



禍福相依？ChatGPT應用於第二語言寫作教學之初探

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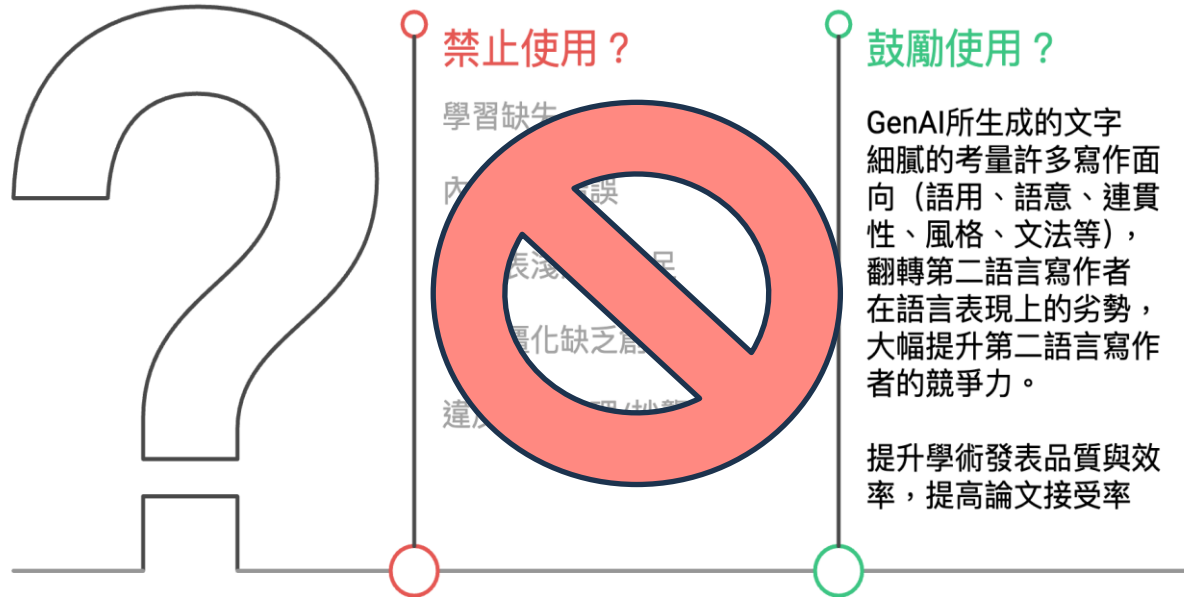
臺北醫學大學
TAIPEI MEDICAL UNIVERSITY

問題意識

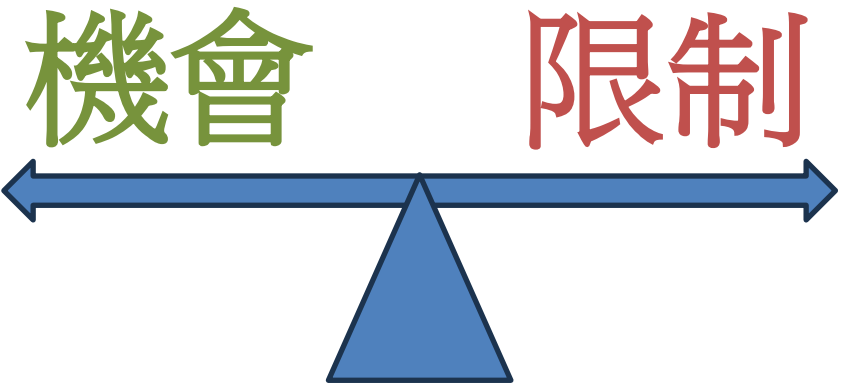


研究動機與目的

GenAI工具在寫作教學的角色



教學實證研究



研究目的與問題

本研究探究如何將**GAI**融入第二語言寫作教學，透過整合第二語言寫作教學理論與培植人工智慧素養的**教學設計**，讓學生在**不同寫作階段(process writing)**融入**GAI**工具，引導學生透過實作，探究**GAI**在英文寫作的機會和限制，目的在培植第二語言寫作者的**AI literacy**，使他們能以合宜有效的方式將**GAI**應用於寫作，提升寫作品質。

- ◆ 探究在本教學設計裡，第二語言寫作者**如何**在不同寫作階段(pre-writing, drafting, and revision)使用**GAI**工具？
- ◆ 探討本教學設計對發展**AI literacy**是否有幫助？
- ◆ 評估本研究教學設計能否提升學生的寫作學習成效與品質？

文獻探討



Tseng and Warschauer (2023): an AI Literacy Framework

- ◆ Understand (了解GAI工具的功能及優缺點)
- ◆ Access and navigate (操作並連結AI工具功能和寫作任務)
- ◆ Prompt AI (具備下指令的能力)
- ◆ Corroborate (評估GAI生成內容正確與否的能力)
- ◆ Incorporate AI-generated texts (具備整合GAI生成文字與自己寫作的的能力)

教學設計與活動: Preparation

1

Understand

Leon Furze
Consultant, author and PhD candidate

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Good ideas: When to use GenAI for brainstorming



Idea Generation

Discussion questions:

1. Have you used GenAI for idea generation? If yes, can you give us more information about how you use AI for idea generation?
2. Do you think it's a good idea to use AI for idea generation? Why or why not?
3. Do you agree the statement that it might be better to avoid AI for idea generation? Why and why not?

[Reading & Discussion]

[Good ideas: When to use GenAI for brainstorming](#)

(read the article for 5 minutes)

"Take a few minutes to jot down key points or important information from the article you just read.

Once you've gathered your thoughts, share your reflection, thoughts, reactions, or any connections you can make to your own experiences."

[Reading & Discussion]

Key takeaways:

In fact, despite the focus of this article, I'd recommend you *don't* use AI for most brainstorming tasks. Give the process time. Allow it to be slow and messy. You might not come up with as many ideas as a chatbot, but they will be more meaningful *to you*, and that's what matters. There are also some [recent studies which suggest AI-creativity isn't all it's cracked up to be](#), and while using AI for creative tasks might help the least creative member of a group, it may actually hinder those who are naturally creative and curious.

The key is to view AI as a tool to enhance and complement human creativity, not replace it entirely. Use it purposefully, but don't become overly reliant on it at the expense of your own generative abilities. The most impactful ideas often come from the unique blend of knowledge, experiences, and imagination that only human minds can provide.

2

Access and navigate

3

Prompt AI

Now let's try to brainstorm with AI

- What are some of the **prompts** you may use considering the requirements of the project proposal assignment? (based on the human-generation ideas or start from scratch?) (brainstorm prompts, [Tt version of prompts](#))
- Discuss strategies you may use to elicit the most closely related information from AI

Basic Topic Generation Prompts

1. "I need to choose a controversial topic for my proposal writing assignment. The topic must be something I am interested in, have personal experience with, and is debatable. Can you suggest some topics that fit these criteria?"
2. "Suggest some controversial topics for a proposal paper that relate to [a hobby, interest, or field I am passionate about]. I need to have some personal experience with the topic."

Refining Topic Selection

3. "Here are some topics I'm considering: [list topics]. Which ones seem the most controversial and researchable? Can you suggest ways to make them more specific?"
4. "I am interested in [topic], but I'm not sure how to frame it as a controversial issue. Can you help me find a debatable angle?"

Personal Experience Connection

5. "I have personal experience with [a specific issue, such as remote learning, veganism, or social media addiction]. What are some controversial debates surrounding this topic that I could explore?"
6. "I want to write about [a personal experience, such as working in retail or playing competitive sports]. How can I turn this into a debatable research topic for my proposal?"

Exploring Opposing Views

7. "I'm considering writing about [topic]. What are the main arguments for and against this issue?"
8. "I need a controversial topic where there are strong arguments on both sides. Can you provide examples along with the key opposing perspectives?"

Testing and Evaluating Topics

9. "I'm debating between these two topics: [Topic A] and [Topic B]. Which one seems stronger for a proposal, and why?"

[Brainstorm using AI]

— A THINKING ROUTINE FROM PROJECT ZERO, HARVARD GRADUATE SCHOOL OF EDUCATION —

Compass Points

A routine for examining propositions.

1. E = Excited
What **excites** you about this idea or proposition? What's the upside?
2. W = Worrisome
What do you find **worrisome** about this idea or proposition? What's the downside?
3. N = Need to Know
What else do you **need to know** or find out about this idea or proposition? What additional information would help you to evaluate things?
4. S = Stance or Suggestion for Moving Forward
What is your **current stance** or opinion on the idea or proposition? How might you move forward in your evaluation of this idea or proposition?

Purpose: Why use this routine?
This routine helps students flesh out an idea or proposition and eventually evaluate it.

Application: When and where can I use it?
This routine works well to explore various sides and facets of a proposition or idea prior to taking a stand or expressing an opinion on it. For instance, the school may be considering the idea of a dress code, a teacher might present the class with idea of altering the room arrangement, a character in a book might be confronted with making a choice, a politician might be putting forth a new way of structuring taxes, and so on.

Launch: What are some tips for starting and using this routine?
The routine needs to be modeled with the whole group initially with responses recorded for the entire class to see. This enables students to build on each other's ideas. You might record responses using the directions of a compass to provide a visual anchor. That is, draw a compass in the center of the board and then record responses corresponding the appropriate direction: E, W, N, or S. It is generally easiest for students to begin with what is exciting or positive about the idea or proposition and then move to worrisome and need to know. Students might be asked to write down their individual stance or suggestion for moving forward after the initial group discussion. You can also ask students to make an initial judgment or evaluation of the idea or proposition before doing the compass points and then ask them how their thinking has changed after discussion using the compass points routine.

Now let's try to brainstorm with AI

ChatGPT

am a college student taking a first-year composition class. In the first assignment of the semester, I am required to propose a research topic that meets the following requirements, (1) I am very interested in the topic, (2) the topic is a controversial issue and (3) I have personal experiences with the topic.

I love to read books about time management, how to be more productive. Meanwhile, I am also interested in how to balance life and work, between my career and my relationship with loved ones. I'd also love to know more about skills and strategies to manage stress and learn skills of mindfulness. I love kids and dogs. As a mom of two kids, I also want to learn more about appropriate learning styles.

The above are some of my interests. Please generate a list of research topics that may relate to my interests using English.

教學設計與學生作業：融合GAI於不同寫作歷程

Idea Generation (Human vs. GAI)



Human-generated (mindmap)

以mindmap 針對作業要求發想可能主題



反思 Human-generated ideas

反思 human-generated idea歷程/優缺點



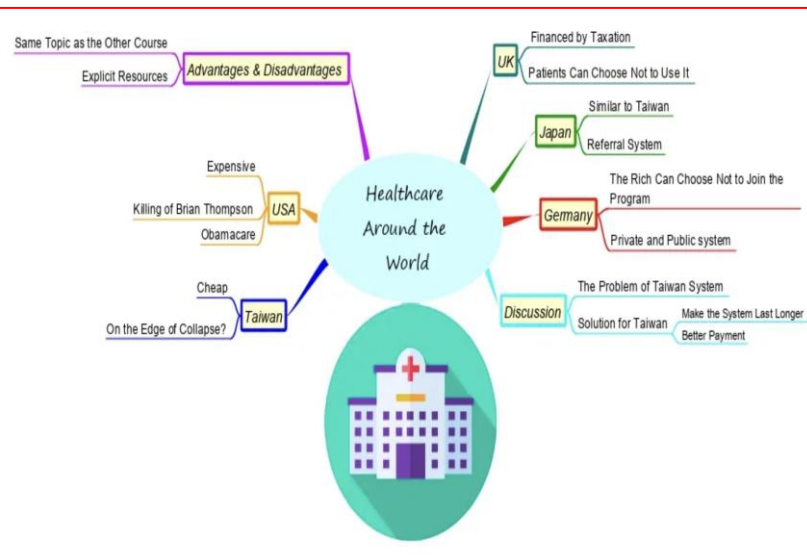
GAI-generated (prompting)

學生應用prompt instruction所學，以GAI輔助主題發想



比較 human vs. GAI idea generation

反思比較 human和GAI 想法的差別/優劣



[Your reflections on the process of human-generated ideas]

Ss# + Name	請列點描述你的 human-generated 歷程 (大致的步驟和重點即)	你自己覺得Human-generated ideas的優點/缺點(盲點) 各是什麼? (請分別以列點方式羅列優點/缺點)	你打算怎麼使用GenAI tools 輔助你構思主題提案?
	<ol style="list-style-type: none"> 從個人經歷延伸查詢相關新聞 複習會看過相關法律影片 朋友曾經參加拍攝社會運動 使用google scholar查詢是否有足夠的文獻支撐論點 	<ul style="list-style-type: none"> 優點: 以個人經歷舉證較有說服力, 生活中接受到的資訊可能比AI資料庫多也更近期 缺點: 可能列出的主題延伸面向不夠全面和完整, 論點可能不夠有爭議 	<ul style="list-style-type: none"> 請chatGPT幫我延伸主題相關舉例子題 請chatGPT幫我依序排列論點的重要性 請chatGPT幫我找出例子最少的論點, 方便我做取捨
	<ol style="list-style-type: none"> 理想世界上有什麼比較常被討論, 而且我個人立場堅定的議題 設想此議題的impact是否有意義, 有沒有討論的necessity 及interesting 往下思考這個議題的argument 數量是否足夠組成80%的文章 	<ul style="list-style-type: none"> Pro: 一但想出主題可以快速構成文章 Con: 討論主題的時可能有很多不知道如何表達的地方, 文章的構成不明朗, 常常讓我一邊想一邊寫, 導致outcome會有抓不到重點又或是表達意義不明的問題 	<ul style="list-style-type: none"> 用chat來幫我列點整理資訊及歸因, 並給我初步的文章構型
	<ol style="list-style-type: none"> 與科系相關的議題有哪些 Gerontology and long-term care 實習中遇到的議題 foreign caregiver more over 50% 關鍵字搜尋相關文獻 	<ul style="list-style-type: none"> 優點: 實習中充分與外籍移工相處、與科系相關可以延伸專業領域 缺點: 議題有地域限制英文文獻不好找、可以寫的議題太廣泛需聚焦 	<p>請AI評估議題的聚焦程度, 依據可行性修正主題, 裡用AI統整自己的想法。</p>
	<ol style="list-style-type: none"> Controversial 置於中點 從閱讀過的書、興趣、本 	<ul style="list-style-type: none"> 優點: 聚焦在有controversial的議題, 對於毫無想法的起點能逐漸成形 	<p>使用chatGPT, 增加主題聚焦度, 過於廣泛的議題找到著力</p>

Your reflections on the process of AI-generated ideas (下課前/ 下次上課前完成, 隨時可以修改)

Ss ID#+Name	Prompts you used for idea generation (請以列點方式羅列, 只需紀錄你覺得有幫助的prompts)	1. Results/ Outcomes (AI產出的結果, 可直接複製貼上) 2. Reflections (issues, comments, feedback) (both Chinese and English) (自己對於AI結果的反思想法回饋) 3. Your finalized proposal topic (自己最後定案的主題) (in class and take-home assignment) (以上內容請以列點方式描述)
b323113038甘偵佑	<p>"Here are some topics I'm considering: [same-sex marriage in Taiwan, Studies on the educational attainment or social achievements of children raised in same-sex families]. Which ones seem the most controversial and researchable? Can you suggest ways to make them more specific?"</p>	<ol style="list-style-type: none"> For same-sex marriage in Taiwan: You could make it more specific by focusing on: <ul style="list-style-type: none"> The social or legal challenges same-sex couples still face despite legalization. Public attitudes towards same-sex marriage post-legalization. The impact of Taiwan's policy on LGBTQ+ rights in Asia. For Studies on the educational attainment or social achievements of children raised in same-sex families: <ul style="list-style-type: none"> You can revise your topic to: "The long-term social mobility of individuals raised by same-sex couples." I think the revision is more precise than my former topic. And it pointed out that I can narrow my second choice by considering: "A comparative analysis of children raised in same-sex vs. opposite-sex households in Taiwan.". However, I think there are less references for me to cite in my essay. Thus, I won't choose this topic. The long-term social mobility of individuals raised by same-sex couples.

教學設計與學生作業：融合GAI於不同寫作歷程



- 請寫下你所使用的5個prompts
- 嘗試使用不同的GAI工具
- 請反思自己融合GAI版本與自己文章過程的心得/困難/挑戰/考量
- 請繳交5個GAI使用截圖作為歷程記錄

Rewriting the introduction with GAI tools

Turned in

100% Normal text Arial 11 B I U A

- 請寫下你下的5個prompts
 - 提升文章吸引力
 - 改善組織結構
 - 增強連貫性與流暢度
 - 改善語法並修正用詞
 - 提升文章的精練度和深度
- 嘗試使用至少2個不同的GenAI tools (e.g. Gemini, ChatGPT, Perplexity..., 融合GAI版本與自己的版本, 貼上自己最滿意的版本)
- 以中文寫下自己的reflection (自由書寫GAI整合過程中心得、困難/挑戰、考量等等)

在使用AI的過程中, 我最主要的挑戰就是沒有給AI明確的指令, 我自以為自己已經說明得夠清楚, 但AI給我的回覆卻不完全符合我的需求, 總有一兩個地方漏掉, 需要再下一次指令。此外, 不同的AI工具也不能用相同的指令, 我需要不斷嘗試出適合不同AI工具的指令, 好讓他產出我所需要的內容。

另外一個比較困難的地方是融合AI的文章和我的文章, 不同AI修改過的內容都有我喜歡的部分, 如何取捨、採用那些部分讓我很猶豫, 最後我決定用比較常見且我比較容易學的句子, 希望我下次寫作時能派上用場。
- 於Google Classroom課版繳交至少5個GAI使用截圖

Ss ID # + Name	Human-generated Introduction (自己撰寫的Introduction版本)	GenAI修改版本 (請依上述說明, 完成第1+2+3才算是完整完成)
	According to statistics, there are more than 80% people in the world using AI. Most people use AI to search for information, solve problems, and require knowledge, especially students. As a college student, I also rely on AI tools in the academic field, it helps me to learn more efficiently, so I disagree with banning AI tools in academic campuses.	Statistics show that over 80% of people globally use AI. Many individuals utilize AI for information searches, problem-solving, and acquiring knowledge, with students being a significant group among them. As a college student, I also depend on AI tools for academic purposes, as they enhance my learning efficiency. AI helps me find relevant information quickly, solve complex problems more easily, and deepen my understanding of various subjects. Therefore, I oppose the prohibition of AI tools on academic campuses, as these tools provide students with valuable resources that

研究設計

研究對象

英文寫作
人數: 20
大學部
通識選修課

研究設計: Single group, pre- and post-test design

課前

- ◆ Diagnostic Test (寫作前測)
- ◆ 課前問卷 (AI-literacy)

教學介入

- ◆ 8 週以AI literacy framework 為主軸之教學設計，引導學生在不同寫作階段融合GAI於多元寫作任務，完成議論文寫作
- ◆ GAI寫作任務反思與歷程記錄

課後

- ◆ Post-test (寫作後測)
- ◆ 課後問卷
- ◆ 學生訪談

評量方法: mixed-method approach

量化分析

◆ 寫作前後測

質性分析

◆ 課前課後問卷 (AI literacy)

◆ 不同寫作階段反思

◆ 學生的prompts

◆ 比較human vs. GAI-generated 文章版本

◆ 學生訪談

結果與討論: GAI於Idea Generation的使用

使用習慣與反思

- ◆ 學生使用GAI進行主題發想，會以個人經驗/興趣為主，GAI工具為輔→ 源自結構化教學設計
- ◆ 學生使用GAI目的：輔助延伸子題、聚焦、舉例、比較、組織思考

考量與注意事項

- ◆ Prompting技巧不足，學生具體使用GAI輔助構思的策略與想像有落差
- ◆ GAI提供了大篇幅，但制式且空泛的建議
- ◆ 多個學生提及請GAI查找更多文獻

結果與討論: GAI於Drafting的使用

使用習慣與反思

- ◆ 學生多數對GAI修改結果持正面評價，然有些評價空泛且無具體證據支持
- ◆ 學生藉由教學活動，能夠反思prompting策略，體會精確、多面向、反覆修改指令的重要性
- ◆ 學生藉由比較human與AI寫作，提升對作者意識的覺察

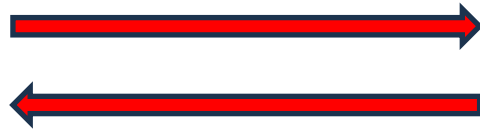
考量與注意事項

- ◆ GAI修改結果多為詞彙的替換，提升文章結構與連貫性，然僅有表面字詞修改無法提升文章深度，過於精簡亦讓語意不清。
- ◆ 多數學生照單全收修改建議，雖然他們能反思GAI修改建議跟覺察GAI建議的問題，但學生在最後版本沒有實質修改

結果與討論: Human vs. GAI 語言使用

Human-generated

Do you often use AI to **make reports or homeworks**? AI is a **good** tool for us to solve any problem quickly and efficiently. AI can improve productivity. When **we get trouble** or we have no ideas in the report, **we can use AI that gives us creatives and many ideas**. If we **ban AI**, we will fall behind in global competition. So, I think AI should not be banned in college.



學術英文寫作風格的調整：字彙、句型

文章連貫性提升

僅有表面字詞的替換，沒有內容的新增或刪減

GAI過度公式化和可預期性的語言使用→
Students' prompting techniques?

GAI-generated

Do you often use AI to assist with reports or homework? AI is a powerful tool that helps us solve problems quickly and efficiently while boosting productivity. When we **encounter difficulties or struggle with ideas** for a report, AI can provide creative insights and generate numerous ideas. **Banning AI would put us** at a disadvantage in the global competition. Therefore, I believe that AI should not be banned in colleges.

結果與討論: Student Prompts Analysis

Vague and Ineffective

這是我根據題目所撰寫的第一段 (introductory paragraph) :

Within the technology developing, GenAI already has become a wonderful assistant to college students. GenAI not only can help them solve academic problems, but also finish their assignment. However, the convenience from GenAI also rose up to some issues like cheating or plagiarizing. I think that the GenAI should be banned in the college, because it easily takes away the chances that students can think independently. Using GenAI excessively may lead to student's dependency on AI.

請根據以下五個提示，幫我修改我所撰寫的第一段

提示一：
第一段的脈絡按照此要求-
attention-getter (一個與主題相關吸引人的內容)
thesis statement (主旨句，你個人在這個主題上的立場，以及理由簡述)
transitions (黏膠: 能流暢連結attention-getter與thesis statement的句子)

提示二：
修改文章中的文法與用詞錯誤

提示三：
使內容的架構、組織或連結更流暢

提示四：
適當加入可以更吸睛、引人入勝的內容

提示五：
將你所幫我加入的字句特別標示
(請用繁體中文對我進行回覆)

14:12 4月2日 週三

ChatGPT

Nowadays generative AI tools are in the public eye. They can help us complete tasks more easily, meanwhile they suffered from many debates. Students will overuse AI tools, cause conflicts of ethics and laws, but if we use them correctly, GenAI will be very useful, so I disagree that the use of GenAI should be banned in academic settings.

請幫我改良以上文章，依照下列要求去做修改：

1. 檢查文法與用字遣詞有無不妥
2. 文章目的是否表達清楚
3. 架構是否完整
4. 有些字詞可改成簡單但精準的詞彙
5. 整篇文章需限制在 50 ~ 80 字以內

ChatGPT

記憶已滿

我想問5個問題: 1.我可以如何替換「使用」的同義詞?
2.如何讓第一段看起來更簡潔明瞭，讓讀者能明白我想傳遞的訊息，願意接著往下看我之後的文章?
3.如何豐富我文章開頭的字彙豐富度?
4.開頭第一句的引言能不能幫我替換成更有深度的內容或議題?
5.如何讓我的文章看起來更成熟、更專業一點?

結果與討論: Student Prompts Analysis

ChatGPT >

請列出至少 5 個 prompts 並直接修改以下內容, 目的為使以下內容在 content, organization, coherence, and words/grammar 更好

Many students use GenAI to help with homework. Some people think it's cheating, but others think it helps learning. Because of this, we need to think carefully. I believe GenAI should not be banned, because it can support students to learn better if used correctly.

以下是五個可用來改寫原始段落的 prompts, 目的是提升其內容深度、組織性、連貫性及語言表達:

1. "Rewrite the paragraph to include specific examples of how GenAI can support learning, while improving coherence and grammar."
2. "Make the paragraph more formal and academically appropriate for a persuasive essay."
3. "Enhance the logical flow of the argument and improve the word choice to sound more convincing."
4. "Add a counterargument and a rebuttal to strengthen the position in favor of using GenAI."
5. "Expand the paragraph to include more detailed reasoning and ensure

ChatGPT >

開頭還有什麼寫法都列給我

當然可以! 以下是多種英文作文中常見又有吸引力的開頭寫法, 適用於討論科技、教育、AI 等話題。你可以根據想要的語氣(正式、創意、反思等)挑選使用。

一、引人思考式(提出問題)

1. **What if your next tutor wasn't human, but a machine?**
2. **Can technology truly replace the role of a teacher in the classroom?**
3. **Should we fear the rise of artificial intelligence—or learn to work with it?**

二、強烈立場式(直接表態)

1. **Banning AI in education is not the solution—it's a step backward.**
2. **The rise of AI is inevitable, and education must evolve with it.**
3. **Fighting against AI in learning is like fighting against calculators in math.**

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• 替換單字或片語:

- 將 "brings out a lot of advantages" 替換為 "is reshaping our world" 或 "continues its rapid evolution"。
- 將 "Keep up with the trends maybe AI will be a tutor in campus" 更流暢地表達為 "the prospect of AI tutors on campus is no longer a futuristic fantasy but a looming reality" 或 "embracing AI as a learning companion"。
- 將 "conventions and professions of the tools can easily solve the problems" 更抽象地替換為 "embracing AI as a learning companion" 或 "integrating AI thoughtfully"。
- 將 "have abilities to not rely on it and ask questions accurately" 更精煉地表達為

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結論與教學建議

- ① 本計畫透過結構化教學設計，引導學生將GAI視為寫作歷程中的“協作”和“輔助”者，透過反思與分析比較human vs. GAI-generated 文本，幫助學生發展GAI融入寫作的AI literacy (e.g. 作者意識、prompting techniques、批判思考GAI內容)
- ② 學生在drafting過程中因為prompting能力/策略不足，導致GAI回覆多侷限於表面字詞句的修改，雖然他們能覺察GAI回覆的限制，但多數學生仍選擇直接採用GAI修改建議，未針對文章內容深度修改，使GAI對提升寫作品質和內涵沒有太大幫助。

未來發展GAI輔助寫作教學設計重點

◆ Understand its limitations

e.g. 讓學生以同一個寫作任務使用GAI，以實作體會GAI在寫作上的限制 – 缺乏創意的內容、偏好某些字彙和句型。

◆ Give the right prompts

e.g. 帶學生嘗試使用不同prompting技巧與策略

◆ Edit and incorporate AI-generated text effectively

e.g. renovate the revision instruction

◆ 提升學生對寫作高層次概念的認識與寫作學習動機