

Learner Autonomy through the use of ChatGPT by third-year students of English Faculty at University of Foreign Language Studies (UFLS)

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ABSTRACT

This study aimed to investigate the impact of utilizing ChatGPT on learner autonomy of third-year students of Faculty of English at the University of Danang – University of Foreign Language Studies (UD – UFLS). In this research, quantitative methods were employed with a close-ended questionnaire aiming to figure the relationship between student use of ChatGPT and their autonomy. Learner autonomy, in this study, was examined in two aspects, *study habits* and *independence of learning*. The survey involved 103 students; the collected data were analyzed statistically to answer the research questions. The study's results showed that ChatGPT has little impact on the participants' learning autonomy. However, this tool can be useful for learners' study habits thanks to its personalized feedback and recommendations. Although our research has provided more insights into the field of technology-assisted language learning, especially learning with the use of ChatGPT, further research on the relationship of learning autonomy and ChatGPT with a larger sample and in a longer time should be conducted to ensure consistency and reliability of the impacts of ChatGPT on learner autonomy.

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1. INTRODUCTION

Learner autonomy has been demonstrated as an essential capability that greatly affects one's learning process and achievement. In the context of tertiary education where teachers' guidance and lessons are not the only source of education, and students are required to do research and continue to gain insights into their subjects at home, cultivating autonomous learning ability is a major challenge for teachers as well as for schools.

Furthermore, in many parts of the world, since the outbreak of the COVID-19 pandemic, which later led to social distancing, there has been a large-scale adoption of technology in education. Therefore, without the direct assistance of teachers, students were undoubtedly required to improve their learner autonomy to adapt to such a challenging situation, especially in the context of technology-assisted learning. (Lam & Lawrence, 2002).

At the end of 2022, a chatbot generated by OpenAI named ChatGPT was introduced and quickly used in a variety of fields, one of which is education. Its great ability to assist students' learning has initiated new areas of research on technology integration into education, especially in second and foreign language education, including the English language. As a result, this AI-powered tool is much welcomed in English learning programs to encourage learner autonomy (Aljanabi, 2023). ChatGPT has promoted English language learning autonomy as its feedback is normally sent immediately after submission, so students can identify their strengths and weaknesses more quickly and effectively, enabling them to assess their learning processes by themselves (Agustini, 2023). Besides, Mogavi et al., (2023) in their research of social media content analysis (SMCA) of four social media platforms (Twitter, Reddit, YouTube, and LinkedIn) have shown that with the adoption of ChatGPT in their learning process and its tailored learning opportunities, users can monitor their learning more effectively. Additionally, Chat GPT is also able to encourage students to manage their English learning independently, specifically micro (vocabulary and grammar) and macro-English language skills (listening, speaking, reading, and writing). With what is revealed, ChatGPT, should be adapted into English programs to incentivize students to learn autonomously. (Ali, 2023)

The aforementioned studies, albeit aiming to research the impacts of ChatGPT on learner experiences and autonomy, were mainly conducted in foreign educational settings. Little research has been done in Vietnam on the relationship between ChatGPT and learner autonomy. There was only a study on attitudes and expectations of English Language Teaching (ELT) students towards ChatGPT revealing that students find learning with the support of ChatGPT convenient as they can access this AI - based assistance tool anytime they want (Thai, 2023).

In light of that, conducting more research on learner autonomy under the influence of using ChatGPT for English language learning in the Vietnamese context is significantly necessary.

Besides, the aforementioned research only focused on the benefits of ChatGPT on learning independently but hardly mentioned its impacts on learners' study habits in the long run, as the researchers would do in this research. Therefore, the study is conducted with the aim to investigate the impact of utilizing ChatGPT on learner autonomy of third-year students of Faculty of English at the University of Danang – University of Foreign Language Studies (UD – UFLS).

2. METHODS

This study adopted a quantitative research design to investigate learner autonomy through the use of ChatGPT by third-year English as a Foreign Language (EFL) students at the University of Foreign Languages (UFLS). A total of 103 participants were selected using convenience sampling, consisting of 94.17% female and 5.83% male students, with informed consent obtained prior to data collection. A close-ended questionnaire, adapted from the Learner Autonomy Scale developed by Macaskill & Taylor (2010), was employed to assess learner autonomy, comprising three main sections: Personal Information, Usage of ChatGPT and Experiences, and Learner Autonomy. The questionnaire utilized a 5-point Likert scale and was delivered offline or distributed online to the participants using Google Form. The collected data were coded and transferred to R for Statistical Computing for analysis, where the Kruskal-Wallis's test was utilized to examine potential differences in learner autonomy among participants based on factors such as the length and frequency of using ChatGPT, as well as their English proficiency.

Prior to conducting the Kruskal-Wallis's test, the participants' total scores of learner autonomy and separate scores of their Independence of learning and Study habits were calculated using Microsoft Excel. The data were then examined in pairs to investigate the relationships between learner autonomy

and the three aspects, with the alpha level set at 0.05 for all statistical analyses, representing a 95% confidence level.

3. FINDINGS AND DISCUSSION

Third-year students' learning autonomy through the use of ChatGPT *Overall degree of learner autonomy*

The relationship between the length of using ChatGPT and learner autonomy.

For the relationship between how long the students have used ChatGPT and their autonomy, the Kruskal-Wallis's test showed the p-value of 0.7909, which was greater than alpha, and the degree of freedom is 3. The result indicates that there was no significant difference in the overall degree of learner autonomy between the groups of students in terms of length of ChatGPT use.

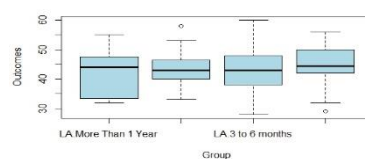


Figure 1. Plot of learner autonomy and length of using ChatGPT

The relationship between the frequency of using ChatGPT and learner autonomy.

The Kruskal-Wallis's test result showed that there was no significant difference in the overall degree of learner autonomy between the groups of students classified by the frequency of using ChatGPT (several times a week, several times a month, once a week, once a month or less, daily), with $p = 0.3871$, larger than alpha and $df = 2$. In other words, the students' frequency of ChatGPT usage has no connection to learner autonomy.

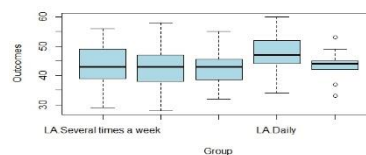


Figure 2. Plot of learner autonomy and the frequency of using ChatGPT

The relationship between learners' English proficiency and their autonomy

The Kruskal-Wallis test yielded the p-value = 0.0083, which was smaller than alpha, and $df = 2$ so there is 95% certainty that there is a difference in learner autonomy between the students at A1-A2 level, at B1-B2 level and at C1-C2 level. Therefore, the Wilcoxon Rank Sum test was done to determine which pairs illustrated a statistically significant difference, and the results were presented as follows:

- p-value = 0.08896 for the comparison between the group of students at A1-A2 level and the group at B1-B2 level. The p-value is greater than alpha, which means there is no statistically significant difference in overall learner autonomy between the two groups.
- p-value = 0.05578, which is greater than alpha, for the comparison between the groups at A1-A2 level and at C1-C2 level. This result indicates there was no difference either in learner autonomy between these groups.

- p-value = 0.01084 for the comparison between the groups at B1-B2 and at C1-C2 level. This p-value was less than alpha, there was a statistically significant difference in the overall degree of learner autonomy between the two groups.

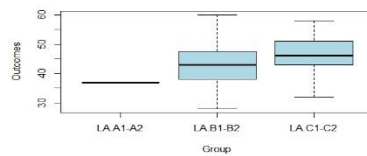


Figure 3. Plot of learner autonomy and learners' English proficiency

Independence of learning

The relationship between the length of using ChatGPT and learner independence of learning.

The Kruskal-Wallis p-value was 0.317 (with $df = 3$), which means, at 95% certainty level, the students' independence of learning was not influenced by the time they spent using ChatGPT.

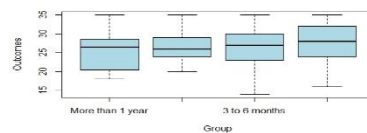


Figure 4. Plot of learners' length of using ChatGPT and learner independence of learning

The relationship between the frequency of using ChatGPT and learner independence of learning.

With the p-values = 0.3562 ($df = 4$), it should be concluded that there was no statistically significant difference in the level of learning independence among the five groups of participants classified by the frequency of their ChatGPT use.

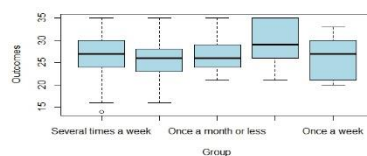


Figure 5. Plot of learners' frequency of using ChatGPT and learner independence of learning

The relationship between the students' English Proficiency and their independence of learning

The Kruskal-Wallis's statistics revealed that there was no significant difference in the level of learning independence between different groups of students classified by their English Proficiency ($p = 0.1543 > 0.05$, $df = 2$).

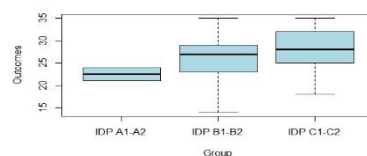


Figure 6. Plot of learners' English Proficiency and their independence of learning

Learner study habits

The relationship between the length of using ChatGPT and students' study habits.

The statistical result showed that the length of utilizing ChatGPT did not affect the users' study habits, with $p = 0.9384 > 0.05$, and $df = 3$.

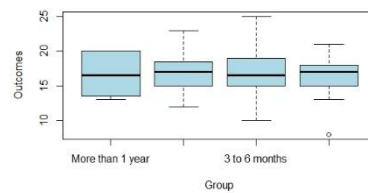


Figure 7. Plot of learners' length of using ChatGPT and their study habits.

The relationship between the frequency of using ChatGPT and students' study.

The Kruskal-Wallis test also yielded similar results for the relationship between how frequent the students have used ChatGPT and their learning habits. The degree of freedom was 4 and p-value was 0.6456, larger than alpha. Clearly, the frequency of using ChatGPT as a tool to study did not impact learners' study habits (with 95% confidence level).

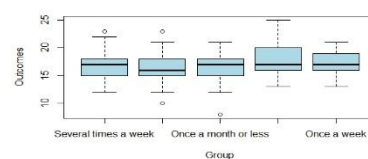


Figure 8. Plot of learners' frequency of using ChatGPT and their study habits.

The relationship between the students' English Proficiency and their study habits.

As the statistics revealed, $p = 0.0001718 < 0.05$ and $df = 2$, students with different levels of proficiency seemed to perform differences in their study habits. Therefore, comparisons between the groups of different levels of Proficiency must be examined using Wilcoxon Rank Sum to determine which two groups showed a statistically significant difference. The test results were as follows:

- p-value = 0.0505 for the comparison between the group of students at A1-A2 level and the group at B1-B2 level. Albeit slightly greater than alpha, the p-value means that there is no statistically significant difference in overall learner autonomy between the two groups.
- p-value = 0.02366, which is smaller than alpha, for the comparison between the groups at A1-A2 level and at C1-C2 level. It can be concluded that there was a difference in the study habits performed by these two groups.
- p-value = 0.0002573 for the comparison between the groups at B1-B2 and at C1-C2 level. This p-value was much less than alpha, which indicates there is quite a big difference in the study habits between these groups.

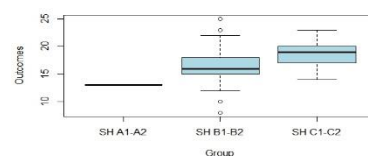


Figure 9. Plot of learners' English Proficiency and their study habits

Discussion

The relationship between the overall degree of learner Autonomy and the use of ChatGPT

The statistical analyses revealed that there was no relationship between learner autonomy and how long the students have used ChatGPT, or between the students' autonomy and the frequency of using ChatGPT. The results were different from what has been proved in other research, mentioning that ChatGPT does help students learn more autonomously (Aljanabi, 2023). This may be due to the differences in learning environments in Vietnam and other countries as well as the sample size. Therefore, further research to clarify the differences in different learning environments and how they

impact students' learning autonomy in the relationship with ChatGPT is necessary. However, the students' English proficiency was found to have a certain influence on their autonomy. The effect was found between the group of C1-C2 English level and that of B1-B2 level. The findings indicate that further research on the impact of using ChatGPT to students' autonomy is needed due to the small population of participants in this research.

The relationship between Independence of Learning and the use of ChatGPT

It was initially assumed that there would be differences between groups of students, but no signs of expected results were found in the study. It is reasonable to conclude that the learner' English proficiency level has no connection to their independence of learning. Besides, the study has come to the conclusion that the relationship between the time spent using ChatGPT and the learner autonomy level was inconsiderable, and also showed that the relationship between students' frequency of using ChatGPT and Independence of learning was insignificant.

From the above-mentioned result, the difference in the Independence of learning between the groups was not considerable, contrary to the theories. However, research in foreign learning contexts revealed that using ChatGPT can promote students' independence of learning (Ali et al., 2023), making the researchers question the differences in Vietnamese learning environment and culture and other countries, as well as whether these differences affect student's independence of learning with the assistance of ChatGPT.

The relationship between Study Habits and the use of ChatGPT

After examining the relationship between the length of using ChatGPT and study habits, the finding shows no difference in students' study habits between groups that are familiar with ChatGPT for a while and groups that have used ChatGPT recently. This research also illustrated the insignificance of frequency of using ChatGPT as a tool on learner autonomy, meaning that the students who used ChatGPT frequently have no difference in study habits compared to students who used ChatGPT occasionally. However, the study concludes with 95% certainty level that there was a relationship between learners' English proficiency and their study habits. Students in C1-C2 level may have different levels of learner autonomy compared to students in B1-B2 level. Therefore, further research on the differences between study habits of B1-B2 and C1-C2 level students' needs to be conducted, and why this difference does not lie in A1-A2 and B1-B2 students or A1-A2 and C1-C students is still questionable.

Limitations of using ChatGPT as a tool to enhance learner autonomy.

Specific difficulties inevitably arise in the research, leading to a number of limitations. Concerning the development of 'learner autonomy' concept, there seems to be little consistency about what autonomy truly is, which is possibly attributable to its complex relationship with some other terms, such as self-directed learning (as cited and discussed in the theoretical background). Despite an immense variety of references given by different researchers, the explicitness regarding the concrete definition of learner autonomy has yet to be obtained.

Another challenge that might be considered is the lack of diversified methods in evaluating learner autonomy. That the current research is mainly based on an autonomy measurement scale, albeit qualified in previous studies, might somehow lead to a lack of objectivity to a certain extent and might accordingly influence the relationship between learner autonomy and ChatGPT use.

Time limit also adds to the limitations of this study. Possible relationships between learner autonomy and students' use of ChatGPT can be observed and analyzed in a longer course. A rather narrow sample of the study is another problem to take into consideration. The research is conducted with the participation of merely 103 third-year students of UFLS, who are not representative enough of the whole research population. Although the research results provide valuable insights, they may not be generalizable to larger populations.

Implications

Based on the results presented above, it is suggested ChatGPT be integrated into the students' study habits, from which the employment of the AI tool will become more consistent among the users and can accordingly enable more reliable research setting for more accurate impact on learner autonomy that was revealed in existing literature. ChatGPT can serve as a component of the learners' academic routines in several ways. First, students can actively use ChatGPT as an assistant tool for their assignments. Accurate learning-oriented prompts are suggested to students to ensure the efficient utilization of ChatGPT in students' learning progress. This is highly suitable for AI-assisted learning tasks provided by teachers.

Second, ChatGPT can provide personalized learning experiences for students. It can facilitate personalized learning by analyzing students' language, feedback, and performance to create customized learning plans that include content, activities, and assessments tailored to the individual student's needs (Fuchs, 2023). Students now can easily follow the tailored learning plans provided by ChatGPT and optimize their time since the planning step for their learning autonomy is not needed.

Moreover, ChatGPT can analyze users' learning style and provide personalized recommendations based on their past performance or goals to help them discover new materials that are tailored to their individual needs and interests. Personalized recommendations in education can boost students' motivation and satisfaction (Zhai, 2022). From what has been discussed, the integration of ChatGPT in the students' academic activities can indirectly promote learner autonomy.

Suggestions

Based on the limitations of our research, several suggestions can be made for future research.

- The researchers believe that expanding the sample of the study is highly recommended, for it can enhance the representational feature of future studies.
- Another aspect worth researching is how ChatGPT can help foster learner autonomy (e.g. via giving suggestions or feedback).
- As was mentioned above, learner autonomy influenced through the use of a tool cannot be reliably demonstrated in the short term. The fact that ChatGPT was just introduced 2 years ago and the exposure to ChatGPT of the students is not high and consistent enough (about 10% of our research participants use ChatGPT every day and only around 7.7% have used ChatGPT for more than 1 year) can contribute to the blurry relationship between learner autonomy and ChatGPT. Therefore, future studies can employ a quasi-experimental or experimental research design in a longer course to ensure the consistency and generalizability of the effects of ChatGPT on learner autonomy.
- Some results were contrary to the theories and to the results of other research in foreign contexts. Therefore, further research in Vietnamese contexts to find out what factors set Vietnamese students' learning autonomy under the influence of ChatGPT apart from other countries is needed.

Contribution

The research findings are expected to provide both students and teachers with insights into the development of learner autonomy, especially in the context of AI-based tools like ChatGPT being used more frequently. Besides, the recommendations are expected to minimize the drawbacks of utilizing ChatGPT in the learning process and maximize the benefits of adopting this tool in promoting learners' autonomy. The findings can also be generalized for similar AI-powered programs like ChatGPT. Furthermore, this study will also make a valuable contribution to existing literature on the same or similar research topics.

4. CONCLUSION

In conclusion, the relationship between student use of ChatGPT and their autonomy in general has rarely been noticeable, according to the study's result. It indicates that there was no relationship between learner autonomy and the length of using ChatGPT, or the frequency of using ChatGPT. However, the students' English proficiency was found to have a connection to learner autonomy

following above findings, especially between those of B1-B2 level and those of C1-C2 level. It is recommended that ChatGPT be incorporated into students' study routines to encourage consistent use among users, accurately assessing its impact on learner autonomy, as highlighted in existing studies. As this research's only focus is the relationship between ChatGPT and learner autonomy, further research can pay attention to how or whether ChatGPT, with its individualized feedback can enhance learner autonomy.

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