Using ChatGPT to Learn Vocabulary in Context – The Case of In-Service Teachers Learning Vietnamese

Agnieszka Kiejziewicz¹, Tung Anh Dinh²

^{1,2}RMIT University Vietnam

Email: agnieszka.kiejziewicz2@rmit.edu.vn, anh.dinhtung@rmit.edu.vn

Abstract

In our research, we aim to refine the use of ChatGPT for independent language learning through action research and a cyclical design that involves continuous feedback and improvement. In the first cycle, five learners (in-service non-Vietnamese teachers at RMIT University Vietnam) studied a set of prompts pre-designed by the researchers. They experimented with a 30-minute Vietnamese-learning chatting session with ChatGPT about a topic of their choice. The provided set included prompts asking ChatGPT to generate topic-specific vocabulary, reading passages, word definitions, and language tests. After the chat sessions, the researchers gathered learners' reflections about what they had learned and aimed to evaluate the student's learning through the chat session. Their responses were coded and analysed thematically to identify their attitudes towards using the tool. The primary results suggested that the prompts could be used for vocabulary-in-context learning and have potential for use in language teaching. However, some limitations of ChatGPT have been observed, shedding light on future research on using ChatGPT and similar tools for independent language learning.

Keywords: ChatGPT, vocabulary, in-service teachers, Vietnamese

Introduction

The rapid emergence of digital solutions applicable to the language learning field calls for validation and deeper consideration of their utility. Since the development of personal computers and later smartphones, new technologies have assisted language learning – both as additional and leading learning platforms. With the emergence of AI, the dynamics between the learners and applied technologies have changed, positioning the technology as a virtual tutor rather than an application or interactive service based on pre-defined material (Kohnke et al., 2023). In this context, learning language focuses on the learner's choice of what he wants to learn, personalised needs and vocabulary in context. The worldwide social and cultural disruption related to the emergence of ChatGPT raises questions about the utilitarian character of this language model-based software. Since its emergence in 2022, ChatGPT has gained significant attention as a tool with great potential to enhance effectiveness in various fields. Observing the possibilities of open-access language learning technologies, we acknowledge that ChatGPT can function as a virtual assistant to language learners, especially in languages without strong representation in digital learning applications, such as Vietnamese.

Our pilot research seeks to confirm ChatGPT's values in language learning, potentially paving the way for more organised and systematic use of this tool in the classroom and individual practice. The applied methodology is interdisciplinary action research described by Kemmis and McTaggart (2004), which uses solutions from media studies, language studies, ethnography, and suitable theories related to the critical analysis of learning and teaching design. Noticing that AI can occasionally hallucinate (making up information), which is often triggered by, among others, the use of translanguaging, unclear instructions, or lack of clear

learning prompts, we set out to design and trial several prompts that aim to tackle this issue. In this article, we showcase the results of three research tasks we conducted in the first cycle of our research process – the prompts creation, the tests with the participants (Vietnamese language learners at beginner and intermediate levels of proficiency), and the results of the post-exercise interviews. The prompts focused on vocabulary-in-context exercises popularly used in language teaching (i.e., thematic readings and short tests). The last phase included the analysis of the results, comparing users' experiences. It is expected that by working out how ChatGPT can be used as a language-learning assistant, we can create a new learning-on-demand model which can be successfully applied to Vietnamese language teaching. This paper emphasises the importance of vocabulary acquisition in language learning and the learner's autonomous role in creating meaningful learning content.

Observing the potential of open-access language learning technologies, we acknowledge that ChatGPT can function as a virtual assistant to language learners, especially in languages that have no strong representation in digital learning applications, such as Vietnamese. ChatGPT expands the current technology-driven language-learning repertoire by providing natural feedback to any input queries, functioning both as a tutor and a test provider. We argue for the use of ChatGPT as an in-demand language learning tool for beginning language learners, especially learners of languages with low representation, such as Vietnamese. ChatGPT expands the current technology-driven language-learning repertoire by providing natural feedback to any input queries, functioning both as a tutor and a test provider.

The study reported in this extended abstract is part of a bigger, interdisciplinary research project funded by RMIT Vietnam to explore the impact of ChatGPT on several aspects of academic life project 2AI: The Future of Academic Integrity and Ethics in the Context of Machine Learning Algorithms, which was conducted at RMIT Vietnam in 2023/2024.

Literature Review

In the field of language teaching, several authors have envisioned ChatGPT's potential (e.g., Barriot, 2023; Kohnke et al., 2023), suggesting how such a tool could be used to benefit language learners. With its unique ability to generate answers to any queries in real-time and provide natural-sounding texts in several languages, ChatGPT can provide explanations of vocabulary, create texts, and tailor its language output according to users' demands. Therefore, it can bring many new affordances to language learning. It can act as an assistant or language tutor, helping provide explanations and feedback to students (Song & Song, 2023; Xiao & Zhi, 2024). In addition, ChatGPT has also been proven helpful for performing complicated tasks such as lesson planning (Kim et al., 2023) or test design (Zirar, 2023).

Although ChatGPT has been welcomed in the language classroom contexts (Bin-Hady et al., 2023), some have expressed concerns about ethics and authenticity (Vaccino-Salvadore, 2023). Du & Alm (2024) observed that despite ChatGPT's capability to provide feedback to the learners, it lacks the empathy of human teachers, which emphasises the continued role of human educators in motivating students. How ChatGPT should be systematically implemented in the classroom, its roles in language assessment, and ethical issues in language education are also important questions. There is also a notable gap in studies exploring how language learners autonomously use ChatGPT to learn languages independently, in a self-paced, flexible mode.

Another limitation of current research at ChatGPT and language learning intersection is the lack of diversity in the languages studied. Li et al. (2024), in their systematic review of research conducted in 2022 and 2023 on the use of ChatGPT for language learning, noted that the

majority of research conducted on this topic has dealt with English only. Significant gaps also exist in research on using ChatGPT to study low-resource languages, indicating a need for more diverse and inclusive studies in this area. Zammit (2024), for example, explored the use of ChatGPT in teaching Maltese – a language with low resources- and found that ChatGPT had a limited understanding of this language. Apparently, research can be expanded to study how ChatGPT can be useful for other languages with lower resources, such as Vietnamese.

Research in language teaching and learning usually highlights the role of learners' autonomy (Benson, 2007) and motivation (Dornyei, 2005) to achieve long-term success. Recently, the role of technology has also been emphasised as a tool that can assist language learning, and data-driven learning (Johns, 1991) has been proven to be an effective language-learning method. Observing the potential of open-access large-language models such as ChatGPT, we seek to investigate whether it can serve and be perceived as a virtual assistant to language learners to learn Vietnamese, Vietnam's official language and a popular language spoken by nearly 100 million people all over the world (Nguyen et al., 2018).

Methodology

The current study investigates the potential of using ChatGPT as a language learning assistant, which can have further application in other disciplines and in both contextual and practiceoriented studies. To bridge the current gaps in this research area, we decided to focus on Vietnamese – a language with low resources. We also decided to study learners at the beginning level, as these learners would need the most support, and if ChatGPT could prove to be helpful, this tool could allow them to jump-start in their language-learning journey. Our research is guided by the following questions:

1. To what extent do learners perceive ChatGPT as a helpful tool for Vietnamese learning at the beginning levels?

2. How should ChatGPT be used by learners to learn Vietnamese vocabulary?

This study takes the action-research approach, involving a cyclical process of designing, implementing, observing, and refining educational practices (Kemmis & McTaggart, 2004). With this cyclical design, we could monitor our approach based on feedback from learners and improve the research instruments – a set of prompts to interact with ChatGPT to learn Vietnamese. The process of adjustments to the AI tool's instructional capabilities was linked to the analysis of their experiences, shared through reflections posted on our digital sharing page (Padlet).

In the first cycle, we conducted the following tasks systematically:

- Creating and validating a set of prompts that learners could use to interact with chatGPT to learn Vietnamese.
- Have volunteered participants join the learning sessions with ChatGPT.
- Collect their feedback, analyse the data, reflect & plan for the next cycle.

Five participants volunteered to join this study. They were non-Vietnamese residents working in Ho Chi Minh City, Vietnam, and were learning Vietnamese at the time of the experiment. After being introduced to this prompt set, they were asked to conduct a 30-minute chatting session with ChatGPT using these prompts and provide feedback on their learning experience. The answers from Padlet were collected, analysed and coded to identify the respondents' overall impression of learning Vietnamese via ChatGPT, its strengths and areas for improvement. The data from this cycle then were futher reflected upon by the researchers, leading to adjustments for the next cycles of research. This iterative process aimed to refine the use of ChatGPT for language learning through continuous feedback and improvement. The next section, Results and Discussion, will further elaborate on the details of these tasks.

Results & Discussion

1. Prompt Creation and Validation

The first task in this research cycle featured the design of a set of prompts that can be used to interact with ChatGPT for Vietnamese language learning, which was used later by the participants to try learning the language in a topic of their choice. The provided set included prompts asking ChatGPT to generate topic-specific vocabulary, reading passages, word definitions, and language tests. As an avanced chatbot that is based on a large language model, ChatGPT has the capacity to both generate random texts with high authenticity and to provide answers and explanations for various topics. The prompt design stage considered both of these capabilities of ChatGPT. Following Nation (2022:63), we focused on designing prompts that can help learners elicit the most general aspects of vocabulary knowledge at the beginning levels - A1 and A2 according to the Common European Framework for Reference (CEFR). These aspects include the spoken and written forms, meaning, and use of vocabulary. The latest updates of ChatGPT allowed it to pronounce words and read sentences aloud, which facilitates learners' learning of both spoken and written forms of Vietnamese. In terms of meaning, only the most basic word meanings were targeted, while more complicated aspects (e.g., associations, or constraints on use) were not the focus of the drill. Collocation (Nation, 2022:101) was also considered in the process of creating the prompts since it helps the learners focus on the contextualisation of the words. Based on this theoretical framework, the following five-step prompts were created to help learners explore and learn Vietnamese vocabulary in context:

| Step | Focus | Prompt Details |
|------|--|--|
| 1 | Generate and read | "Generate a [number] words passage about the topic [insert topic] in Vietnamese. The passage should be suitable for learners at the level [your level]." |
| | | e.g. Generate a 50-word passage about the topic of foods in Vietnamese. The passage should be suitable for learners at the level A1 |
| 2 | Analyze word part | "Provide word-part analysis of the sentences in this paragraph. Explain in [your preferred language]." |
| | | e.g. Provide word-part analysis of the sentences in this paragraph. Explain in English. |
| 3 | Explore word pronunciation and meaning | "What is [insert word]? Explain in [your native language]" |
| | | e.g. What is [bánh mì]? Explain in English |
| | | [The participant can click on the loudspeaker icon on ChatGPT to get pronunciation] |

| 4 | Explore collocations / words in other contexts | "Give [number] sentences that contain the word [insert word]" |
|----|---|--|
| | | E.g. Give 3 sentences that contain the word [bánh mì]. |
| 5 | Generating exercise | "Based on this reading, give me a vocabulary test consisting of [number] multiple-choice questions. Do not reveal the answers until I ask you." [Paste your generated in Stage 1] |
| 6. | Checking your answer. | [Type your answers] Is it correct? |

Table 1: The list of prompts used by the participants to engage with learning via ChatGPT

This prompt set was initially created by trial and error, where the researchers themselves experimented with ChatGPT to find the optimal prompts that would give consistent results. In addition, since ChatGPT has been known to produce hallucinated answers, we believed that a process of validating these prompts was needed. After the prompt set was finalised, we asked two Vietnamese native language teachers to try out the prompts repeatedly 20 times with various topics such as food, daily items, shopping, and directions and with different levels (A1, A2, B1, B2) to evaluate the content being generated and the answers ChatGPT provided for the questions involved in steps 5 and 6. We requested the validators to evaluate the answers in terms of 1) the naturalness of the text being generated, 2) the clarity of explanation, and 3) the correctness of the answers for the tests questions.

This validation process was carried out using both ChatGPT 3.5 and ChatGPT4 (the legacy model), with the latter providing more accurate answers. While ChatGPT4 gave accepted responses for most of the prompts given across these levels, some test questions it designed for level B2 (Prompts #5 and #6) showed signs of hallucination and were not agreed by the validators. Therefore, overall, the verification process resulted in a success rate of 90% (18 out of 20 times), and ChatGPT 4 appeared to be quite a reliable tool for generating vocabulary in context, explaining, and testing vocabulary at lower levels. For the beginning levels – A1 and A2, the responses generated by ChatGPT were agreed by the validators in 10 out of 10 times. Therefore, we believe that it can be a reliable language assistant for learners at these levels.

2. The Participants' Feedback

The feedback from learners has been largely positive, with many highlighting the effectiveness of the provided prompts. One participant underlined their enthusiasm, saying that "the prompts were a game-changer. They guided my interactions with ChatGPT, keeping me focused on my learning goals." The self-paced structure was particularly appealing, highlighted by one of the respondents, who observed, "The self-paced structure and interactive feedback made it easy and enjoyable to learn." These comments highlight the power of ChatGPT to allow the learners to tailor the lesson in their own way and pace, something which traditional classrooms cannot afford (Kohnke et al., 2023; Song & Song, 2023; Xiao & Zhi, 2024). Therefore, it appears that ChatGPT can be used by the participants in our study to help them learn Vietnamese outside the classroom.

While the learners' positive reactions while engaging with ChatGPT in their Vietnamese learning sessions indicate their willingness to accept using technology in language learning, they also have implications from the adult learning perspective. In general, theories related to adult learning have emphasised the importance of experience (Kolb, 2014), whereby the learners learn best via meaningful construction of knowledge. In this case, the experiential

learners perceived that they could build knowledge through interaction with the AI through autonomous, self-directed learning. Constructivism underlines the importance of personal experiences and interactions with the world as the foundations of the knowledge-building process (Piaget, 1977). In the context of in-demand language learning, constructivism positions the learner as the primary agent of the learning journey. Following this statement, ChatGPT supports constructivist principles by offering an interactive environment where learners can engage with language content in a contextual and meaningful way while defining their objectives and interests by themselves. The prompts act as an encouragement to explore language in real-world scenarios, building vocabulary and grammar knowledge through experiential learning (Kolb, 2014). As ChatGPT acts as a conversational partner by providing immediate feedback and allowing learners to control the pace and content of their learning, it creates an active, contextual, and personalised learning surrounding.

Interestingly, one of the respondents described the ChatGPT learning experience as "chatting with a tutor who could instantly help with new words and phrases." To this end, it seems the learner had acknowledged ChatGPT as a real human. This comment was in line with the findings by Du and Alm (2024), who reported in their study that several students "experienced a sense of companionship" and were motivated to study by interacting with ChatGPT. However, the authors also noted that not all students would feel the same, as several others expressed the need for more human interactions. The preference for a real human teacher may also be shown in some feedback showing concerns about the limitations of ChatGPT, such as its inability to "capture cultural nuances," and some learners expressed uncertainty about the bigger improvements in their language skills in the long term, considering Chat's limitations. These concerns are similar to those expressed by Zammit (2024), who suggests that ChatGPT is still limited in understanding languages with low resources. As ChatGPT is continuously being updated, with more training and fine-tuning, it is highly potential that this language model will be improved to address these concerns.

On the other hand, it needs to be added that the learners' feedback may vary depending on factors such as their motivation or their level of technological acceptance (see Pan, 2020), or even the quality of the answers they received based on the version of ChatGPT that they used. The differences in learning results can be observed when using various models of ChatGPT (4, 40, and 40 mini), with the paid version providing more stable outcomes and fewer instances of AI "hallucination." Despite considering this issue and introducing improvements to the workshops and materials, learner feedback on using ChatGPT for language learning is mixed and somewhat general, reflecting limitations in the current data collection method. The lack of detailed engagement from learners underscores the importance of motivation and autonomy in language learning, and it points to the continued need for formal classrooms and human interaction. Additionally, the concept of "prompt literacy" (Hwang, 2023), along with issues related to technology acceptance and the need for formal linguistic knowledge, are noted as potential barriers to fully integrating ChatGPT into language learning. These challenges suggest that while ChatGPT has potential, it is not a complete substitute for traditional language learning methods. As we further observed, ChatGPT can provide a good and cost-effective preparation before engaging in in-class teaching or traveling, which meets our aims, leading to the practical application of the project.

Last but not least, in the context of self-directed language learning with ChatGPT, the cognitive load theory and the cognitivist approach were critical for understanding effective learning principles. Cognitive load theory, proposed by John Sweller (1988), emphasises that "learners have limited working memory capacity, and instructional design must be structured to avoid overwhelming them." According to this finding, still valid nowadays, we realise that when

using ChatGPT as a tutor, it's essential to consider how much information the AI presents at once, ensuring that learners can process vocabulary, sentence structure, and grammatical rules without overloading their cognitive processes. The cognitivist approach to learning, which focuses on internal mental processes such as perception, memory, and problem-solving, supports this by suggesting that learning occurs best when the information is scaffolded and aligned with the learner's current cognitive abilities (Piaget, 1977). Deciding by themselves on the difficulty level and managing their in-session time, the learners were able to self-monitor the process, thus avoiding exceeding the cognitive load level.

We were referring to the basics of cognitivism and constructivism, applying primary definitions that remain quoted in further, more context-based resources, as we recognize ChatGPT as a groundbreaking tool, which still waits for its set of methodological approaches. Unpacking the theoretical findings further, we observed that by providing clear, concise explanations and immediate feedback, ChatGPT helps reduce cognitive load, allowing learners to focus on essential learning tasks. This can be achieved by working with dedicated prompts and a guided approach, which we provided to the learners. Additionally, ChatGPT's capacity to offer personalized prompts and exercises can be adjusted to meet learners' individual needs, thus optimizing the balance between cognitive load and learning efficiency (Mayer, 2002).

Conclusion

The findings of this project provide a consistent framework for further application and possible research dissemination. To keep up with the dynamics of technological development, for example, ChatGPT's implementation of the newest real-time voice feature, we are considering designing the next cycle of research based on modified parameters. The main thought of this project was related to the structurization of the approach to the tool, focusing on the optimization of the provided functions to ensure a stable and understandable learning experience.

The potential application of this project is significant in revising self-guided language learning in modernized societies, particularly for languages that are underrepresented in digital learning tools, such as Vietnamese. ChatGPT's ability to provide personalized, natural feedback can serve as a flexible, cost-efficient tool for learners at beginner levels. It can be useful for foreign lecturers who need to acquire language skills quickly for integration into new environments, thus feeling more confident and well-prepared when facing new surroundings. Beyond Vietnamese, the methodology developed in this project could be adapted to other less digitallysupported languages, creating a model for global language acquisition. This project also highlights the role of AI in augmenting traditional language education, offering a complementary tool for classrooms and individual learners, which can be also applied to RMIT courses after deeper consideration of ethical and data protection issues. More research is needed to validate whether the prompts can be used in other languages or how to respond to the rapid development of Chat.

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