

An Investigation of EAP Students' Perception of Utilising the Generative AI Chatbot in an EAP Writing Classroom: An Empirical Study within Higher Education in New Zealand

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Abstract

In the field of English for Academic Purposes (EAP), the role of artificial intelligence-assisted language learning in developing writing skills has been extensively researched and has yielded positive outcomes. Also, AI-powered chatbots can significantly contribute to comprehending and enhancing the responsible and reflective utilisation of AI tools in the educational context. However, its impact on language classroom education, particularly in EAP writing, has not received widespread attention. This study will address this gap by investigating the descriptions and explanations of preferred EAP writing learning strategies among a group of international postgraduate students engaged in EAP studies at a university in New Zealand, with a particular focus on their utilisation of the generative AI-powered chatbot, "ChatGPT". This study will conduct a quasi-experiment to investigate the impact of ChatGPT on the EAP learning of two groups of language class students in New Zealand. The findings are expected to suggest that GenAI can facilitate the development of EAP writing proficiency and provide instant and constructive feedback within an informal language learning context.

Keywords: EAP writing, ChatGPT, Language learning, AI, Chatbot, English language teaching, English language learning

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Introduction

Over the past few decades, significant transformations have occurred in the realms of economy, society, culture, and education, primarily driven by the widespread utilisation of information technology and communication technology (Wang et al., 2024). In the current globalised educational landscape, language acquisition has become increasingly crucial, particularly for international students pursuing advanced degrees (Cai et al., 2023; Hiver et al., 2020). Artificial Intelligence (AI) chatbots, e.g. ChatGPT, based on Natural Language Processing (NLP) represent a novel method by which learners harness computer technology to acquire new knowledge (Javaid et al., 2023). A chatbot represents a software application designed to engage users in conversation that mimics human interaction, utilising both text and voice modalities (Ashfaq et al., 2020). Additionally, it is capable of providing real-time assistance and educational tutoring (Kerly et al., 2007). The learning process typically involves undertaking a variety of tasks to comprehend concepts, posing questions or solving problems through simulations of human dialogue, and receiving feedback via in-system assessments. For instance, ChatGPT can analyse these data through commands to enhance understanding of a specific domain, making it more effective for distance education and promoting equity in learning opportunities for all (Dai et al., 2023; Memarian & Doleck, 2023). ChatGPT can also help EAP learners enhance their learning autonomy and competence (Dilzhan, 2024; Du & Alm, 2024). However, the role and efficacy of such generative AI in language learning feedback are still in the nascent stages of research. The effectiveness of ChatGPT in delivering feedback that is pedagogically sound and beneficial for language learners still needs to be studied. This includes examining the quality, accuracy, and educational value of the feedback. This study addresses this gap by investigating the descriptions and explanations of preferred EAP writing learning strategies among a group of international postgraduate students ($N = 46$) engaged in EAP studies at a university in New Zealand, with a particular focus on their utilisation of the GenAI-powered chatbot ChatGPT. The research questions are as follows:

- **RQ1:** How do international EAP students in New Zealand engage in and respond to their experience of using GenAI ChatGPT in EAP writing studies?
- **RQ2:** What explanations do international postgraduate students provide for their preferences regarding EAP writing learning strategies, especially when incorporating ChatGPT into their learning process?

Methodology

Participants

To address our research questions, we employed a quasi-experimental method involving EAP postgraduate students at a higher education institution in New Zealand to collect data. Our research sample consisted of 46 valid datasets from students who participated in a foreign language course designed to enhance their EAP writing skills and logical reasoning. Due to space constraints, this report will concisely present and discuss the research findings.

Research Design

Two research designs were adopted to address these two research questions. In order to answer RQ1 regarding the impact of their preferred EAP writing learning, we employed a pre-test and post-test quasi-experimental design. Classes ONE and TWO were randomly assigned to an experimental group (GenAI ChatGPT) and a control group (traditional tasks of English learning). RQ2 focused on comparing students' learning task strategies and skills between GenAI and traditional learning tasks. To address this, we used a balanced within-subject comparison design. Class ONE initially used ChatGPT to learn EAP writing, followed by regular learning tasks, while Class TWO followed the opposite sequence/reverse order.

Study Procedure

First, the experimental class students received chatbot-assisted instruction, which included a visual interface and an understanding of EAP writing learning. Then, a pre-experiment test or pre-survey was conducted before the instruction began to assess students' EAP learning abilities. Before the course started, the teacher provided the students with EAP writing topics and an outline of the teaching tasks to help them understand the writing course content in advance. After the course ended, we conducted post-test questionnaires and interviews with the participants to measure their improvement in EAP learning levels. The collected data facilitated our analysis of the results.

Current Status of Work

The goal of the chosen course is to help students develop the skills to organise information and improve their English writing in the EAP classroom through learning and guidance based on GenAI ChatGPT. Our research on students' perceptions of utilising ChatGPT in EAP writing classrooms is currently in

the preliminary data collection phase. We plan to secure approval from the university's ethics review board and establish collaboration with four higher education institutions across New Zealand. The next steps include completing data analysis, validating our findings, and preparing our results for publication and dissemination within the academic community.

Significance and Contribution

This research yields pedagogical implications for the development of English writing for international students in EAP classes, utilising GenAI chatbots such as ChatGPT. The findings could be a valuable reference for language researchers who intend to conduct generative AI-supported chatbots in EAP writing. This study, as an initial exploratory research endeavour, offers a reference for understanding the learning skills of GenAI in the context of academic writing for EAP students in higher education. Also, the present study will make significant contributions to the field of EAP writing through its rigorous quasi-experimental methodology and dual research design, which provide robust data on the efficacy of generative AI tools like ChatGPT in enhancing EAP writing skills.

Based on the findings of this quasi-experimental study, we establish a foundational platform for further investigation and engagement with EAP educators, providing directional insights for pedagogical reform. It emphasises the necessity for researchers to discern between AI-assisted actions and human intelligence, aligning with pedagogical intentions. In the future, more research is needed to provide teachers with instructional feedback by studying the impact of generative AI on English learners. This can enhance the role of teachers and facilitate their efforts in implementing pedagogical reforms. Additionally, EAP in higher education in New Zealand requires a deeper understanding of analytical techniques that are more suited to analysing student interactions with generative artificial intelligence.

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