communicative competence" replace Chomsky's concept of linguistic competence with a more expansive and authentic understanding of competence. (Kyeong-Ouk Jeong, 2018). The four main components of communicative competence are described in Table 1.

Table 1 *Components of communicative competence*

CC Component	Description
Language Competence (LC)	Organizing language into cohesive, coherent communication. Ability of a language user to connect sentences and ideas coherently and effectively in spoken or written communication. It includes understanding the structure of conversations, narratives, and other types of language, as well as using language markers and cohesive devices to maintain coherence (Ahmed AL-ahbaby & Al Azzawi, 2024; Herrera-Mosquera & Tovar-Perdomo, 2017; Yuan et al., 2023).
Grammatical competence	Understanding language structure (Herrera-Mosquera & Tovar-Perdomo, 2017).
Sociolinguistic competence	Understanding social context (Mujiono & Herawati, 2021; Putra, 2021).
Strategic competence	Employing strategies to overcome communication challenges (Ahmed AL-ahbaby & Al Azzawi, 2024; Zhang et al., 2021; Zhou et al., 2023).

Developing communicative competence in language learning typically involves practicing all four components through activities such as speaking with native speakers, engaging in authentic communication tasks, and exposure to authentic materials such as movies, books, and newspapers (Ahmed Al-ahbaby & Al Azzawi, 2024; Erkulova, 2020; Kalugina, 2016; Zhou et al., 2023). This has significant implications for language use and coherent communication for individuals in professional settings who need very good command of English vocabularies for professional communications, making English for Professional Purposes (EPP) a critical aspect of EFL.

However, classroom dynamics are challenging in non-English-speaking nations because EPP students primarily encounter English only in the EPP classroom (Aprianto et al., 2020; Tao, 2019) and not in communicative settings. One of the biggest challenges these learners face is selecting suitable words in the face of limited word knowledge (Abrar et al., 2018). Students' lack of vocabulary thus restricts their ability to express their ideas socially and professionally. With an emphasis on boosting language fluency, and with the growing internationalization of vocational higher education, EPP and learning in multilingual university environments has become increasingly common (Dafouz, 2016).

Grammatical or sociolinguistic incompetence might be easily overlooked for second language users, while strategic competence (higher-level language use) is usually not expected or demanded. However, to understand and be understood – language competence – the user must demonstrate basic skills in connecting sentences and ideas coherently (Ahmad, 2016; Herrera-Mosquera & Tovar-Perdomo, 2017). This makes language competence a central and critical skill among the four (4) communicative competences. This study focuses on the acquisition of language competence as a central need for EPP learners.

Advanced multimedia tools have revolutionized EPP learning, offering dynamic and immersive learning experiences for students. These advanced multimedia technologies offer a range of options that not only engage language learners but also make the learning experience both enjoyable and effective (Kumar et al., 2021) Technology is therefore among the major influencers of change at linguistic areas. (Ajmal & Kumar, 2020).

An increasing number of educators are investigating different forms of ICTs (Abd El-Rahman et al., 2024; Wong & Moorhouse, 2021), including advanced tools like artificial intelligence (AI) in the classroom to inspire their students (Hsieh & Hsieh, 2019). Teaching languages can also benefit from these opportunities as these advanced tools have unique properties, including human-like capabilities with immense potential to support language learning in ways not previously possible.

With extensive applications of multimedia tools in self-directed learning, there are new opportunities and challenges in developing language competence. Advanced multimedia tools like AI language models, language-learning apps, and interactive simulations can offer individualized practice and feedback, creating immersive environments where learners can practice language skills in a controlled, often simulated, setting (Al Jilani, 2024;

Nilubol, 2023; Young & Shishido, 2023). This approach can particularly benefit areas like grammar and vocabulary, providing learners with immediate reinforcement and tailored exercises.

Encouraging autonomous learning through AI tools among vocational EPP students can foster essential workplace behaviors such as initiative-taking, continuous skill development, and adaptive learning, traits that are highly valued (Ajmal & Kumar, 2020; Herdiawan, 2018). Such tools simulate real-world professional communication, providing instant feedback that enhances language competence development in alignment with workplace expectations (Nilubol, 2023; Young & Shishido, 2023).

There are many studies on general and advanced multimedia tools in language education, and while there is existing research on EPP learning and the role of technology in language education, there is limited focus on the use of AI in promoting language competence among EPP learners in vocational higher education settings. Researchers note the need for more engaging learning methods and vocational curriculum improvements (Yıldırım & Bal, 2023) which can be achieved through the integration of AI tools.

It is also unclear whether autonomous use of multimedia tools will translate into effective language competence in real-life social and professional settings, or which features in these emerging tools hold the promise of significant effectiveness in the EPP classroom, particularly in relation to supporting the development of language competence. This study therefore explores the usage and potential of AI tools for promoting language competence among vocational higher education EPP learners to develop a better curriculum and promote autonomous and independent learning.

2. Literature Review

2.1 English as a Foreign Language (EFL) Education

While language teaching has a lengthy history, the core principles of modern approaches emerged in the 20th century, when linguists began establishing foundational theories and methods for language education. (Richards & Rodgers, 2014) In Language Teaching Analysis (1965), Mackey introduced a model for language teaching that focused on presentation and repetition. Although Mackey's model was influential, it primarily supported a textbook-based approach to teaching and learning. His framework did not consider communicative needs or address classroom, social and professional settings essential for building CC.

EPP is a specialized form of EFL that focuses on preparing learners to use English in professional and vocational contexts. While EFL builds general language competence, EPP emphasizes workplace communication skills. Foreign language teaching, and EPP, like many other aspects of life, has been significantly shaped by recent advancements in information and communication technologies, such as augmented reality (AR), virtual reality (VR), and AI. Despite AI's presence in education for nearly 30 years, educators remain cautious about its broader application in teaching and are uncertain about its potential to meaningfully enhance English language learning outcomes.

2.2 Approaches to Communicative Language Teaching (CLT) and EPP

Recent literature in language education highlights various approaches and advancements that cater to both communicative and cognitive needs of learners. Communicative Language Teaching (CLT), for instance, continues to be widely discussed due to its role in developing intercultural communication skills and fostering a practical understanding of language through peer interaction and real-life conversational contexts. CLT emphasizes the importance of immersive, interactive experiences, promoting both critical thinking and problem-solving abilities within language learning frameworks. However, some studies point out that CLT's heavy focus on conversation may overlook essential grammar and vocabulary instruction, calling for a more balanced integration that includes explicit language forms as well as communication (European Journal of Education and Pedagogy, 2023).

Moreover, technology-assisted language learning, specifically machine translation (MT) tools, has gained traction, particularly in higher education settings. Studies suggest that MT tools can effectively support writing skills by enhancing syntactic complexity and accuracy. However, a reliance on MT may hinder deeper learning if students use it without sufficient guidance. Consequently, educators are encouraged to integrate MT thoughtfully by incorporating training and feedback mechanisms to optimize its educational benefits (Deng & Yu, 2022).

Additionally, the rapid expansion of AI learning tools has opened avenues for self-directed and blended learning models, which help students develop language skills at their own pace while receiving real-time feedback. These technological and methodological advances collectively highlight the potential of adaptive language competence to meet diverse learner needs, from grammar-focused instruction to immersive, communicative practices.

Multimedia tools can offer a risk-free environment for learners to experiment and build confidence in their language abilities. This comfort can encourage learners to engage in social settings, as they may feel more prepared to use their language skills after self-practice. Artificial intelligence-generated content (AIGC) enables users to request unique requirements in order to generate certain content. The top technological companies in

the world developed a number of products based on the development of Artificial Intelligence Content Generation (AIGC). ChatGPT from OpenAI for example can reply to queries from individuals using natural languages. ChatGPT and similar programmes have dramatically accelerated advances in several areas, including teaching languages, since their launch beginning in late 2022. ChatGPT has been used by educators and learners to help teach and learn foreign languages. (Anh Vo and Huong Nguyen, 2024).

Tram, Nguyen, and Tran (2024) investigate ChatGPT as a tool for EFL learning. Tram et al. (2024) note that ChatGPT can produce natural, human-like responses and handling conversations that cover multiple topics. It can also adapt study plans based on a learner's unique needs, preferences, and learning speed. With these capabilities, ChatGPT serves as a valuable language-learning companion, offering continuous support to help users improve their language skills. Despite some possible threats to academic integrity, the results show that ChatGPT provides a productive and active language learning environment for students to advance their language proficiency. Although these studies offer some insight regarding ChatGPT's effects on language learning, their conclusions regarding the advantages and difficulties of ChatGPT are not theoretically grounded, or they are still lacking in methodological rigor and empirical proof. AI tools provide a risk-free environment for practice, allowing learners to experiment without fear of judgment. This can boost their self-confidence and encourage them to engage in social interactions with a stronger foundation in language skills (Anh & Huong, 2024), highlighting its potential for enhanced self-confidence. Extensive studies on students' perceptions on generative AI tools like ChatGPT is still in its early stages; findings from such studies have potential impact on how the tool might be applied and/or improved for application in teaching and learning. Thus, additional knowledge about using GenAI tools to learn a foreign language from the perspective of students is required.

Language educators have traditionally acted as the main catalysts or facilitators for language learning in academic settings, where students pick up key language skills from instructors who evaluate their progress using both spoken and written components. However, the emergence of the internet and search engines completely changed the way that students learn languages. Rather than depending solely on their teachers, through the internet, students were empowered to access a wealth of knowledge, language resources, and platforms that are tailored to meet their specific needs. Similarly, another paradigm change in language learning and teaching has begun with the development of generative AI programs (Law, 2024).

Research has shown that GenAI systems can help students write better in a variety of ways by giving them immediate feedback on their grammar, vocabulary, and sentence structure. These tools, which offer recommendations for other word choices and sentence rephrasing, can also assist students in increasing the size of their vocabulary and refining their sentence structures. Scholars have proposed that GenAI writing tools, like ChatGPT, may have beneficial effects on L2 writing as well as psychological factors including learning motives, interest, and engagement, as well as students' creative writing. Numerous studies have indicated that GenAI (including ChatGPT and other chatbots) and LLMs have the potential to provide benefits like personalized learning, immediate responses, better language learning outcomes, and improved learning experiences and autonomy in the context of language teaching and learning. (Law, 2024).

2.3 Limitations and Challenges of AI Tools in EPP Learning

AI tools have gained popularity in EPP learning due to their potential to enhance language competence through personalized and interactive experiences. However, they present challenges and limitations as well. These include:

- *Lack of Real-World Interaction*: While AI tools and multimedia can simulate conversations, they may lack the spontaneity and complexity of real-world social interactions, which require learners to adapt to listener cues, unexpected questions, and contextual tone shifts (Zheng & Warschauer, 2023). These aspects are essential for developing communicative competence but are difficult to replicate in AI-driven simulations.
- *Social and Cultural Factors*: Effective language use involves social competencies that go beyond syntax and vocabulary, including understanding body language, tone, and social etiquette, which are often learned through cultural immersion and direct interaction (Warschauer & Liaw, 2022). AI tools may struggle to fully address these subtleties, potentially limiting learners' ability to navigate cultural nuances in communication.
- *Over-Reliance on Self-Learning*: While AI tools encourage self-directed learning and autonomy, over-reliance on them can reduce opportunities for feedback from peers and instructors. Exposure to diverse perspectives and social cues through human interaction is essential for nuanced language development (Lee et al., 2023).

These identified challenges and others open up comprehensive opportunities for studies to address the limitations of these tools and further enhance their applicability within teaching and learning settings.

2.4 Situated Cognition, TALL, TELL, and TALE: Theory and Hypothesis Development

Situated Cognition Theory (SCT) asserts that learning is most effective when it occurs within the context in which the knowledge will be applied (Brown, Collins, & Duguid, 1989). In vocational higher education, English for Professional Purposes (EPP) learners benefit from engaging in authentic, real-world tasks that reflect professional

communication scenarios. AI tools such as chatbots, writing assistants, and interactive simulations, create immersive environments where learners can practice language use in job-relevant contexts. These tools align with the situated learning approach by enabling learners to experience language in action.

Various assisted language learning models provide frameworks for integrating technology into language education. This has direct implications for language learning strategies, communicative competence, and language competence. Technology-Assisted Language Learning (TALL) emphasizes using technology as a supportive tool in language learning. It encompasses resources such as mobile apps, interactive software, and multimedia content (Stockwell & Hubbard, 2013). TALL provides a foundation for language learning strategies that cater to individual learner needs, enabling personalized practice in vocabulary, pronunciation, and grammar, all of which are essential for language competence (Godwin-Jones, 2018). Through TALL, learners build a robust understanding of language structure and vocabulary, which contributes to communicative competence (Ally, 2019). By enabling self-paced practice, TALL allows learners to gain confidence and readiness for meaningful communication (Golonka et al., 2014). The investigation into which AI tools vocational EPP students are using thus aligns directly with TALL's emphasis on learner–technology interaction for personalized skill development (e.g., vocabulary, grammar, pronunciation apps, etc.).

Technology-Enhanced Language Learning (TELL) builds on TALL by facilitating more interactive, collaborative learning environments through real-time tools like virtual exchanges and live language practice sessions (Reinders & Benson, 2017). These environments promote language learning strategies centered on social interaction, negotiation, and collaborative problem-solving, which are essential for communicative competence (García Botero et al., 2019). In addition, TELL supports language competence by offering immediate feedback, which allows learners to refine their linguistic accuracy and fluency dynamically. Real-time interactions foster linguistic adaptability, contributing directly to effective communication skills (Lee, 2020).

Technology-Assisted Language Education (TALE) encompasses both TALL and TELL within a structured, curriculum-based framework, frequently using tools like learning management systems (LMS) and digital assessments to monitor learner progress (Farr & Murray, 2019). This structure supports language learning strategies focused on self-regulation, goal-setting, and reflective practice—key metacognitive skills necessary for language competence (Mynard, 2021).

By using structured tasks and authentic simulations, TALE develops communicative competence by preparing learners for real-world interactions within an organized, supportive environment (Kukulska-Hulme, 2020). This comprehensive approach ensures learners systematically acquire both the knowledge and the practical skills needed to communicate effectively.

Each of these theories enhance communicative and language competences. In summary, TALL focuses on self-directed, individual learning that fosters core language skills (Godwin-Jones, 2018) while TELL emphasizes interactive, collaborative strategies for live communication practice (García Botero et al., 2019). TALE offers structured, goal-oriented learning that integrates language acquisition with practical communicative tasks (Farr & Murray, 2019).

Through these technology-supported approaches, learners not only acquire language knowledge but also gain the ability to communicate effectively, making them well-rounded and adaptable language users. In line with the theoretical principles discussed, the following research objectives are identified for this study:

i. To assess the types and use of AI tools for language learning by EPP learners
ii. To explore the effectiveness of AI tools in promoting language competence in EPP learning
iii. To analyze the features of AI tools that the learners find effective in achieving language competence.
iv. To make recommendations on the use of AI tools for promoting language competence in EPP learning.

The study's research objectives align with key elements of the theoretical framework. TALL supports exploration of AI tool usage patterns, while Situated Cognition Theory surrounds the investigation of frequency as a measure of context-embedded learning. TELL and TALE explain how specific features of AI tools promote language competence through interactivity, feedback, and structured practice. Together, these theories provide a comprehensive foundation for analyzing how AI supports language development in vocational EPP contexts.

3. Methodology

A qualitative research design is appropriate for this study because it allows for a deep exploration of participants' experiences and perceptions (Creswell, 2014). By using qualitative methods such as interviews, we can gain rich, contextualized data that cannot be easily quantified. This approach enables the uncovering subtle insights into the phenomenon of language competence and develop a deeper understanding of the underlying factors and motivations. Additionally, qualitative research is particularly well-suited for exploring complex social and cultural phenomena, which often defy simple measurement and categorization. The following sub-sections provide additional details on the study process including the context and participants, and data collection and analysis processes.

Based on the focus and design of the study, a purposive sample that is able to provide data on the phenomenon of interest is considered ideal for collecting relevant data. Hence, participants were intentionally rather than randomly selected. Purposive or judgmental sampling relies on the researcher's expertise to choose individuals or data points that align closely with the study's objectives. The method also typically involves a smaller, targeted sample that allows the researcher to focus on individuals best suited to contribute valuable insights. To introduce the study to the sample EPP students, the researcher went in person to university classrooms conducting English classes. This interaction was essential to getting consent and outlining the significance and goal of the study. After being informed about the study, the students gave their permission to take part. A sample of nine (9) EPP learners who are currently studying at a public university in Malaysia was therefore selected to participate in the study. After permission was obtained, the students received a digital copy of the interview questions which are intended to explore their experiences with AI technologies and their perceptions of how it affected their communicative competence.

This study explores the phenomenon of AI tools in EPP learning within higher education; hence, a sample drawn from among university students is appropriate as they are likely accustomed to using AI applications for academic assignments or improving their communicative English skills. While the data that was collected holds significant potential, it is important to acknowledge several limitations. Firstly, time constraints restricted the scope and depth of the analysis. Secondly, financial limitations hindered the ability to travel and engage with a broader range of vocational institutions. As a result, the sample may not fully represent the diverse contexts in which English is learned as a foreign language.

3.1.1 Instruments and Data Collection

This study aims to examine the patterns, trends, and connections between the application of AI technologies and the development of language competence among EPP learners in vocational education. Data collection was therefore based on highly structured interviews using open-ended question items presented to participants in written form.

This approach was considered appropriate for the sample due to their low level of communicative competence and limited vocabulary. An oral interview will be challenging and might yield lower quality and quantity of data; however, with written, open-ended questions, participants can take advantage of the AI translation tools to better understand the questions and to help construct their responses in meaningful ways. The question items presented to the participants were structured according to the research objectives.

3.1.2 Procedure and Data Analysis

The textual data collected were analyzed for themes representing the focus of the research objectives or questions. Phrases indicating frequency of use of AI tools (RO1), effectiveness of AI tools (RO2), features of AI tools noted as most effective in achieving language competence (RO3) and features of AI tools noted as least effective in achieving language competence (RO3) were highlighted. Codes were assigned to each highlighted phrase as summaries of the essence of the data in a few words. The codes were further clustered into themes that relate to the research objectives. The themes provide a view of respondents' experience using AI in EPP learning. Code groups developed to analyze participants responses are described in Table 2.

These codes collectively provide insight into learners' usage patterns, preferred tools, skill focus, and valued AI features in their language learning journey. The next sections present the results of the qualitative, thematic analysis based on the research objectives.

Table 2 *Code groups employed in the thematic analysis*

Code	Description of what the code captures
Daily/Frequent Use	categorizes how often learners engage with AI tools, helping determine the intensity of AI usage in their language learning routine.
Language practice apps, translation tools and AI assistants	groups the types of AI tools used, allowing analysis of preferred technologies among learners for EPP support
Grammar support, reading, writing, listening or speaking skills	capture specific skills targeted by learners when using AI tools, indicating which aspects of language learning benefit most from AI integration.
Standard English or extensive reading, feedback, fun and engaging content	identify particular AI features that students find useful, such as enhancing reading, receiving feedback, or accessing engaging material, revealing which elements of AI-driven tools are most valued by learners

4. Results

This section presents findings from the analysis of the data collected in this study. The results are presented based on the research objectives and questions:

4.1 AI Tools Employed for Language Learning Identified by Vocational EPP Learners

Many participants listed translators like Tencent Translation, Baidu AI Translator, Youdao, DeepL, and Google Translate as technologies that are mostly used to translate words, phrases, or full texts, which aids in writing assignments and helps learners comprehend foreign languages. Grammarly and QuillBot were also frequently mentioned as tools for checking grammar and improving writing. These tools are useful for ensuring sentence fluency, correctness, and clarity, especially in academic or formal writing.

ChatGPT was mentioned by multiple respondents as a tool that was used as a language assistant. This finding supports the studies done by Anh and Huong (2024) and Tram, Nguyen, and Tran (2024) regarding ChatGPT as a useful tool for autonomous language practice. Language learning apps like Duolingo, Fluent Speaking, Daily English, Keke English, Acasuo English, and Liulishuo English are popular for practicing various language skills, including listening, speaking, reading, and grammar. These apps provide structured learning resources, exercises, and content that guide users in their language learning journeys. Daily English is highlighted for its ability to track learning progress and motivate learners through self-monitoring features. The ability to see tangible improvements encourages continued learning and engagement with the language. The various tools identified by participants and their applications in language learning are presented in Table 3.

Table 3 *Tools for language learning and their applications*

Language Learning Tool	Applications
Duolingo, Euro	Structured learning, assessment and language practice
Dictionary, DeepL, Google Translate, Baidu AI Translator, Pigai, AI Youdao Dictionary, Keke English, Acasuo English, ChatGPT, Liulishuo English, Dear Translator, Tencent Translation.	Translation and Language Practice
Kwai, Sina Microblog, YouTube, Facebook	Video/article apps
Grammarly	Grammar and writing tools
Fluent Speaking, Himalaya, Daily English	Language practice and self-monitoring/progress tracking
ChatGPT and Siri.	AI Assistants

4.2 Frequency of Use of AI Tools for Language Learning by EPP Learners

Participants were asked to provide information on the frequency of use of various AI tools including Duolingo, DeepL, Google Translate and ChatGPT. Sample responses related to frequency of use are presented in Table 4.

Table 4 *Frequency of use of AI Tools*

	Response	Assigned Code	Theme
1	Almost every day	Daily Usage	High Frequency (HF)
2	Primarily uses Daily English, studying for at least 30 minutes a day	Daily Usage	HF
3	Frequent	Frequent Usage	HF
4	Occasional use	Infrequent use	Low frequency
5	Uses tools daily for chatting and searching in English, treats AI as a conversational partner	Daily Usage	HF
6	Frequent use of AI tools	Frequent Usage	Medium Frequency
7	Uses AI tools for daily tasks	Daily Usage	HF
8	Uses tools daily	Daily Usage	HF
9	Almost daily use	Daily Usage	HF
10	Almost everyday	Daily Usage	HF

Code groups included high frequency (daily or very frequent use), medium frequency (regular but not very frequent use, e.g. once or twice weekly), and low frequency (infrequent use, once in a while, monthly, etc.). The last column in Table 4 shows the 'high frequency' theme label was assigned to most response categories.

The data in Table 4 categorizes participants' AI tool usage frequency for English learning. Responses indicate high usage, with many participants using AI tools "almost every day" or "daily." This frequent usage aligns with the "High Frequency of Tool Usage" theme, highlighting AI's integration into learners' daily routines for consistent language exposure and practice.

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4.3 Effectiveness of AI Tools in Promoting Language Competence in EPP Learning

The question presented to participant regarding this objective was "Based on your experience, which aspect of English language learning do these AI tools help you with? Reading? Speaking? Listening? Writing?". The most commonly discussed uses of AI technologies are writing, refining grammar, improving writing structure, and checking for errors with tools like Grammarly, ChatGPT, Quillbot, and Pigai. These resources are very helpful for professional and academic writing, as well as test preparation.

4.4 Effectiveness of AI Tools in Promoting Language Competence in EPP Learning

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Another important area that AI tools help with is reading. While programs like Liulishuo provide reading practice catered to the learner's level, translation resources like Google Translate, DeepL, and Youdao aid readers in understanding texts by translating words and sentences. Respondents improve their reading fluency, vocabulary, and comprehension by using these tools. To assess the effectiveness of using AI tools in EPP learning and based on the information provided by participants on the type of tools that they are using (see Table 3).

The responses show broad reliance on tools for varied tasks, from language practice and translation to grammar correction and conversational assistance, which are all parts of language competence needs. As Law (2024) investigated in his study titled *"Generative AI tools in language teaching: Personalized learning and engagement outcomes",* AI tools have the potential to provide better language learning outcomes, and improved learning experiences and autonomy in the context of language teaching and learning. (Law, 2024). This investigation proves that the findings in this section are coherent with previous research. Table 5 shows sample codes and themes from participants' responses regarding how the tools assist them in their language learning.

Table 5 *Codes and themes on effectiveness of AI tools for promoting EPP learning*

Sample Responses	Codes	Theme
AI tools help with vocabulary, professional terms, grammar, reading, and writing.	Grammar and Vocabulary Professional English	Professional language use
AI tools help with reading, listening, speaking, writing, with a focus on oral English practice, especially for listening and speaking in various situations.	English Practice, Speaking and Writing	Comprehensive practice support
Listening, speaking, reading	Listening, speaking & reading	Non-writing skills
Speaking and listening.	Listening and speaking	Discourse skills
Reading, writing, speaking, and listening.	Full language support	Comprehensive language skills
Writing.	Writing skills	Written communication skills
Writing and reading.	Writing and Reading skills	
Writing and vocabulary learning	Vocabulary building	

Many participants find AI tools beneficial for enhancing vocabulary, grammar, reading, and writing, especially for professional language use. Others report these tools help with overall language practice, including speaking and listening in practical settings. The responses highlight AI's broad utility in supporting both linguistic competence skills.

4.5 Features of AI Tools That Are Effective in Achieving Language Competence

Participants' responses to the question: "Which features in the AI tools do you find most useful and for which aspect(s) of language learning?" were analyzed to address this objective. Table 6 highlights the key features of AI tool that participants find most helpful for language learning. Codes were assigned and then grouped together into themes as shown in Table 6. For example, responses related to "integration of standard English in the AI tools content." was labelled as 'Standard English' and similar codes in this group were grouped together to into the theme: "Knowledge Building".

Table 6 *Features in the AI tools that are most useful for language learning*

Response Segments	Sample Codes	Themes
Integrating standard English in the AI tools content.	Standard English	Knowledge Building
Intensive reading features supports reading and knowledge building.	Extensive Reading	
Direct feedback on the user's input helps the learner understand their language strengths and weakness.	Immediate feedback	Feedback
Unrestricted content makes learning fun and engaging.	Fun and Engaging Content	Engagement & Interactivity
The tools help to teach speaking and listening in a convenient way.	Engaging Content	
Helps in correcting mistakes especially grammar.	Feedback	Interactive Feedback
Writing exercises.	Engaging Content	
Writing advice and support.	Engaging Content	
Useful in learning new words.	Vocabulary Building	Language Skills

Participants emphasize the helpfulness of translation tools, especially for writing and reading. In order to better comprehend the material and fix mistakes, bilingual features (found in intensive reading exercises) allow students to compare English with their native tongue, such as Chinese. For learners who do not have access to native-level information, authentic and standardized English learning resources are considered essential.

AI tools that provide exposure to language outside of traditional textbooks are highly regarded for their ability to provide a more authentic learning environment, which is crucial for advancing one's skill in a foreign language. AI-

based methods that facilitate unrestricted discussion, including chat features, are valued for increasing the fun and engagement of learning. Through real-time interactions, speaking and listening skills are developed and confidence is bolstered for learners through more flexible and informal English practice.

AI dialogue features and conversational technologies like ChatGPT and Liulishuo make speaking practice easier. The tools mentioned by the respondents are extremely useful for Chinese learners who might have trouble with spoken English when it comes to practicing oral communication. AI technologies are used to practice speaking in various contexts and enhance fluency and pronunciation.

Interactive feedback, such as grammar correction and real-time advice, aids in identifying strengths and areas for improvement. Engaging features like unrestricted content, speaking/listening aids, and writing exercises make learning enjoyable, offering practical support across multiple language skills. These features collectively enhance learning by providing both knowledge-building and interactive feedback.

4.6 Discussion and Recommendations for Using AI Tools for Promoting EPP Learning

The qualitative findings from this study have highlighted the potential of AI tools in enhancing EPP learning. Participants expressed a strong preference for personalized feedback, interactive speaking and listening exercises, and customized learning experiences. These findings align with the growing body of research that suggests AI-powered language learning tools can significantly improve learners' language proficiency. Key benefits identified include:

Enhanced Feedback Mechanisms: Participants highlighted the value of enhanced feedback mechanisms, especially contextualized grammar corrections and vocabulary suggestions tailored to the learner's purpose. This targeted approach to feedback allows learners to understand the intricacies of language use, encouraging better retention and application of language skills. AI tools should integrate features that provide contextual vocabulary and grammar feedback, helping learners adjust their language to fit both formal and conversational scenarios.

AI tools can revolutionize feedback by providing immediate, tailored, and actionable feedback. By analyzing learners' language use, AI can identify specific areas for improvement, such as grammar, vocabulary, and pronunciation. This personalized approach can significantly accelerate language learning.

Interactive Speaking and Listening Exercises: Interactive speaking and listening exercises powered by AI can create immersive language learning experiences. AI-powered conversational simulations and speech recognition with pronunciation feedback could provide learners with immersive practice, replicating real-life exchanges and promoting more natural speech. Introducing situation-based listening exercises, such as those centered around travel or workplace scenarios, would also help learners develop comprehension skills applicable in specific contexts. These features can significantly benefit learners aiming to improve both verbal and auditory proficiency.

By simulating real-world conversations and providing real-time feedback, these tools can enhance learners' fluency and confidence. Additionally, AI-powered speech recognition can help learners improve their pronunciation and intonation.

Customization for Professional English: Tailoring language learning to specific professional needs is essential for learners who aim to achieve high levels of proficiency. AI tools can offer customized vocabulary modules, grammar exercises, and writing practice to help learners develop the language skills required for success in their chosen field. Tools that offer industry-specific vocabulary modules and formal language practice exercises, including report writing and email etiquette, would enable learners to develop the language proficiency needed for their professional fields.

The discussion highlights how AI tools can support EPP learning by aligning with key principles from the TALL, TELL, and TALE frameworks. In line with TALL (Technology-Assisted Language Learning), AI's targeted feedback and contextualized vocabulary suggestions promote self-directed learning, enabling students to independently build core language skills. The interactive speaking and listening exercises align with TELL (Technology-Enhanced Language Learning), fostering live, collaborative communication practice that mimics real-life scenarios, such as conversational simulations and pronunciation feedback. Additionally, TALE (Technology-Augmented Language Education) principles are evident in the structured, goal-oriented design of AI tools for professional English, where learners engage in tailored vocabulary modules and formal language tasks. By integrating these frameworks, AI tools can effectively support comprehensive language development through self-directed, interactive, and practical communicative approaches.

5. Limitations and Suggestions for Future Studies

This study's findings based on qualitative feedback from a small sample of EPP learners at a public university in Malaysia limits the generalizability of the results. While the insights reflect specific contexts and learner needs that may not fully represent the diversity of EPP learners across different regions, proficiency levels, or cultural backgrounds, they provide a lens through which relevant or similar discussions in other settings or populations

can be viewed. Additionally, as participants were self-reporting, there is a possibility of bias in responses, such as overstating preferences or minimizing challenges.

It is suggested that future studies should include a larger, more diverse sample of EPP learners from various educational backgrounds and countries to enhance generalizability. Quantitative methods could also be incorporated to validate the effectiveness of specific AI tool features identified in this study, such as contextual feedback and interactive exercises. Longitudinal research could further explore the long-term impact of AI tools on language competence, offering deeper insights into how these tools support sustained language acquisition.

Other areas of concentration for future research include:

- Ethical Considerations: addressing ethical concerns such as data privacy, bias, and transparency.
- Learner Autonomy: Explore how AI tools can empower learners to take control of their own learning process and develop autonomous learning strategies.
- Social, Cultural and Racial Factors: It is important to consider the various factors within the cultural and social context of language learning and how AI tools can be adapted to different cultural backgrounds.
- Algorithmic Biases: While looking into the socio-cultural factors are important, it is also of extreme importance that the impact of algorithmic biases be explored and factored into future developments of AI tools as educational technologies, especially in the context of the global south and several developing nations around the world.
- User Experience (UX): The design of intuitive and engaging interfaces that minimize cognitive load should be a priority in the context of instructional technology.
- Continuous Evaluation: Regular audits of AI-powered language learning tools should be conducted to identify areas for improvement and ensure both equitable learning and optimal UX.

By addressing these recommendations, researchers and developers can create innovative AI-powered language learning tools that have a positive impact on EPP learners worldwide.

6. Conclusion

Integrating AI tools into EPP learning has the potential to significantly advance the objectives of Vocational Education by aligning language instruction with real-world professional competencies. As AI technologies become increasingly accessible, they offer adaptive, contextualized, and immersive learning environments that enhance the communicative competence of EPP learners in vocational institutions.

Several significant clues into how language learners use AI tools and which characteristics they find most beneficial for improving their English ability are revealed by a thematic analysis of the survey results. The capacity of AI tools to offer regular, everyday assistance in a variety of language skills including writing, reading, translation, and grammatical correction is highly valued by learners. For learners who depend on these tools for academic or professional purposes, programs like Google Translate, Grammarly, and ChatGPT are highly appreciated for their assistance with writing refinement, error correction, and bilingual translation.

Numerous participants drew attention to the comprehensive characteristics of certain AI technologies, which facilitate integrated language practice including the four basics of reading, writing, speaking, and listening. Social media apps and platforms such as LIULISOU provide realistic and real-world content that makes it easier and more enjoyable for language learners to improve practical language skills. When it comes to speaking and listening practice, conversational AI technologies are especially helpful since they enable learners to mimic real-life conversations and enhance their oral fluency.

Integrating AI tools into EPP learning shows strong potential to enhance language competence in vocational education by aligning instruction with real-world communication needs. The findings of this study reveal that EPP learners benefit significantly from AI tools that offer personalized feedback, vocabulary support, translation functions, and interactive language practice—particularly in writing, reading, and speaking. These tools also promote learner autonomy and engagement, which are critical in low-exposure EFL environments. However, to fully harness the benefits of AI-assisted language learning, future research should focus on developing a structured model or framework for integrating AI tools systematically into EPP curriculum. Such model could guide language instructors on best practices for selecting, implementing, and assessing AI tools in language classrooms.

Lastly, this research has a lot of potential, but it also has several limitations that need to be understood. First, there is a time constraint on the study that limits the scope and depth of analysis that may be done. Second, financial limitations make it difficult to travel in order to access a wide variety of organizations that teach English. Because of this restriction, the sample may not be entirely representative of the variety of settings in which English is learnt as a foreign language. As a result, it's possible that the findings of this paper may not be generalizable to all EPP learners. These drawbacks emphasize the necessity of longer-term studies with wider institutional access in the future to expand on the knowledge this research will potentially contribute.

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Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of the paper.

Author Contribution

The authors confirm contribution to the paper as follows: ***study conception and design:*** *Shahd Abdelhamid, Bosede Iyiade Edwards;* ***data collection:*** *Shahd Abdelhamid;* ***analysis and interpretation of results:*** *Shahd Abdelhamid, Bosede Iyiade Edwards;* ***draft manuscript preparation:*** *Shahd Abdelhamid, Bosede Iyiade Edwards;* ***Supervision and review:*** *Bosede Iyiade Edwards, Wan Ahmad Jaafar Wan Yahaya. All authors reviewed the results and approved the final version of the manuscript.*

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