

Guiding **Japanese University** **EFL Students** to Use ChatGPT



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Research Overview

Focus

Early attempts to integrate ChatGPT (v4o) into undergraduate EFL writing

Two Inquiries

1. **Black:** Pre-writing brainstorming and exploring sources of information
2. **Underwood:** Writing first drafts without AI assistance and improving with AI feedback

Core Concepts/ Theories

- *Desirable Difficulty* (Bjork, 1994; Bjork & Bjork, 2011): sustaining student effort
- *Theory of Planned Behavior* (Ajzen, 1985, 2005): understanding what hinders or supports productive struggle

Emergent Points of Interest

Clearer **guidance on AI prompt crafting** for students and better **time-management strategies** are needed to maintain ethical use and maximize learning benefits. Both of which will require teachers to **set aside some class time for AI guidance.**

ChatGPT-5

1. Overview

- G**enerative → Creates original content
- P**re-training → Learnt vast amounts of data
- T**ransformer → Advanced neural architecture...

...which allows ChatGPT-5 to handle **complex tasks** and provide **more accurate, context-aware, human-like*** responses than earlier AI models.

***Version 4o** has passed the Turing test. <https://humsci.stanford.edu/feature/study-finds-chatgpts-latest-bot-behaves-humans-only-better>

Research on ChatGPT

(As of 2024, some meta-syntheses of mostly small-scale research)

2. Facts & Myths

1. "GPT provides accurate feedback on students' grammar."

True. *Advanced, nuanced explanations, but requires precise prompting & further interaction.*

2. "Students prefer human feedback on their writing."

False. *AI valued for 24-hour availability, thoroughness, and consistency, and humans for personal interaction.*

3. "Students' writing improves more from human feedback."

False. *No research proving this. Actually, studies show greater improvement from AI feedback.*

4. "GPT facilitates development of critical thinking skills."

True. *Studies show improvement, BUT there is concern that over-reliance on AI inhibits creativity and autonomous problem-solving.*

Our Context

Both researchers teach EFL courses at the same Japanese university in Yokohama.

- **Underwood:** Faculty of Social Sciences
- **Black:** Faculty of Human Sciences

Students: freshmen and sophomores

Courses: content-based reading, writing, and speaking/listening (90 mins.); 3 times per week

Placement: CASEC → beginner, intermediate, advanced levels (average TOEIC 400 at start)

Class sizes: typically 10-20 students

Project Impetus

This inquiry arose from our wish to **better understand how students can use ChatGPT** to support their English learning and cognitive development.

Although many students already rely on digital tools such as translation apps and Grammarly, their use of generative AI often occurs **covertly and without guidance**.

Since research highlights the value of **guided, transparent use**, we introduced ChatGPT into observable classroom and assignment contexts to explore how it might be used more effectively for learning.

Research Questions

Inquiry 1: Finding Information and Pre-writing

→ **RQ1:** How effective are the pre-writing activities for enhancing students' initial engagement with a research topic, and can using ChatGPT complement or impact this approach?

Inquiry 2: First-Draft Writing and ChatGPT Feedback

→ **RQ2:** How much effort are students putting into writing their first drafts in English independently of ChatGPT assistance; Is there sufficient desirable difficulty?

→ **RQ3:** To what extent are students taking notice of ChatGPT corrective feedback and engaging with the tool to further enhance their written English?

→ **RQ4:** What are students' attitudes towards ChatGPT as an effective study tool, and are these attitudes influenced by factors such as time constraints and resource availability?

Inquiry 1: Pre-writing and exploring sources of information

ChatGPT

16 (19) students in sophomore writing course, taught in computer room

Pre-intermediate to Advanced Level language proficiency

Two written assignments: Types of references used from two written assignments categorized, counted, and compared

One in-class activity: Use of teacher-created ChatGPT prompt to find appropriate sources of information in English; Teacher observed and guided students

Two surveys: Administered in class via Google Forms (in Japanese)

Inquiry 1: Background and Goal

Background:

Availability of **online sources** of information has greatly **increased**.

However, for EFL students it can be **time consuming and overwhelming** to find relevant information and to judge a site's veracity.

Thus, spending **too much time** on the search can cause students to **rush** to complete written parts of assignments, and complete them without enough **productive struggle** (i.e., rely exclusively on translation apps).

Goal → Use ChatGPT to find trusted sources of information online effectively, and understand more easily which parts are relevant to their inquiry.

Inquiry 1: Methods

1. Identifying difficulties:

A. Noted types of references students were using for written assignments: Used preparation assignment for writing their Final Reports in first semester to do this.

B. Administered Survey 1:

(Administered in Japanese, most frequent responses in **bold**)

Q2. Which of these *online sources of information* have you used in the past to help you find information on a research topic? (Check ALL that apply): **Wikipedia; Google, Yahoo, other search engines;** Google Scholar; Encyclopedia Britannica; **ChatGPT, other AI;** Our World in Data; TEU Library database, “My Library”; Other

Q3. How confident are you about finding *online sources of information* which you can trust and are accurate? Very confident; Rather confident; **Somewhat confident; Not so confident;** Not confident at all

Q5. What are some difficulties you have had when finding information about a new topic? (Check ALL that apply): **It takes me too much time; I do not know which online sources I can trust;** I cannot judge the trustworthiness of online sources if the Japanese is difficult; **I cannot judge the trustworthiness of online sources when they are in English; I cannot understand the information clearly enough in English;** I cannot judge which information is important and which is not; I cannot judge what is a fact and what is opinion; I sometimes cannot find any trusted information on my topic.

Inquiry 1: Methods

2. Addressing difficulties through ChatGPT:

A. ChatGPT prompt, Version 1:

*Tell me the URL links to 3 **high-level, trusted, up-to-date** sources (in Japanese) of information about the following topic and **quote some relevant sentences** from each:* _____

(Topic: Marriage trends in Japan)

Comments:

- Sources students selected almost all in Japanese; very few in English
- Some sources suggested by ChatGPT not considered "high level, trusted"
- Time consuming for students to find relevant information within long, official reports, even in Japanese
- Students' Reference List entries not uniform, causing difficulty for teacher

Inquiry 1: Methods

2. Addressing difficulties through ChatGPT:

B. ChatGPT prompt, Version 2:

*Tell me the URL links to 3 high-level, trusted, up-to-date sources (such as official government sites and reports, university or other educational web pages, etc.) in **English** of information about the following topic and quote some relevant sentences from each. In addition, **add citations** including **page numbers** of the quotes and make a **Reference List in APA style** for them:*

(Topic: Marriage trends in Japan)

In-class Activity:

Students used this prompt to create a jointly curated reference list of sources in **English** and brief description of each. Difficulties and questions dealt with by teacher in the moment. (50 minutes)

Inquiry 1: Methods

3. Trying it out on their own

A. Assignment: Students used the Version 2 prompt to find information.

Task: 1) Choose one cultural, societal, demographic, environmental, etc. aspect in Japan (or another country) and find information on how it has changed over the years.

2) Find 3 high-level, trusted sources of information. One or more sources should be in English.

3) Print out the key information and bring it to class.

4) In a Google doc, write a reference for each source in APA format and a few sentences about the new information you found.

Inquiry 1: Methods

3. Trying it out on their own

B. Administered Survey 2:

(Administered in Japanese, most frequent responses in **bold**)

Q1. How confident are you about finding *online sources of information* which you can trust and are accurate? Very confident; **Rather confident**; **Somewhat confident**; Not so confident; Not confident at all

Q3. What are some difficulties you had when finding sources of information about your topic for the Class 5 Assignment? (Check ALL that apply): **It took me too much time**; **I did not know which online sources I could trust**; I could not judge the trustworthiness of online sources when the Japanese was difficult; **I could not judge the trustworthiness of online sources when they were in English**; **I could not understand the information clearly enough in English**; **I could not judge which information was important and which was not**; I could not judge what was a fact and what was opinion; I sometimes could not find any trusted information on my topic; Other

Q5. Did you use the ChatGPT prompts provided by the teacher to help you with your *Class 5 Assignment*? **Yes, I did (90%)**; No I didn't; No, but I used my own, original prompts with ChatGPT

Q6. In what ways do you think using the ChatGPT prompts *provided by the teacher* to find sources of information in the *Class 5 Assignment* affected your work? For example, did it make the assignment easier, or more difficult for you and why? Please explain in detail. **Made it easier in some way (60%)**

Inquiry 1: Emergent Points of Interest

Difficulty of Assignment

- Using Version 2 prompt alleviated some of the complexity of the assignment and students reported being able to proceed "more smoothly" than before
- Assignment still thought difficult and time consuming (60%), mainly due to perceived lack of English language ability
 - Teacher can further modify assignment, dividing it into smaller tasks over several weeks

ChatGPT Use

- Realization through experience of strengths and limitations of ChatGPT. For example, that it cannot always be trusted and each source suggested must be verified by accessing the original document
- Gained some experience with modifying prompts when desired response was not given during in-class activity with help of teacher
 - Immediate help and advice from teacher during in-class activity may have increased students' skill and confidence in using ChatGPT effectively

Perceived Helpfulness of ChatGPT

- Streamlined the initial search for information, which had been overwhelming
- Students gained some confidence in recognizing trusted sources of information, even those in English

Inquiry 1: Conclusions

For sophomore Japanese EFL university students (pre-intermediate to advanced), using the teacher-prepared ChatGPT prompt to facilitate their search for appropriate sources of information on an unfamiliar topic seemed useful. The quality of sources of information they used in their writing improved. With strong facts to draw on, the detail and accuracy of information in their writing is also likely to develop.

Nevertheless, it was still a difficult task for these students to find, select, and summarize information taken from the sources they were led to, especially if they were in English. **Instructionally this suggests** a need to

- **divide the pre-writing process into smaller tasks and provide more language support and structure for each step; and**
- **provide more in-class experience and guidance in using the prompt to find sources of information and navigate them, and in modifying the prompt when ChatGPT has not given the desired response.**

Inquiry 2: Writing first drafts without AI assistance and revising with AI feedback

Seven students in first semester freshman writing course

Beginner Level language proficiency

Three written report assignments (120~150 words) on content-based topics (1) Describe a sovereign state; (2) Describe an important period in international history; and (3) Explain the positive and negative aspects of globalization

Three in-class 30~40 min. writing tests (students reproducing reports written at home) with follow-up reading to peers and Q&A (language and content)

Three in-class surveys (in Japanese) via Google Forms

Inquiry 2: Core Concepts/ Theories

- ***Desirable Difficulty*** In cognitive science, *desirable difficulty* (Bjork, 1994; Bjork & Bjork, 2011) refers to learning tasks that are challenging enough to require effort, which strengthens memory and comprehension. For language learners, this helps with vocabulary, grammar, and other skills, enabling recall and creative use. However, excessive difficulty without support can cause frustration and hinder learning, so the challenge must be appropriately balanced with support (Kirschner, Sweller, & Clark, 2006).
- ***Theory of Planned Behavior*** In social psychology, the theory of planned behavior (Ajzen, 1985, 2005) posits that attitudes alone do not determine actions; external factors like limited time often have stronger influence. For students, even if they value writing English themselves, mounting academic and personal commitments may lead them to rely on ChatGPT to meet deadlines. Once this habit forms, it becomes harder to change, despite their original attitudes. Understanding what hinders or supports desirable difficulty can help teachers plan instruction effectively.

Inquiry 2: How Students Wrote Drafts *without* AI and Revised *with* AI feedback

Goal → To promote deeper learning, authentic language use, and guided AI interaction

1. **Orientation** In the first class, students discussed the value of using their own linguistic resources when writing.
2. **First-Draft Drafting** Written at home without AI assistance to create *desirable difficulty*.
3. **ChatGPT Feedback** Students used ChatGPT at home with a structured protocol and pre-crafted prompts (in Japanese) to guide feedback, supporting effective and ethical AI use.
4. **In-Class Testing** Reports reproduced from memory, then read to peers, with Q&A (language and content).

► ChatGPT Writing Feedback Protocol

(English version)

ChatGPT Writing Feedback Protocol (for Students)

This protocol is a method for improving your writing skills using ChatGPT. The goal is not to have ChatGPT provide the correct answers, but to actively recognize your mistakes and work on fixing them on your own.

It might take a little longer at first, but following this method will improve your accuracy, expression, and confidence in English. **While getting corrections from ChatGPT right away is quicker, this process will help you become much better in the long run!** The most important step is to make a strong effort to write in English on your own first!

◆ Stage 1: Get Feedback

First, write your sentences (paragraphs or essays) in English on your own. Afterward, use the following prompt to ask ChatGPT for feedback on **your mistakes**, but remember: **do not ask it to correct them for you yet**. You'll fix them yourself.

💬 Prompt to ChatGPT (copy and use this):

You are an English teacher. I am a Japanese undergraduate student learning English. Please give me feedback on the accuracy of my grammar and vocabulary, focusing only on the necessary mistakes. **Do not correct my mistakes, I want to do that myself.**

Please format your feedback in a clear, easy-to-understand table with each point numbered. The table should include the following information:

1. The sentence with the mistake
2. What kind of mistake it is (e.g., grammar, vocabulary, etc.)
3. An explanation in Japanese of why it is a mistake

Thanks for your help!

◆ Stage 2: Try Fixing the Mistakes Yourself

Now, review the feedback from ChatGPT and **try to fix the mistakes on your own**.

- It's okay to use a dictionary or grammar book to help you.
- If you're still unsure, make your best guess—but **do not ask ChatGPT for the answer yet**.
- **The key here is thinking through your corrections on your own** because this is the best way to improve.

◆ Stage 3: Check Your Corrections

Once you've made your changes, send ChatGPT the following prompt to check your corrections.

💬 Prompt to ChatGPT (copy and use this):

I've tried correcting the mistakes myself. Could you check if I did it right? Also, if there's anything still wrong, could you give me a hint?

- If your corrections are correct, ChatGPT will confirm that 🎉
- If there are still errors, ChatGPT will give you a hint, but it won't give the full answer unless you ask.

Inquiry 2: In-Class Survey (English version)

After finishing your writing in class, please answer these questions. Don't worry, your answers will NOT affect your class grade. This survey is just to help me understand how you worked on your writing assignment. It should take less than 10 minutes.

1. **Did you find enough time to work on your assignment outside of class?** Yes/No→*What made it hard to find enough time (e.g., other homework, job, hobbies, commute, etc.)?*
2. **Did you work on your assignment over two or more days instead of cramming everything just before the deadline?**
3. **How much time did you spend writing your first draft in English by yourself?**
4. **Did you ask anyone (like a teacher, friend, or Study Support Center) to help you with your assignment?**Yes/No→ *How did they help you?*
5. **How did you feel about writing your first draft in English without using ChatGPT or any other AI tool or app?**
 - Very easy
 - A little easy
 - Just right
 - A little hard
 - Very hard → *If it was very hard, which part was difficult? (e.g., thinking of ideas, grammar rules and sentence structure, vocabulary, organization, etc.)* _____
6. **After writing your first draft in English by yourself, how did you use ChatGPT (or other AI / app, for example Google Translate, Grammarly, etc.)?** *You can check more than one.*
 - I didn't use ChatGPT or any AI/ app. → *Go to Question 8.*
 - It translated my Japanese sentences to English. (*Don't worry, be honest!*)
 - It gave me feedback, and I fixed the writing myself.
 - It fixed my writing for me. (*It's OK, be honest!*)
 - I asked questions about grammar rules, sentence structure, vocabulary, etc.
 - Other → *Please explain:* _____
7. **If ChatGPT (or other AI/ app) gave you feedback on your writing, how useful was it for your learning?**
 - Very helpful
 - A little helpful
 - Not very helpful →*Please explain how it helped or didn't help:* _____
8. **Before finishing your assignment this week, think about how many hours you usually slept most nights.** *You don't need to be exact. Just choose the closest one.*
 - More than 9 hours
 - 7-8 hours
 - 5-6 hours
 - Less than 5 hours→ *Did you feel tired when working on your assignment?*

Inquiry 2: Emergent Points of Interest

Effort & Difficulty

- Drafting is hard mainly due to lack of vocabulary/grammar, not topics or idea generation.
- Effort modestly improved over three surveys → likely process familiarity, not proficiency growth

Attitudes vs. Time & Fatigue

- Mostly reported “enough time” to work on their writing (average time 1 hour 37 mins)
- Valued writing first-drafts by themselves and ChatGPT feedback
- Many struggled with other assignments, lack of sleep (5-6 hours per night for most students), and tiredness, which increased over the semester → reduced capacity for independent first-draft writing

ChatGPT Use

- Stronger writers interacted more with AI (feedback/questions), weaker writers less so (task completion).
- Shifted from optimal, interactive use to heavier auto-correction over time.

Perceived Helpfulness of ChatGPT

- Nearly all rated very helpful; however, often interpreted as completion aid rather than learning tutor.

Inquiry 2: Conclusions

For first-semester EFL freshmen (CASEC beginners), ChatGPT functions as a bridge between low confidence and high writing demands. Their independent writing effort grows modestly, but fatigue, time limits, and weak linguistic control lead to increasing instrumental reliance on AI for task completion rather than as a writing tutor. To better ensure more ethical and effective use of ChatGPT, **instructionally this suggests** a need to

- **provide more in-class guidance on how to craft prompts for follow-up interaction with ChatGPT, more likely providing students with the appropriate level and amount of correctional feedback; and**
- **provide further guidance on efficient time management (and broader lifestyle habits) to allow for such follow-up interaction with ChatGPT.**

Future Directions

...to promote effective and ethical use of ChatGPT

Creating MORE SPACE in the week-by-week syllabus for

- in-class guidance on how to craft effective prompts for follow-up Q&A with ChatGPT;
- dividing the pre-writing process into smaller tasks;
- greater language support and structure at each step; and
- ongoing guidance on efficient time management and (perhaps) broader lifestyle habits

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