THE INFLUENCE OF USING CHATGPT ON VOCABULARY SKILLS

A Thesis

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ABSTRACT

This study investigated ChatGPT's influence on the vocabulary skills, size and depth, of 100 Senior High School students at Southern de Oro Philippines College, assessing educational and personal usage. Using correlational and causal designs, a researcher-made questionnaire and an adapted Phil.IRI test were administered. Data were analyzed using Mean, Pearson Correlation, and Multiple Linear Regression. Findings revealed Moderately High overall usage, driven by High educational use but Undecided personal use. Students had Good vocabulary size but Fair depth. Regression analysis showed personal use negatively influenced both vocabulary size and depth. Educational use positively influenced vocabulary depth but had no significant effect on size. The study concluded that students use ChatGPT as a formal academic tool. Its impact is context-dependent: educational use can promote depth, while personal use may hinder vocabulary development due to overreliance. Recommendations include guided integration by educators to build vocabulary depth and monitoring personal use.

Keywords: Vocabulary Skills, Vocabulary Size, Vocabulary Depth, Educational Usage, Personal Usage

I. INTRODUCTION

The world has reached a point where Artificial Intelligence (AI) is now a crucial resource in the educational experience. ChatGPT, developed by OpenAI, is one of the artificial intelligence tools that is known in this digital era. It is utilized by many individuals as its function is flexible, aiding in terms of educational and personal necessities. It encourages a type of digital engagement that enhances active learning for students, especially in building vocabulary abilities. However, the efficacy and reliability of artificial intelligence depend on how it is utilized.

As per the study of Li (2024) conducted at Columbia University in the United States, the implementation of AI in language teaching marks a transition from traditional methods to creative, AI-enhanced approaches that offer a noteworthy degree of engagement and tailored language learning experiences. It highlights how ChatGPT can provide tailored vocabulary lists and exercises according to the needs of each student, improving understanding and involvement. Moreover, it acts as a digital language partner for vocabulary exercises in authentic conversational contexts.

According to the study carried out by Guo (2023) at Zhaoqing University in China, although AI tools offer immediate benefits for vocabulary learning, findings indicate that traditional methods often fail to encourage lasting, profound retention and practical vocabulary use. It indicates that because of its limitations in grasping context, ChatGPT struggles to apply terminology accurately across different situations. This may result in students mispronouncing words during real-life conversations because ChatGPT cannot grasp expressions and cultural subtleties.

Based on the study of Mabuan (2024) conducted in Manila, Philippines, there are worries about the reliability and precision of responses produced by ChatGPT, the risks associated with excessive dependence on technology, and the potential impacts on the relationships between educators and learners at Far Eastern University. It indicates that depending too much on ChatGPT could lessen chances for collaborative learning by diminishing face-to-face interactions among students and teachers. Students who depend excessively on ChatGPT might not engage with the material thoroughly, hindering their capacity for critical thinking and problem-solving.

Most of the students nowadays are increasingly turning to ChatGPT for their academic tasks, frequently utilizing it to simplify complicated instructions into more comprehensible language. Several factors contribute to this reliance, indicating a diminished ability for critical thought and potential misunderstandings. Although ChatGPT serves as a helpful resource for students, excessive dependence on it might hinder the development of a thorough understanding and critical thinking abilities necessary for their studies.

The concept of ChatGPT and its incorporation into educational methods is fairly recent, yet its increasing importance is becoming more evident with time. The views and experiences of students using ChatGPT for vocabulary learning have not been adequately studied, potentially offering important insights into the advantages and efficiency of ChatGPT. This study seeks to fill the gap in knowledge about how usage with ChatGPT influences vocabulary skills in language learning.

II. METHODOLOGY

This research utilized a correlational and causal design to systematically address the study's objectives. By integrating these approaches, the researcher was able to first establish the strength and direction of relationships between variables, without immediate manipulation, and subsequently investigate the functional cause-and-effect dynamics influencing student educational achievement (Aithor, 2024). According to the Dovetail Editorial Team (2023), this dual methodology, often categorized as explanatory research, is critical for isolating the impact of independent variables while mitigating the influence of confounding factors. This framework ensures high levels of internal validity and objectivity, providing a scientific basis for developing targeted educational interventions and forecasting academic outcomes based on identified causal pathways.

III. RESULTS AND DISCUSSION

Problem 1. What is the level of usage of ChatGPT in terms of:

1.1. educational; and

1.2. personal?

Table 3

Summary Table of CHATGPT Usage

Variables	Mean	SD	Description	Interpretation
Educational Usage	3.71	0.99	Agree	High
Personal Usage	3.14	1.16	Undecided	Moderately High
Overall	**3.42**	**1.07**	**Undecided**	**Moderately High**

Note:4.51-5.00-Very High; 3.51-4.50-Agree; 2.51-3.50-Moderately High; 1.50-2.50-Low; 1.00-1.50 Very Low

Table 3 provides a summary of ChatGPT usage, revealing an overall Mean of 3.42, which is described as Undecided with a Moderately High interpretation. This overall Undecided status suggests that while students are engaging with the tool at a Moderately

High level, its role is not yet fully defined, likely due to the discrepancy between its academic and personal applications. This reflects the ongoing adoption of AI in education, where it is increasingly seen as a significant resource, yet its complete integration into students' lives is still evolving (Sallam et al., 2024). The Moderately High usage level indicates that AI tools are already a key part of the modern learning landscape, marking a clear transition from traditional methods (Li, 2024).

The variable with the highest Mean was Educational Usage, which scored 3.71, corresponding to a description of Agree and a High interpretation. This finding strongly indicates that students have primarily and confidently adopted ChatGPT as an academic tool. This aligns with research showing that a significant portion of students employs AI for a range of academic activities, including writing assignments, research, and studying (Ward et al., 2024). The High interpretation underscores that students value its capacity to provide personalized, 24/7 learning experiences and its ability to simplify complex topics (Albdrani & Al-Shargabi, 2023; Dilmegani, 2025; Limo et al., 2023). This confirms that the perceived utility of ChatGPT is greatest in an educational context.

In contrast, Personal Usage scored the lowest mean at 3.14, described as Undecided with a Moderately High interpretation. This result highlights a significant hesitation among students to integrate ChatGPT into their private, informal lives as readily as they have for school. While studies note that AI chatbots can be used to enhance conversational skills (Yıldız, 2024), the Undecided finding suggests that students are not yet fully comfortable or convinced of its utility in this domain. This may imply that while students see its value in refining a message or generating ideas, they do not yet see it as a natural part of their daily social interactions.

Problem 2. What is the level of vocabulary skills of the students in terms of:

2.1. vocabulary size; and

2.2. vocabulary depth?

Table 4

Level of Vocabulary Size

Score	Frequency	Percentage	Mean	SD	Interpretation
13-15	17	17.0			
10-12	32	32.0			
7-9	21	21.0	8.88	3.64	Good
4-6	22	22.0			
3 and below	8	8.0			

Note:4.51-5.00 Excellent; 3.50-4.50 Very Good; 2.51-3.50 Good; 1.51-2.50 Fair; 1.00-1.50 Poor

Table 4 presents the students' level of vocabulary size, which garnered an overall Mean of 8.88 and a Standard Deviation of 3.64. This mean score falls within the 7-9 range, corresponding to a qualitative interpretation of Good. This Good rating suggests that the student respondents possess a decent vocabulary, which is a critical component of language acquisition. A strong vocabulary size is essential as it significantly influences communication skills and academic success. Indeed, research indicates that students possessing extensive vocabularies generally perform better in reading comprehension and writing, which are crucial skills for success (Masrai & Milton, 2021).

The most frequent score range observed in the data was *10-12*, which accounted for 32 students, or 32.0% of the respondents. According to the study's categorization, this score range is qualitatively interpreted as Very Good. This finding is significant as it indicates that the largest single group of students possesses an above-average vocabulary size. This aligns with the understanding that vocabulary size is a reliable measure of language learners' proficiency. This result supports the idea that a larger

vocabulary size plays a crucial role in achieving academic success by improving learners' capacity to understand and articulate complex concepts effectively (Rahman, 2020).

The score range with the lowest frequency was *3 and below*, representing only 8 students, or 8.0% of the total sample. This score range corresponds to the Poor qualitative interpretation, indicating a notable deficiency in vocabulary knowledge for this small subgroup. While this group is the minority, their low scores suggest they may struggle to express themselves with clarity and nuance. This is a concern because vocabulary acquisition serves an essential role in enhancing overall language proficiency and lays the groundwork for communication skills. These students might benefit from targeted instruction, as research emphasizes that implementing vocabulary acquisition strategies can significantly boost learners' vocabulary growth (Alnan & Halim, 2024).

Table 5

Level of Vocabulary Depth

Score	Frequency	Percentage	Mean	SD	Interpretation
25-30	-	-			
19-24	8	8.0			
13-18	25	25.0	9.87	5.27	Fair
7-12	33	33.0			
0-6	34	34.0			

Note:4.51-5.00 Excellent; 3.50-4.50 Very Good; 2.51-3.50 Good; 1.51-2.50 Fair; 1.00-1.50 Poor

Table 5 presents the level of vocabulary depth among the students, which garnered an overall Mean of 9.87 and a Standard Deviation of 5.27. Based on the study's categorization, this mean score falls into the 6-10 range, corresponding to a qualitative interpretation of Fair. This Fair rating suggests that the students' collective understanding of words beyond their basic definitions is limited, indicating a potential weakness in grasping nuances, semantic relationships, or contextual usage. This finding is significant because vocabulary depth is crucial for creating complex and detailed written works. A

profound understanding of vocabulary is essential for students to express intricate concepts accurately and achieve academic success (Rahayu et al., 2023).

The score range with the highest frequency was *0-6*, which included 34 students, or 34.0% of the total sample. This score range corresponds to a Poor interpretation, revealing that the largest single group of respondents has a very limited vocabulary depth. This suggests that a significant portion of the students struggles with the complex understanding of how words are related and used in different contexts. This lack of depth is a critical issue, as research demonstrates a notable relationship between vocabulary depth and GPA. This implies that students who possess a less extensive vocabulary depth are less likely to attain superior academic performance (Alsahafi, 2023).

The score range with the lowest frequency (among those with respondents) was 19-24, achieved by only 8 students, or 8.0% of the sample. This range represents a Very Good level of vocabulary depth, indicating that only a small minority of students has a rich and complex understanding of word meanings and relationships. This small group is likely better equipped to handle the linguistic demands of higher education, such as advanced reading comprehension and argumentative writing. This finding aligns with research showing that vocabulary depth is a significant predictor of writing quality, as it enables learners to express intricate ideas with greater efficacy (Sukying, 2023).

Problem 3. Is there a significant relationship between the extent of use of ChatGPT and the vocabulary skills of the students?

Table 6

Correlation Analysis Between Usage of CHATGPT and Vocabulary Size

	Vocabulary Size				
Grammarly	**r-value**	**p-value**	**Strength of Relationship**	**Decision on Ho**	**Interpretation**
Educational Usage	0.096	0.343	No Relationship	Accept	Not Significant
Personal Usage	-0.285	0.004	Negligible Relationship	Reject	Significant

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Table 6 shows the correlation analysis between usage of ChatGPT and vocabulary size. The personal use of ChatGPT and students' vocabulary size is inversely related; this suggests that higher levels of personal usage are associated with lower vocabulary sizes. Personal use registered a computed value of -0.285 with computed p-value of 0.004 which is described as negligible relationship and interpreted as significant. This implies that the computed p-value is lower than 0.05 level of significance. This indicates that students who frequently use ChatGPT for personal purposes may experience some effects on their vocabulary development. It emphasizes the need to monitor how students engage with AI tools like ChatGPT outside educational contexts to reduce any negative impacts on their language skills (Zhang et al., 2024).

The relationship between educational use and vocabulary size appears is not significant. Educational use registered a computed value of 0.096 with computed p-value of 0.343 which indicates no relationship. This supports the idea that educational usage of ChatGPT does not have a relationship on the vocabulary size of the students. The difference between personal and educational use highlights the importance of guided, purposeful integration of ChatGPT in language learning. This also suggests that when

this tool is used properly within the classroom setting, it would not harm the students' vocabulary development and it might be beneficial in supportive contexts (Albdrani & Al-Shargabi, 2023).

The data suggest that personal usage of ChatGPT can hinder the vocabulary growth of the students instead of enhancing it, probably due to reliance on ChatGPT for tasks that are related to language learning. It is also important to consider the usage depending on the situation, because personal use of ChatGPT often involves casual or non-educational interactions that do not encourage vocabulary enhancement (Dalal, 2023). The way how students use ChatGPT significantly influences their language skills, especially their vocabulary size. Encouraging responsible usage of this AI tool can help in having positive outcomes while minimizing possible negative effects.

Table 7

Correlation Analysis Between Usage of CHATGPT and Vocabulary Depth

	Vocabulary Depth				
Grammarly	**r-value**	**p-value**	**Strength of Relationship**	**Decision on Ho**	**Interpretation**
Educational Usage	0.150	0.136	No Relationship	Accept	Not Significant
Personal Usage	-0.285	0.014	Negligible Relationship	Reject	Significant

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Table 7 shows that personal use of ChatGPT and the vocabulary depth of the students is inversely related. Personal use registered a computed value of -0.285 with computed p-value of 0.014 which is described as negligible relationship and interpreted as significant. This suggests that frequent use of ChatGPT in personal aspects can

hinder profound vocabulary development (Guo, 2023), which is critical for language learning.

In contrast, the data show that educational use of ChatGPT does not significantly impact the vocabulary depth of the students. Educational use registered a computed value of 0.150 with a computed p-value of 0.136. The results stated that using ChatGPT for academic purposes does not significantly influence the vocabulary depth of the students. This distinction highlights that AI tools like ChatGPT can enhance educational efficiency without hindering a student's vocabulary development (Albdrani & Al-Shargabi, 2023).

The data in Table 7 emphasized the relationship between the usage of ChatGPT and students' vocabulary depth. The negative impact of using this AI tool in personal aspects on vocabulary depth suggests that there is a need for discipline in students' interaction with ChatGPT. The findings serve as a reminder that while AI like ChatGPT supports education, mindful use is essential. Targeted instruction on meaningful engagement (Misuari-Abdurasul, 2023) better improves student vocabulary outcomes.

IV. CONCLUSIONS

This study came up with the following conclusions based on the findings of the study:

1. Students perceive ChatGPT as highly useful for school-related tasks, but remain undecided about integrating into personal conversations.
2. Students' level of vocabulary skills is of varied levels.
3. Personal use of ChatGPT had an inverse correlation on students' vocabulary development.

4. ChatGPT's influence depends on how it is used.

V. RECOMMENDATIONS

Based on the findings and conclusions found in this study, the following recommendations are presented.

1. Given the High educational use, ignoring ChatGPT is unacceptable; instead, actively guiding its integration is necessary for educators. It is recommended that teachers develop specific learning activities that utilize the tool's strengths, such as using it to generate multiple sentence examples to enhance contextual understanding. Clear policies on AI usage should be established to promote it as a supportive academic tool.
2. The Fair rating in vocabulary depth must be addressed. Teachers could design tasks that go beyond simple definitions and focus on depth, such as exploring etymology, morphology, and connotation, areas where students used the tool least. Students should be encouraged to use ChatGPT to ask why and how words are used, not just what they mean, to build a richer, deeper vocabulary.
3. The teacher will monitor and limit the students' personal use of ChatGPT can help in preventing negative effects on vocabulary learning to happen. Providing clear guidelines on meaningful AI tool engagement can help enhance the benefits of ChatGPT in vocabulary development.
4. ChatGPT can be used mainly for educational purposes to enhance vocabulary learning. Future researchers may explore other variables to repute or to validate the findings of the study.

VI. **REFERENCES**

1. Aithor. (2024). Descriptive correlational design in research. Aithor.com. https://aithor.com/essay-examples/descriptive-correlational-design-in-research
2. Albdrani, R. N., & Al-Shargabi, A. A. (2023). Investigating the effectiveness of ChatGPT for providing Personalized Learning Experience: A case study. International Journal of Advanced Computer Science and Applications, 14(11). https://doi.org/10.14569/ijacsa.2023.01411122
3. Allagui, B., & Naqbi, S. A. (2024). The contribution of vocabulary knowledge to summary writing quality: vocabulary size and lexical richness. Teaching English as a Second or Foreign Language—TESL-EJ, 28(1). https://doi.org/10.55593/ej.28109a5
4. Alnahhal, M., Alali, H., & Alshamsi, R. (2024). The effect of ChatGPT on education in the UAE. International Journal of Emerging Technologies in Learning (iJET), 19(06), 65–78. https://doi.org/10.3991/ijet.v19i06.49799
5. Alnan, A., & Halim, H. A. (2024). Examining vocabulary learning strategies and vocabulary size among Syrian EFL learners. Indonesian Journal of Applied Linguistics, 14(1), 12–25. https://doi.org/10.17509/ijal.v14i1.70356
6. Alsahafi, M. (2023). The relationship between depth of academic English vocabulary knowledge and academic success of second language university students. SAGE Open, 13(1). https://doi.org/10.1177/21582440231153342
7. Bereiter, C. (1994). Constructivism, Socioculturalism, and Popper's World 3. https://eric.ed.gov/?id=EJ494135

8. Corpuz, J. M. M., Morales, A. N., Clarin, A. S., Dionio, B. B., & Cocolan, J. V. (2024). Students' Vocabulary Skills in Relation to their Reading Comprehension in Language Literature. International Journal of Research and Innovation in Social Science, VIII(X), 2137–2150. https://doi.org/10.47772/ijriss.2024.8100183
9. Dalal, K. (2023). Goal-Setting for students: using ChatGPT/GPT-4. Orange County Department of Education. https://www.linkedin.com/pulse/goal-setting-students-using-chatgptgpt-4-kunal-dalal
10. Das, S. R., & JV, M. (2024). Perceptions of Higher Education Students towards ChatGPT Usage. International Journal of Technology in Education, 7(1), 86–106.
    a. https://doi.org/10.46328/ijte.583
11. Dilmegani, C. (2025). Top 10 ChatGPT Education use cases in 2025. AIMultiple. https://research.aimultiple.com/chatgpt-education/
12. Dovetail Editorial Team. (2023). Causal Research Design: Definition, benefits, examples. https://dovetail.com/research/causal-research/
13. Gregersen, & Erik. (2025). *ChatGPT | Definition & Facts*. Encyclopedia Britannica. https://www.britannica.com/technology/ChatGPT
14. Guo, N. (2023). Research and Application of Vocabulary Integration into Articles Using ChatGPT. Novelty Journals, 10(3), 67–77. https://doi.org/10.5281/zenodo.10432528
15. Hasan, M. K., Seraj, P. M. I., & Chakma, M. (2020). Vocabulary Depth Knowledge and Academic Reading Comprehension of Business EFL Undergraduates: a Correlational Design Study. Humanities & Social Sciences Reviews, 8(4), 646–656. https://doi.org/10.18510/hssr.2020.8464

16. Imran, M., & Almusharraf, N. (2023). Analyzing the role of ChatGPT as a writing assistant at higher education level: A systematic review of the literature. Contemporary Educational Technology, 15(4), ep464. https://doi.org/10.30935/cedtech/13605
17. Khamis, N., Bareed, N. A., & Suryani, I. (2024). Academic Word List and CEFR Levels: Profiling academic vocabulary in a Technical University Learner corpus. International Journal of Academic Research in Business and Social Sciences, 14(10). https://doi.org/10.6007/ijarbss/v14-i10/23102
18. Li, Y. (2024). Usability of ChatGPT in second Language acquisition: Capabilities, effectiveness, applications, challenges, and solutions. Studies in Applied Linguistics and TESOL, 24(1). https://doi.org/10.52214/salt.v24i1.12864
19. Limo, F. a. F., Tiza, D. R. H., Roque, M. M., Herrera, E. E., Murillo, J. P. M., Huallpa, J. J., Flores, V. a. A., Castillo, A. G. R., Peña, P. F. P., Carranza, C. P. M., & Gonzáles, J. L. A. (2023). Personalized tutoring: ChatGPT as a virtual tutor for personalized learning experiences. https://socialspacejournal.eu/menu-script/index.php/ssj/article/view/176
20. Luo, Y., Song, H., Wan, L., & Zhang, X. (2021). The effect of vocabulary depth and breadth on English listening comprehension can depend on how comprehension is measured. Frontiers in Psychology, 12. https://doi.org/10.3389/fpsyg.2021.657573
21. Mabuan, R. A. (2024). CHATGPT and ELT: Exploring Teachers' voices. International Journal of Technology in Education, 7(1), 128–153. https://doi.org/10.46328/ijte.523

22. Mai, D. T. T., Van Da, C., & Van Hanh, N. (2024). The use of ChatGPT in teaching and learning: a systematic review through SWOT analysis approach. *Frontiers in Education*, *9*. https://doi.org/10.3389/feduc.2024.1328769
23. Malik, M. A., Amjad, A. I., Aslam, S., & Fakhrou, A. (2024). Global insights: ChatGPT's influence on academic and research writing, creativity, and plagiarism policies. Frontiers in Research Metrics and Analytics, 9. https://doi.org/10.3389/frma.2024.1486832
24. Masrai, A., & Milton, J. (2021). Vocabulary knowledge and academic achievement revisited: General and academic vocabulary as determinant factors. Southern African Linguistics and Applied Language Studies, 39(3), 282–294. https://doi.org/10.2989/16073614.2021.1942097
25. Misuari-Abdurasul, S. M. (2023). Vocabulary Proficiency: Its influence on Reading Comprehension Skills among Students in Selected Secondary Schools in Isabela Basilan. International Journal of Management Studies and Social Science Research, 05(03), 382–395. https://doi.org/10.56293/ijmsssr.2022.4650
26. Montevirgen, K. (2025). OpenAI. Encyclopedia Britannica. https://www.britannica.com/money/OpenAI
27. Orrù, G., Piarulli, A., Conversano, C., & Gemignani, A. (2023). Human-like problem-solving abilities in large language models using ChatGPT. Frontiers in Artificial Intelligence, 6. https://doi.org/10.3389/frai.2023.1199350
28. Pascual, L. C., Dionisio, G., & Ilustre, R. (2022). Vocabulary Acquisition and Learning Strategies in Second Language Learning: a review paper. International

Journal of English Language Studies, 4(3), 58–62. https://doi.org/10.32996/ijels.2022.4.3.9

29. Quines, Z. M. (2023). Impact of Students' Vocabulary Level to their Reading and Writing Performance. International Journal of English Language and Linguistics Research, 11(2), 18–32. https://doi.org/10.37745/ijellr.13/vol11n21832
30. Rahayu, A., Rahman, A., & Salija, K. (2023). The effects of Vocabulary size and depth on EFL students writing performance. Rahayu | Pinisi Journal of Art, Humanity and Social Studies. https://ojs.unm.ac.id/PJAHSS/article/view/44232
31. Rahman, A. (2020). Receptive vocabulary size as a predictor of undergraduates' overall cumulative grade point average with English as medium of instruction in universities. Asia-Pacific Social Science Review, 20(3). https://doi.org/10.59588/2350-8329.1316
32. Sallam, M., Elsayed, W., Al-Shorbagy, M., Barakat, M., Khatib, S. E., Ghach, W., Alwan, N., Hallit, S., & Malaeb, D. (2024). ChatGPT usage and attitudes are driven by perceptions of usefulness, ease of use, risks, and psycho-social impact: a study among university students in the UAE. Frontiers in Education, 9. https://doi.org/10.3389/feduc.2024.1414758
33. Saud, M. S. (2023). Measuring the academic vocabulary size of university students in Nepal. *Mextesol Journal.*, *47*(1), 1–12. https://doi.org/10.61871/mj.v47n1-2
34. Sukying, A. (2023). The role of vocabulary size. Depth in predicting postgraduate students' second language writing performance. https://so04.tci-thaijo.org/index.php/LEARN/article/view/263457

35. Sweller, J., Van Merrienboer, J. J. G., & Paas, F. G. W. C. (1998). Cognitive Architecture and Instructional Design. Educational Psychology Review, 10(3), 251–296. https://doi.org/10.1023/a:1022193728205
36. Terano, H. J. R., Rahman, M. M., Sarker, D., Rahman, A. E., & Sakib, A. R. (2023). ChatGPT's Applications in Higher Education: Unmasking Opportunities and Challenges. https://ejournals.ph/article.php?id=24659
37. The Editors of Encyclopaedia Britannica. (2025). *What is artificial intelligence? | Britannica*. Encyclopedia Britannica. https://www.britannica.com/question/What-is-artificial-intelligence
38. Thomas, L. (2023). *Simple Random Sampling | Definition, Steps & Examples*. Scribbr. https://www.scribbr.com/methodology/simple-random-sampling/?fbclid=IwY2xjawJgPk1leHRuA2FlbQIxMAABHrmDIcHhHy3Oqglous9GLe8oP7qugzD9Ishbvlruq9eshdZ2g0eTRaApo6E5_aem_YfBaVhGMWLJnf07rKPODaQ#:~:text=Simple%20random%20sampling%20is%20a,possible%20of%20this%20random%20subset
39. Tulsiani, R. (2024). Creating adaptive learning with ChatGPT (AI). eLearning Industry. https://elearningindustry.com/creating-adaptive-learning-with-chatgpt-ai
40. UKEssays. (2019). Resources in Teaching and Learning. Retrieved from https://www.ukessays.com/assignments/resources-in-teaching-and-learning.php?vref=1
41. StudySmarter. (2024). *Vocabulary Breadth: Definition & Importance.* StudySmarter UK. Retrieved from https://rb.gy/34gtgw

42. Ward, B., Bhati, D., Neha, F., & Guercio, A (2024). Analyzing the impact of AI tools on student study habits and academic performance. Cornell University. https://arxiv.org/html/2412.02166v1
43. Yıldız, C. (2024). ChatGPT Integration in EFL Education: A Path to Enhanced Speaking Self-Efficacy. Novitas-ROYAL (Research on Youth and Language), 18(2), 167–182. https://doi.org/10.5281/zenodo.13861137
44. Zahrani, S. M. A., & Chaudhary, A. (2022). Vocabulary Learning Strategies in ESP Context: Knowledge and Implication. Arab World English Journal, 13(1), 382–393. https://doi.org/10.24093/awej/vol13no1.25
45. Zhang, S., Zhao, X., Zhou, T., & Kim, J. H. (2024). Do you have AI dependency? The roles of academic self-efficacy, academic stress, and performance expectations on problematic AI usage behavior. International Journal of Educational Technology in Higher Education, 21(1). https://doi.org/10.1186/s41239-024-00467-0