

Prompting Relationship: Using AI for EFL Motivation

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Abstract

This study explores effective ways to utilize ChatGPT in English as a Foreign Language (EFL) education, focusing particularly on prompt engineering as a means of unlocking new possibilities for teaching conversational English. Prompt engineering has been recognized as a critical technique for optimizing LLM outputs (Liu et al., 2021), and in the context of language education, it holds the potential to provide tailored and effective instruction based on learners’ needs. However, research on prompt engineering in EFL education remains limited. Building on the theoretical framework of prompt engineering (Reynolds & McDonough, 2021), this study proposes a methodology for designing effective prompts for teaching conversational English using ChatGPT. Through this research, we aim to introduce a new paradigm for AI-assisted language education while addressing its limitations and ultimately contributing to the improvement of EFL learners’ conversational skills. This study provides a solid foundation for understanding the role of prompt engineering in leveraging ChatGPT for effective and motivating EFL instruction. By continuing to investigate the intersection of generative AI and language education, researchers and educators can work towards developing innovative and personalized learning experiences that empower EFL learners to thrive in an increasingly globalized world.

Keywords: motivation, generative AI, ChatGPT, prompt engineering, EFL learners, speaking

I. INTRODUCTION

In recent years, the rapid development of Large Language Models (LLMs) has significantly expanded the potential for integrating AI into language education (Brown et al., 2020). Notably, ChatGPT, a generative AI released by OpenAI on November 30, 2022, is considered to have immense potential to provide personalized learning experiences for English learners (Zhai et al., 2023). It was reported that within four days of its release, ChatGPT had surpassed one million users worldwide, and by January 2023, the number of users had exceeded 100 million. According to a survey by Nomura Research Institute (2023), in Japan as of April 2023, the highest usage rates of ChatGPT by occupation were among students (21.6%) and educators (20.5%), indicating its widespread adoption in the education sector.

This study explores effective ways to utilize ChatGPT in English as a Foreign Language (EFL) education, focusing particularly on prompt engineering as a means of unlocking new possibilities for teaching conversational English. Prompt engineering has been recognized as a critical technique for optimizing LLM outputs (Liu et al., 2021), and in the context of language education, it holds the potential to provide tailored and effective instruction based on learners’ needs.

However, research on prompt engineering in EFL education remains limited. Building on the theoretical framework of prompt engineering (Reynolds & McDonough, 2021), this study proposes a methodology for designing effective prompts for teaching conversational English using ChatGPT. Through this research, we aim to introduce a new paradigm for AI-assisted language education while addressing its limitations and ultimately contributing to the improvement of EFL learners’ conversational skills.

- Q1:** To what extent does speaking training with ChatGPT enhance motivation among EFL learners?
- Q2:** How effective are prompts designed using prompt engineering theory in supporting language learning?

II. LITERATURE REVIEW

The use of generative AI, such as ChatGPT, in EFL education is gaining increasing attention (Han, Jieun, et al., 2023); however, research on its application based on prompt engineering in EFL contexts remains limited. The study by Zheng, Y., Wang, Y., Liu, K.SX. et al. (2024) examined the integration of generative AI technologies in EFL learning and the influence of learners' motivation on the acceptance of these technologies. This study employed the Unified Theory

of Acceptance and Use of Technology 2 (UTAUT2), a model used to explain how individuals adopt and use new technologies, and investigated the interaction between key constructs of UTAUT2 and motivation, as modeled by Self-Determination Theory (Deci & Ryan, 1985), in shaping learners' behavioral intentions and actual use of generative AI tools in EFL learning. Moreover, the study argued that in order to enhance learners' motivation in EFL learning using generative AI, it is crucial not only to introduce the technology but also to design a learning environment that respects learners' autonomy and supports their achievement of learning goals.

In the context of reading comprehension question development, the automation of high-quality question generation has been long desired, as teachers typically invest considerable time and effort in creating such questions. However, the inconsistency in question quality and the lack of transparency and validation in evaluation methods have been noted as key challenges (Kurdi, 2020). To address these issues, Lee, Unggi, et al. (2024) conducted research using design and development research to develop and validate an Automatic Question Generation (AQG) system leveraging ChatGPT's large language model (LLM). The study focused on creating a prompt engineering protocol specifically tailored for AQG, demonstrating that combining LLM with prompt engineering could generate statistically reliable questions.

In addition, Young & Shishido (2023) explored the potential of using ChatGPT to create reference dialogues for EFL chatbot systems, addressing the challenge that EFL students often lack opportunities to practice real conversations, which impedes the improvement of their speaking skills. They found that the generated dialogues were particularly suitable for A2-level (beginner-level) students according to the Common European Framework of Reference for Languages (CEFR), as these dialogues were easy to understand and covered vocabulary familiar to students at this level. They also reported that the majority of the dialogues created for B1-level (intermediate-level) students provided sufficient stimulation for learning new vocabulary. Furthermore, they argued that it would be beneficial to explore and experiment with different prompt engineering techniques to enhance the diversity and quality of dialogues generated by ChatGPT.

Lastly, Ali et al. (2023) incorporated "in-context learning," a technique in which the LLM is provided with human-like instructions and specific examples to help it understand the context and perform complex tasks accordingly, into a generative AI chatbot (TeacherGAIA). They concluded that the chatbot, equipped with generative AI features, has the potential to serve as an effective tool for supporting self-directed learning and self-assessment.

III. METHODOLOGY

The purpose of this study is to investigate whether conversational exchanges between ChatGPT and EFL learners can be successfully established by using prompts developed based on prompt engineering theory. A prompt refers to an instruction or input given to a LLM such as ChatGPT, and the quality of the output is highly dependent on the quality of the prompt (Shishido, 2024). Specifically, it explores how

designing prompts that are tailored to the learners' proficiency levels and learning objectives influences the quality of the dialogue generated by ChatGPT. As previous research has revealed, the quality and effectiveness of content generated by AI models are heavily dependent on the nature of the prompts provided. Prompt engineering is a crucial technique for maximizing the interaction between AI and learners, and in EFL education, it is essential for generating conversations that meet the learners' needs.

In this study, I recorded how conversations with ChatGPT varied depending on the type of prompts used. Conversations were documented based on each of the prompt engineering techniques. The version of ChatGPT employed was ChatGPT for iOS 1.2024.115 (free plan), with the language set to Auto-Detect, no personalization settings applied, and memory enabled. Data collection took place between October 1 and October 22, 2024. To ensure accuracy in the prompt content, each prompt was sent to the participants via text by the researcher, and they were instructed to copy and paste the prompts into ChatGPT. Furthermore, since ChatGPT has the ability to incorporate prior conversation history into its subsequent responses, two types of prompts were initiated as separate new conversations to avoid any contextual influence. Zero-shot Prompting refers to providing instructions for a task to an LLM without offering any specific examples. According to Li (2023), the advantages of zero-shot prompting include efficiency—since there is no need to create examples for each new task, reducing time and costs; flexibility—due to its applicability across various tasks; and bias reduction. On the other hand, another prompt, Chain-of-Thought Prompting adds phrases like "Let's think step by step" to the instructions helps the model better understand the task and produce more accurate reasoning, according to Wei et al. (2022).

There were three participants (A, B, and C), all of them were business persons who are learning English. Participant A regularly uses English in both professional and personal contexts and has no anxiety about using the language, with an advanced proficiency level of approximately CEFR C1. Participant B rarely uses English in daily life but regularly takes TOEIC, Eiken, and IELTS exams to maintain his motivation, with an upper-intermediate proficiency level of around CEFR B2. Last, not but least, Participant C is a foreign-based company and the common language in the company is English, but he uses ChatGPT daily to check his English expressions.

Moreover, in order to closely examine how each participant's conversation with ChatGPT unfolded and how the responses varied depending on the different prompts, only three participants with differing levels of English proficiency were selected for this study.

The contents of the materials

- (1) 3 days free English conversation with AI for 5 minutes.
- (2) 3 days English conversation with AI with prompts specified by the researcher for 3 days
- (3) Web survey (prompt satisfaction, 6-point Likert scale)
- (4) Zoom interview to supplement the above survey

IV. RESULTS AND DISCUSSION

Among the acquired data, the word counts were recorded for the prompt for the content of (1) and (2) as P1 and P2, and Day1, Day2, and Day3, respectively. Regarding the notations shown in the figure 1, “ChatGPT-A” means the number of words generated by ChatGPT when A is conversing with the AI, and “P1-Day1” means the number of words generated on Day 1 using the prompt in (1). In addition, a score on a 6-point Likert scale was recorded for each of Participant A, B and C for the Survey results in (3).

Figure 1. The number of words of each prompt

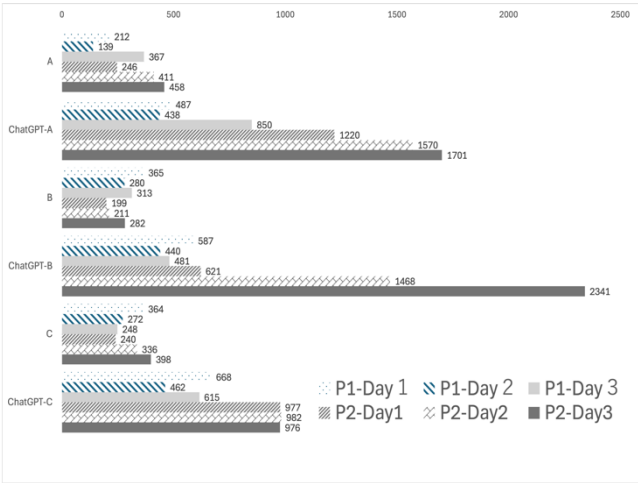
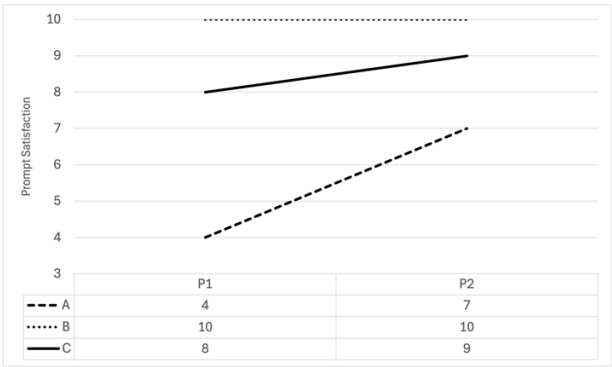


Figure 2. Web Survey Results



Figure 3. Prompt Satisfaction



The survey results highlight the importance of considering learners' motivation when utilizing ChatGPT for EFL instruction through prompt engineering. The differences observed across the three participants underscore how prompt design can significantly impact learners' engagement and perceived value of the generated conversational exchanges.

Participant A, with an advanced proficiency level, consistently rated the prompts and resulting dialogues more positively. The more complex and abstract prompts resonated well, as they were able to provide stimulating conversations aligned with their learning needs and goals. This suggests that for highly motivated learners, prompts that challenge their abilities and foster a sense of competence can be highly effective.

In contrast, Participant B, at an upper-intermediate level, showed more varied responses. This indicates that for learners at the intermediate range, prompt engineering requires a delicate balance to ensure the generated content is engaging, yet not overly complex. Providing prompts that are well-suited to their current proficiency level, while still presenting an optimal challenge, can help maintain their motivation and sense of autonomy in the learning process.

The favorable ratings from Participant C, who regularly uses ChatGPT in his work context, underscore the importance of familiarity and perceived usefulness of the technology. When learners view the AI assistant as a valuable tool that can enhance their language skills, they are more likely to be motivated to engage with it.

These findings align with self-determination theory, which emphasizes the crucial role of autonomy, competence, and relatedness in potentially fostering intrinsic motivation for language learning. By crafting prompts that cater to learners' proficiency levels, learning goals, and perceptions of the technology, teachers can create a learning environment that supports learners' basic psychological needs and may nurture their intrinsic motivation to improve their English proficiency.

As mentioned by Jingushi (2024), there are more likely to be variations in motivation based on learners' various backgrounds, and each learner's use of appropriate prompts may allow for learning to be tailored to their individual personalities and characteristics.

Overall, the survey results shed light on the complex interplay between prompt engineering, learner proficiency, and motivation. Effective integration of ChatGPT in EFL

education requires a deeper understanding of how prompt design can influence learners' engagement, perceived competence, and self-directed language development.

V. CONCLUSIONS

This study aimed to explore the impact of speaking training with ChatGPT on EFL learners' motivation and the effectiveness of prompts designed using prompt engineering theory. Regarding the first research question, the results indicate that no significant changes in motivation were observed among the participants. This outcome can likely be attributed to the fact that the three participants already demonstrated a high level of motivation, as they regularly used English in their professional contexts. Therefore, their baseline motivation was inherently strong, leaving limited room for further enhancement.

In addressing the second research question, the study found that differences in prompt design significantly influenced the quantity of output generated by the AI. Participants reported high levels of satisfaction with the AI-based speaking training, suggesting that generative AI has the potential to contribute to language skill development. While motivation did not noticeably increase, the enhanced output quality and participant satisfaction highlight the promise of integrating generative AI tools like ChatGPT into language learning environments.

One notable limitation of the study is the relatively small number of participants (3) involved. While the diverse English proficiency levels of the participants (advanced, upper-intermediate, and frequent ChatGPT user) provided useful comparisons, a larger sample size would strengthen the generalizability of the findings. Additionally, the data collection period was relatively short, spanning only 3 weeks. Expanding the study duration could yield additional insights into the long-term effects of prompt engineering on learners' engagement, motivation, and language development.

However, there is no doubt that the advent of ChatGPT is transforming the role of EFL teachers. The traditional role of information delivery is shifting, with teachers increasingly expected to act as facilitators who support learners effectively and provide individualized instruction. As argued by Nitta & Baba (2015), EFL education has been evolving from a learner-centered approach to a person-centered approach. Going forward, further research is needed to explore more advanced prompt engineering techniques and their impact on various aspects of EFL learning, such as vocabulary acquisition, grammar understanding, and overall communicative competence. Additionally, longitudinal studies with larger and more diverse participant samples could shed light on the long-term effects of AI-assisted language learning on learner outcomes, attitudes, and motivation.

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REFERENCES

- Ali, F., Choy, D., Divaharan, S., Tay, H. Y., & Chen, W. (2023). Supporting self-directed learning and self-assessment using TeacherGAIA, a generative AI chatbot application: Learning approaches and prompt engineering. *Learning: Research and Practice*, 9(2), 135-147.
- Brown, T. B., et al. Brown, T., Mann, B., Ryder, N., Subbiah, M., Kaplan, J. D., Dhariwal, P., Neelakantan, A., Shyam, P., Sastry, G., Askell, A., Agarwal, S., Herbert-Voss, A., Krueger, G., Henighan, T., Child, R., Ramesh, A., Ziegler, D., Wu, J., Winter, C., Hesse, C., Chen, M., Sigler, E., Litwin, M., Gray, S., Chess, B., Clark, J., Berner, C., McCandlish, S., Radford, A., Sutskever, I., & Amodei, D. (2020). Language models are few-shot learners. *Advances in Neural Information Processing Systems*, 33, 1877-1901. URL: <https://proceedings.neurips.cc/paper/2020/file/1457c0d6bfc4967418bfb8ac142f64a-Paper.pdf>
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York, NY: Plenum.
- Han, J., Yoo, H., Myung, J., Kim, M., Lee, T. Y., Ahn, S. Y., & Answer, A. N. (2023). Exploring Student-ChatGPT Dialogue in EFL Writing Education. In *Thirty-seventh Conference on Neural Information Processing Systems, Neural information processing systems foundation*.
- Jingushi. K.(2024). Motivational Change Collaborated by Ideal L2 Self and Self-Regulated Learning: Comprehensive Observation Based on the Complex Dynamic System Theory. *Language, Communication, and Culture*. 21(1), p65-78.
- Kurdi, G., Leo, J., Parsia, B., Sattler, U., & Al-Emari, S. (2020). A systematic review of automatic question generation for educational purposes. *International Journal of Artificial Intelligence in Education*, 30, 121-204. <https://doi.org/10.1007/s40593-019-00186-y>
- Lee, Unggi, et al. (2024). Few-shot is enough: exploring ChatGPT prompt engineering method for automatic question generation in english education. *Education and Information Technologies*, 29(9), 11483-11515.
- Liu, X., et al. (2021). Pre-train, prompt, and predict: A systematic survey of prompting methods in natural language processing. *ACM Computing Surveys*, 55(9), 1-35. URL: <https://arxiv.org/abs/2107.13586>
- Nitta, R., & Baba, K. (2015). Self-regulation in the evolution of the Ideal L2 Self: A complex dynamic systems approach to the L2 motivational self system. *Motivational dynamics in language learning*, 367-396.
- Nomura Research Institute, 2023, 「Nihon no Chat GPT Riyo Doukou(as of April 2023) ~Riyousya no ohku ga koteitekina hyoka~」 Trends in ChatGPT usage in Japan (as of April 2023) - Positive evaluation by most of the users.,

https://www.nri.com/jp/knowledge/report/1st/2023/cc/0526_1, (Last viewed in September 8, 2024)

- Reynolds, L., & McDonell, K. (2021). Prompt programming for large language models: Beyond the few-shot paradigm. In Extended abstracts of the 2021 CHI conference on human factors in computing systems (pp. 1-7).
- Shishido, J. C. Y. M. (2024). Prompting Brilliance: Unlocking ChatGPT's Potential to Revolutionize EFL Dialogue Practices. The Association for Natural Language Processing, Proceedings of the 30th Annual Meeting. 3155-3159.
- Wei, J., Wang, X., Schuurmans, D., Bosma, M., Xia, F., Chi, E., ... & Zhou, D. (2022). Chain-of-thought prompting elicits reasoning in large language models. *Advances in neural information processing systems*, 35, 24824-24837.
- Young, J. C., & Shishido, M. (2023). Investigating OpenAI's ChatGPT potentials in generating Chatbot's dialogue for English as a foreign language learning. *International journal of advanced computer science and applications*, 14(6).
- Zhai, X., et al. (2023). A systematic review of research on ChatGPT and its implications for digital education. *Educational Technology & Society*, 26(3), 1-18. URL: https://www.j-ets.net/collection/published-issues/26_3
- Zheng, Y., Wang, Y., Liu, K.SX. et al. (2024). Examining the moderating effect of motivation on technology acceptance of generative AI for English as a foreign language learning. *Education Information and Technology*, 1-29. <https://doi.org/10.1007/s10639-024-12763-3>

APPENDICES

All of materials, including results of the survey and script of the conversation with Chat GPT are stored on the following link.

https://drive.google.com/drive/folders/1mCsHcXzJZgnD0wIXnjmD0-Yijooyoey3?usp=drive_link