Generative AI: Opportunities for Active Language Learning Support

生成 AI：能動的言語学習支援の可能性

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ABSTRACT

Generative AI has recently become widely available for a number of applications. To date, few studies have been conducted regarding the use of freely available generative AI platforms for second language acquisition. However, there has been a large volume of research using materials or circumstances similar to those that can be created using generative AI. A variety of ways in which generative AI can be used to support language learning are presented, along with related support from the literature. Practical applications include generating contextual examples for vocabulary and grammar study, creating grammar exercises, conversation practice, writing feedback, and generating customized materials for standardized test preparation. Examples of prompts teachers and students can use to accomplish these tasks are included.

Keywords: Generative AI, materials, language practice, Computer Assisted Language Learning

1. Introduction

There has been a great deal of discussion in recent years about the use of generative AI tools (such as chatGPT, Claude, or Gemini) in academic institutions. Many authors have highlighted the threats these tools pose to academic integrity (e.g. Cotton, Cotton, and Shipway 2023: 228–239, Perkins 2023: 7-24, Yeadon, Inyang, Mizouri, Peach, and Testrow 2023: 1-13) and studies of the effectiveness of various tools for detecting the use of generative AI by students to write essays in second language learning contexts are beginning to emerge (Alexander, Savvidou, and Alexander 2023: 25-43). Concerns have also been raised about issues of accuracy and bias in responses generated by AI (Bender, Gebru, McMillan-Major, and Shmitchell 2021: 610–623). These concerns are important and it is vital that students and teachers alike maintain due vigilance against the use of AI in ways that circumvent learning or result in academic dishonesty. However, the advent of generative AI has also provided teachers with new ways to support learning and student agency. Here, I present several ways in which students and teachers can use generative AI to support language learning, along with practical advice regarding suitable prompts, particularly in chatGPT.

2. Vocabulary and reading

Several language acquisition theories and pedagogies emphasize the need for learners to be exposed to target language in use (e.g. Ellis and Wulff 2020: 63-82, Larsen-Freeman 2015: 263-280, Nation 2013, Webb 2008: 232-245, White 2020: 19-39) as well as the need for repeated

exposure or processing to promote depth of word knowledge and retention (Brown, Waring, and Donkaewbua 2008: 136-163, Schmitt 2008: 329-363, Webb 2007: 46-65, Webb and Chang 2014: 667-686). Presenting words in a variety of contexts not only aids in understanding the meaning of new words but also helps learners grasp their usage in authentic situations, including such things as register and collocations (Webb, Chang, and Newton 2012: 91-120). However, as examples of all but the most frequent language items are widely scattered, it can be difficult to locate sufficient comprehensible examples of particular vocabulary items or grammar patterns to support understanding, much less to aid in retention or to begin the process of proceduralization. As the generative AI systems now available are all large language models, one thing they excel at is generating examples of language. Teachers can use chatGPT and similar AI systems to create tailored example sentences and short stories that incorporate target words, making vocabulary acquisition more engaging and relevant to students' needs.

2.1 Generating examples of vocabulary in context

Using AI, it is easy for teachers to generate as many examples of vocabulary words in context as needed. After entering a simple prompt, such as “Write [number] sentences using [vocabulary word].” chatGPT generates the specified number of example sentences. If more are desired, all one needs to do is enter “Write some more.” Further, if the sentences are difficult to understand, the iterative nature of chat GPT allows users to request that the words be restated in simpler terms. “Use easier words” is typically sufficient for making the examples suitable for learners. If desired, entering “Translate them into [language]” will result in the entire list being translated. Further adjustments can be made to prompts when examples of usage in particular contexts are needed. Teachers can specify genre or context by adding a sentence to their prompts, such as “Make sentences appropriate for use in [situation].” Where “situations” might include diverse scenarios like “academic situations,” “informal conversations,” or “science fiction novels.”

In addition to example sentences, chatGPT can go further by generating whole stories. As with individual words, students who have been asked to learn a list of vocabulary items may have difficulty locating comprehensible texts that contain those words. ChatGPT can be used to generate stories based on word lists. Entering the prompt “Write a story. Include the following words: [list of vocabulary words]” is sufficient to generate a short story containing those words. Occasionally, not all of the requested words are included in the story. In this instance, the iterative nature of the interface allows the user to simply enter “Write another story. Include all of the words not included in the previous story.” Again, if the sentence structure or vocabulary is too difficult, the user can prompt chatGPT to use simpler language. For example, one might include “Use language suitable for a [level] learner of [language].” either in the original prompt or after reviewing output from an earlier prompt.

3. Grammar

Examples of vocabulary items in use are invaluable for language learners. Similarly, examples of grammar patterns in use are useful, if not necessary, for understanding and producing language (Ellis and Wulff 2020: 63-82, Larsen-Freeman 2015: 263-280). AI can assist in presenting grammar patterns within meaningful contexts, adhering to the principles of communicative language teaching (CLT) and task-based language teaching (TBLT) (Ellis 2009: 221-246, Long 2015: 439). This allows learners to see how grammatical structures function in real communication, which is conducive to learning (Nassaji and Fotos 2011). AI-generated examples can provide learners with authentic-like input that demonstrates the pragmatic use of grammar, thereby supporting the development of communicative competence and enhancing learners' ability to apply grammatical knowledge to real-word communication.

Although grammar in context is undoubtedly a valuable tool for language learning, many teachers and students prefer deductive grammar teaching methods that include metalinguistic explanation of grammar constructions (Gladys and Daphnée 2013: 1023-1042, Shirav and Nagai 2022: 102-123). While AI generated examples can help to bridge the gap between focus-on-forms instruction and communicative language teaching, generative AI can also be used in the initial phase of grammar instruction to create tailored grammar exercises and provide explanations for complex grammatical structures. Teachers can generate a range of practice questions and model answers to help students reinforce their understanding of the grammar points under study. Such exercises can be tailored to the proficiency of the learners and their stage of practice. For example, AI can produce exercises ranging from simple gap-fill exercises to more complex sentence transformations or error correction tasks.

3.1 Generating grammar examples and exercises

The process used to generate vocabulary examples can also be used to generate examples of grammar patterns in use. Prompting chatGPT to "Make [number] sentences using the following grammar pattern: [grammar construction]" or "Make [number] sentences using the same grammar pattern as in [sentence]." will yield the desired number of examples. Of course, if the examples are difficult to understand, users can prompt chatGPT to "Use easier words." or "Make examples suitable for [level] [language] learners." and the examples will be re-generated using simpler vocabulary.

Generating grammar exercises is also quite simple. Entering "Make [number] exercises to practice [grammar pattern]." results in a variety of exercises, including fill-in-the-blank, sentence rewrite questions, question formation questions, and sentence completion questions, along with an answer key. If a specific type of question is desired, users can specify the type in the prompt. For example, "Make [number] sentence correction exercises to practice [grammar pattern]." yields three types of correction exercises: identify and correct, rewrite the sentence, and complete the sentence. The type of questions generated can be adjusted by entering additional prompts with no need to re-enter the original prompt.

4. Production Practice

Support for reading, vocabulary, and grammar is highly valuable, but there are additional ways in which generative AI can directly support language learning. Production practice is also an extremely important part of language acquisition (DeKeyser and Sokalski 1996: 613-642, Izumi, Bigelow, Fujiwara, and Fearnow 1999: 421-452, Swain 2005: 471-483). Production practice can lead to improved accuracy and fluency in the target language (de Bot 1996: 529-555) and repeated practice is particularly important for fluency (Nation 2007: 1-12). AI can assist with both conversation and writing practice. The prompts needed for this type of practice are slightly more complicated than for generating examples and exercises, but are not at all difficult.

The importance of output has been upheld by research based on more than one theoretical construct. For example, Swain (2005) argues that producing language pushes learners to process language more deeply than input alone, forcing them to move from semantic processing to syntactic processing. Further, this "pushed output" can help learners notice gaps in their linguistic knowledge, test hypotheses about the target language, and develop automaticity in language use (Swain 1995: 125-144). Other authors, such as Gass and Mackey (2020: 63-82), emphasize the importance of interaction, and the negotiation of meaning that occurs during production when learners modify their output in response to feedback or communication breakdowns.

Generative AI can provide learners with opportunities for meaningful output in a low-stress environment that complements their in-class practice. AI chatbots can engage learners in dialogues on various topics, adapting to the learner's proficiency level and providing immediate feedback (Fryer and Carpenter 2006: 8-14). These AI-driven conversations may help learners develop pragmatic competence and conversational strategies, which can be challenging to practice in traditional classroom settings. Moreover, it is possible to engage in repeated practice that varies slightly each time, thus exposing students some of the variations they might expect in genuine conversation.

Although many teachers may be concerned about allowing students to use tools like chatGPT for writing, it can be useful for generating instant feedback for learners. A variety of studies have shown corrective feedback to be helpful in improving students' control over grammatical forms in their writing, although the most effective type of feedback is still a matter of debate (Russell and Spada 2006: 131–164). Currently, many generative AI users upload a text they have written and prompt chatGPT to correct any errors it finds or improve the style. Several authors have reported that this helps students to improve their final products (Wang 2020: 80-97, Yan 2023: 13943–13967). It is not yet clear how effective these corrections are for improving future writing, though some studies have suggested learners may improve their use of particular grammar points (Kim 2024: 109-133). It may therefore be more beneficial to prompt the AI tool to list errors and provide explanations, rather than simply correcting errors directly in the text. This will both highlight problems with the text and help students to understand those problems. It will also require learners to go through the text and resolve the issues themselves.

This metalinguistic feedback combined with additional processing by students is more likely to result in improved future writing than would be expected from simple corrections (Shintani and Ellis 2014: 286-306).

4.1 Providing conversation practice and writing feedback.

Conversation practice can be done using a screen and keyboard, but doing so will not allow learners to practice listening and speaking. Making use of the built-in "text-to-speech" and "speech-to-text" software of most modern computers and mobile devices can resolve this issue, although some AI platforms include these features as settings. The key to good conversation practice using generative AI is providing the AI with background information. Prompts such as "I want to practice [type of situation]. Imagine you are [role you would like AI to play]. I am [role the user will play]." will allow the AI to ask appropriate questions for the given situation and respond to the answers provided by the user. For example, a user might write "I want to practice a job interview. Imagine you work in the human resources department of an insurance company. I am interviewing for a position in the sales department." Additional information and instructions can be included, such as "Please ask one question at a time. Ask follow-up questions." or "Use sentences that are suitable for a [level] learner of [language]." This practice can be done using the free version of chatGPT or Claude, among others. However, if extensive practice of a particular type is expected, it may be beneficial to overlay a custom app with pre-programmed prompts. This type of practice has been used by some teachers for helping medical students to practice patient interviews. The app sends any one of a variety of patient scenarios to chatGPT, which generates fresh answers based on these scenarios in response to student interview questions each time it is used. This provides students with the opportunity to experience various ways in which patients might reply to the same types of questions and to practice responding appropriately (Ross and Dennisson 2023).

To generate instant feedback on errors in writing, users can use prompts such as "Identify any errors in the following text. List only the errors. Explain each problem. [Student-written text]" This will generate a list of errors without direct correction. To integrate any corrections into their work, students must read the explanations and revise their writing on their own. Teachers may be concerned that students will opt to take the shortcut of instant correction by using prompts such as "Correct any errors in the following text." In that case, a simple remedy might be to require students to submit a copy of the AI output. Teachers could further require students to indicate whether and how they acted on each suggestion offered by the AI, much as authors of journal articles are required to do in response to peer reviewers.

5. Test preparation

Standardized language tests are controversial in terms of their effects on language teaching and learning. Critics argue that these tests can lead to negative washback effects, where teaching practices become overly focused on test preparation instead of overall language development (Cheng, Sun, and Ma 2015: 436-470). They are nonetheless firmly established as requirements

for employment and higher education. Moreover, specific test preparation can improve test scores (Xie 2013: 196-218). Therefore, students feel strong pressure to prepare for these tests and generative AI tools can be used to make customized practice problems for them.

5.1 Generating practice problems

All that is needed for creating practice problems is a simple prompt that specifies the test and section of interest. The following prompt “Make [number] [test] [section] questions. Include the relevant passages.” will generate the specified number of questions along with an answer key. For example, “Make 20 TOEFL reading questions. Include the relevant passages.” results in 4 short reading passages with related questions. ChatGPT can be directed to increase or decrease the length and difficulty of the passages it generates using subsequent prompts. As with conversation practice, using the device’s built-in text-to-speech function allows students to practice listening questions. If a user wishes to practice a particular grammar point or set of vocabulary, chatGPT can create exercises based on a supplied list, using a prompt such as “Make [number] [test] [section] questions using the following [vocabulary list or grammar point]”. Unfortunately, however, the free version of chatGPT does not currently produce photographs or images. Therefore, it cannot be used for listening or speaking problems that rely on reference to an image.

6. Conclusion

Although there are several valid and important concerns surrounding the implementation of generative AI in language classrooms, the technology provides teachers and learners with opportunities to support language learning. With minimal training, users can easily produce example sentences and stories for vocabulary and grammar study, create role-playing sessions for conversation practice, generate feedback on writing errors, and supply practice questions for standardized tests. These uses assist learners in active language learning while avoiding potential problems of plagiarism and academic dishonesty that can occur when using these tools as writing assistants or outline generators. Teachers are encouraged to try the techniques outlined in this paper to determine whether they are appropriate either for use during course planning and materials creation or as methods of independent study they can recommend to students.

References

Alexander, K.; Savvidou, C. and Alexander, C.

2023 "Who Wrote This Essay? Detecting AI-Generated Writing in Second Language Education in Higher Education " *Teaching English with Technology*, 23 (2), 25-43. https://doi.org/10.56297/BUKA4060/XHLD5365

Bender, Emily M.; Gebru, Timnit ; McMillan-Major, Angelina and Shmitchell, Shmargaret

2021 "On the Dangers of Stochastic Parrots: Can Language Models Be Too Big?," *Proceedings of the 2021 ACM Conference on Fairness, Accountability, and*

Transparency (FAccT '21) Association for Computing Machinery, New York, NY, USA, 610–623. https://doi.org/10.1145/3442188.3445922

Brown, Ronan; Waring, R and Donkaewbua, S.

2008 "Incidental Vocabulary Acquisition from Reading, Reading-While-Listening, and Listening to Stories," *Reading in a Foreign Language*, 20 (2), 136-163.

Cheng, L; Sun, Y and Ma, J

2015 "Review of Washback Research Literature within Kane's Argument-Based Validation Framework," *Language Teaching*, 48 (4), 436-470. doi:10.1017/S0261444815000233

Cotton, D. R. E.; Cotton, P. A. and Shipway, J. R.

2023 "Chatting and Cheating: Ensuring Academic Integrity in the Era of ChatGPT," *Innovations in Education and Teaching International*, 61 (2), 228–239. https://doi.org/10.1080/14703297.2023.2190148

de Bot, K

1996 "The Psycholinguistics of the Output Hypothesis," *Language Learning*, 46 529-555. https://doi.org/10.1111/j.1467-1770.1996.tb01246.x

DeKeyser, Robert M. and Sokalski, Karl J.

1996 "The Differential Role of Comprehension and Production Practice," *Language Learning*, 46 (4), 613-642.

Ellis, Nick and Wulff, Stefanie

2020 "Usage-Based Approaches to L2 Aquisition", in Bill VanPatten, Greagory D. Keating and Stefanie Wulff (eds.) *Theories in Second Language Aquisition*, Routledge, 63-82

Ellis, Rod

2009 "Task-Based Language Teaching: Sorting out the Misunderstandings," *International Journal of Applied Linguistics*, 19 (3), 221-246.

Fryer, Luke and Carpenter, Rollo

2006 "Bots as Language Learning Tools," *Language Learning and Technology*, 10 (3), 8-14.

Gass, S. and Mackey, A.

2020 "Input, Interaction, and Output in L2 Acquisition", in Bill VanPatten, Greagory D. Keating and Stefanie Wulff (eds.) *Theories in Second Language Acquisition*, Routledge, 63-82

Gladys, Jean and Daphnée, Simard

2013 "Deductive Versus Inductive Grammar Instruction: Investigating Possible Relationships between Gains, Preferences and Learning Styles," *System*, 41 (4), 1023-1042. https://doi.org/10.1016/j.system.2013.10.008.

Izumi, Shinichi; Bigelow, Martha; Fujiwara, Miho and Fearnow, Sarah

1999 "Testing the Output Hypothesis: Effects of Output on Noticing and Second Language Acquisition," *Studies in Second Language Acquisition*, 21 421-452.

Kim, Raklum

2024 "Effects of Learner Uptake Following Automatic Corrective Recast from Artificial Intelligence Chatbots on the Learning of English Caused-Motion Construction,"

Language Learning & Technology, 28 (2), 109-133. https://hdl.handle.net/10125/73574

Larsen-Freeman, D

2015 "Research into Practice: Grammar Learning and Teaching," *Language Teaching*, 48 (2), 263-280. doi:10.1017/S0261444814000408

Long, Mike

2015 *Second Language Acquisition and Task-Based Language Teaching*, John Wiley and Sons, Ltd., Sussex, United Kingdom

Nassaji, H. and Fotos, S.S.

2011 *Teaching Grammar in Second Language Classrooms: Integrating Form-Focused Instruction in Communicative Context* Routledge,

Nation, I. S. P.

2013 *Learning Vocabulary in Another Language*, Cambridge University Press, Cambridge

Nation, Paul

2007 "The Four Strands," *Innovation in Language Learning and Teaching*, 1 (1), 1-12. doi: 10.2167/illt039.0

Perkins, Mike

2023 "Academic Integrity Considerations of AI Large Language Models in the Post-Pandemic Era: ChatGPT and Beyond," *Journal of University Teaching & Learning Practice*, 20 (2), 7-24. https://doi.org/10.53761/1.20.02.07

Ross, Gary and Dennisson, Jeanette

2023 "ChatGPT and Speech Recognition in the ESP Classroom," JALT PanSig, Kyoto, Japan

Russell, Jane and Spada, Nina

2006 "The Effectiveness of Corrective Feedback for Second Language Acquisition: A Meta-Analysis of the Research", in John M. Norris and Lourdes Ortega (eds.) *Synthesizing Research on Language Learning and Teaching*, John Benjamins, Amsterdam, 131–164

Schmitt, Norbert

2008 "Instructed Second Language Vocabulary Learning," *Language Teaching Research*, 12 (3), 329-363.

Shintani, Natsuko and Ellis, Rod

2014 "The Comparative Effect of Metalinguistic Explanation and Direct Written Corrective Feedback on Learners' Explicit and Implicit Knowledge of the English Indefinite Article," *Journal of Second Language Writing*, 22 (3), 286-306.

Shirav, Anastasia and Nagai, Emi

2022 "The Effects of Deductive and Inductive Grammar Instructions in Communicative Teaching " *English Language Teaching*, 15 (6), 102-123. doi: 10.5539/elt.v15n6p102

Swain, Merrill

1995 "Three Functions of Output in Second Language Learning", in G. Cook and B. Seidhofer (eds.) *Principles and Practice in the Study of Language: Studies in Hounour of H. G. Widdowson*, Oxford University Press, Oxford, 125-144

Swain, Merrill

2005 "The Output Hypothesis: Theory and Research", in E. Hinkel (ed.) *Handbook of Research in Second Language Acquistion*, Lawrence Erlbaum, Mahwah, NJ, 471-483

Wang, Zhijie

2020 "Computer-Assisted Efl Writing and Evaluations Based on Artificial Intelligence: A Case from a College Reading and Writing Course," *Library Hi Tech*, 40 (1), 80-97. https://doi.org/10.1108/LHT-05-2020-0113

Webb, Stuart

2007 "The Effects of Repetition on Vocabulary Knowledge," *Applied Linguistics*, 28 (1), 46-65. https://doi.org/10.1093/applin/aml048

Webb, Stuart

2008 "The Effects of Context on Incidental Vocabulary Learning," *Reading in a Foreign Language*, 20 (2), 232-245. http://hdl.handle.net/10125/66826

Webb, Stuart and Chang, Anna C. S.

2014 "Second Language Vocabulary Learning through Extensive Reading with Audio Support: How Do Frequency and Distribution of Occurrence Affect Learning?," *Language Teaching Research*, 19 (6), 667-686. 10.1177/1362168814559800

Webb, Stuart; Chang, Anna C. S. and Newton, Jonathan

2012 "Incidental Learning of Collocation," *Language Learning*, 63 (1), 91-120. DOI: 10.1111/j.1467-9922.2012.00729.x

White, Lydia

2020 "Linguistic Theory, Universal Grammar, and Second Language Acquisition", in Bill VanPatten, Greagory D. Keating and Stefanie Wulff (eds.) *Theories in Second Language Aquisition*, Routledge, 19-39

Xie, Q

2013 "Does Test Preparation Work? Implications for Score Validity," *Language Assessment Quarterly*, 10 (2), 196-218. https://doi.org/10.1080/15434303.2012.721423

Yan, Da

2023 "Impact of ChatGPT on Learners in a L2 Writing Practicum: An Exploratory Investigation," *Education and Information Technologies*, 28 13943–13967. https://doi.org/10.1007/s10639-023-11742-4

Yeadon, Will; Inyang, Oto-Obong; Mizouri, Arin; Peach, Alex and Testrow, Craig P

2023 "The Death of the Short-Form Physics Essay in the Coming AI Revolution," *Physics Education*, 58 (3), 1-13. DOI 10.1088/1361-6552/acc5cf