

# Artificial Intelligence: Prompt Engineering

## Better Input, Better Output (BI-BO)

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## Introduction

This document has been generated to help staff better understand how AI generative tools, such as ChatGPT and Google Bard operate. The primary focus is on Prompt Engineering and how generative AI tools respond to different prompts, and how asking better prompts can lead to better, more focused outputs. This document covers a range of learning and teaching scenarios that should help staff visualise how AI tools can be used to support learning and teaching, and also which style of prompts to use. It also shares examples of good prompt frameworks to follow and how AI can help solve and develop coding solutions.

This is a lengthy document linked to example prompts on ChatGPT4. We encourage you to locate sections that are relevant to you and explore from there.

Further AI guidance and forthcoming sessions, can be located on the [AI SharePoint site](#).

## What is prompt engineering?

Here is a definition of prompt engineering and its importance as generated by ChatGPT 4:

*Prompt engineering is a crucial aspect of working with language models like GPT-3 or GPT-4, wherein the user carefully designs and structures the input or "prompt" to effectively guide the model's response. This process can involve specifying the format of the desired answer, seeding the prompt with relevant information, or asking the model to think step by step or debate pros and cons before settling on an answer. The importance of prompt engineering lies in its ability to significantly influence the output quality of the AI model. It allows users to tailor the model's responses to specific use cases, enhancing the reliability, usefulness, and safety of the AI system. Properly engineered prompts can help mitigate the model's biases, prevent it from generating harmful or misleading information, and improve its comprehension and generation of nuanced, context-specific content.*

Although '[properly]' engineered prompts' might mitigate potential bias, it is important to understand that the knowledge that tools such as ChatGPT draw on will contain bias. Knowledge is not inherently neutral and hegemonic power directly influences the construction and portrayal of knowledge (Freire, 2000; hooks, 2003; Benjamin, 2019 and 2020). What this means is that anyone using tools such as ChatGPT should approach these in the same way as they would when undertaking research. They should take a critical eye to information being produced to the point of questioning the validity, veracity and origins.

## Prompt Frameworks

When we discuss prompt inputs, we are look at key suggestions that signals to the AI tool what we want as an output. This follows the Better Input, Better Output philosophy. Below, we share some of the basic prompt frameworks you should keep in mind when crafting inputs.

**Prompt:** "Imagine you're writing for a tech blog that has a casual, conversational tone. The readers are mostly tech enthusiasts without an advanced technical background. Could you explain the concept of quantum computing and its potential implications in everyday life, making sure to use simple, relatable analogies?"

This prompt is broken down into the following:

1. The **audience** is defined ("tech enthusiasts without an advanced technical background").
2. The **tone** is specified ("casual, conversational").
3. The **style** is outlined ("use simple, relatable analogies").

4. The **topic** is clearly stated (“explain the concept of quantum computing and its potential implications in everyday life”).

The aim of this prompt is to generate content that is comprehensible and engaging for a specific audience, maintaining a certain tone and style while discussing a technical topic.

#### RTF (Role, Task, Format)

- **Role:** The role defines who the speaker/writer is supposed to be. This can greatly affect the tone, style, and formality of the output.
- **Task:** The task specifies what the speaker/writer is supposed to do, such as explain a concept, write a poem, or provide a summary.
- **Format:** The format refers to how the response should be structured. This could be a bullet-point list, table, game, recipe, etc. Format can also contain instructions about the length of the reply.

#### Example:

- **Role:** philosophy professor
- **Task:** summarise Kant’s “Categorical Imperative” for a first-year class
- **Format:** In bullet points

The prompt then would be: “I am a philosophy professor, summarise in bullet points Kant’s “Categorical Imperative” for a first year class.”

#### Tone

Implied within the above example, is a tone, that of a professor. If the above was re-written in a humorous tone, the output may be different.

Output on ChatGPT: <https://chat.openai.com/share/7630a084-60de-4616-8066-cf30c149345e>

#### CTF (Context, Task, Format)

- **Context:** a study group
- **Task:** Prepare a presentation
- **Format:** Table

Output on ChatGPT: <https://chat.openai.com/share/59def55f-5a26-42d3-9e4d-2910f56a4245>

#### Prompting Style

A prompt can contain all the directions need to produce an output,

Output on ChatGPT: <https://chat.openai.com/share/170ebd8a-89b3-40fa-81ae-2e7edee1fd94>

or the prompting can be carried out step by step: long example

Output on ChatGPT: <https://chat.openai.com/share/194751eb-7801-4cce-a29f-e2394c568ac1>

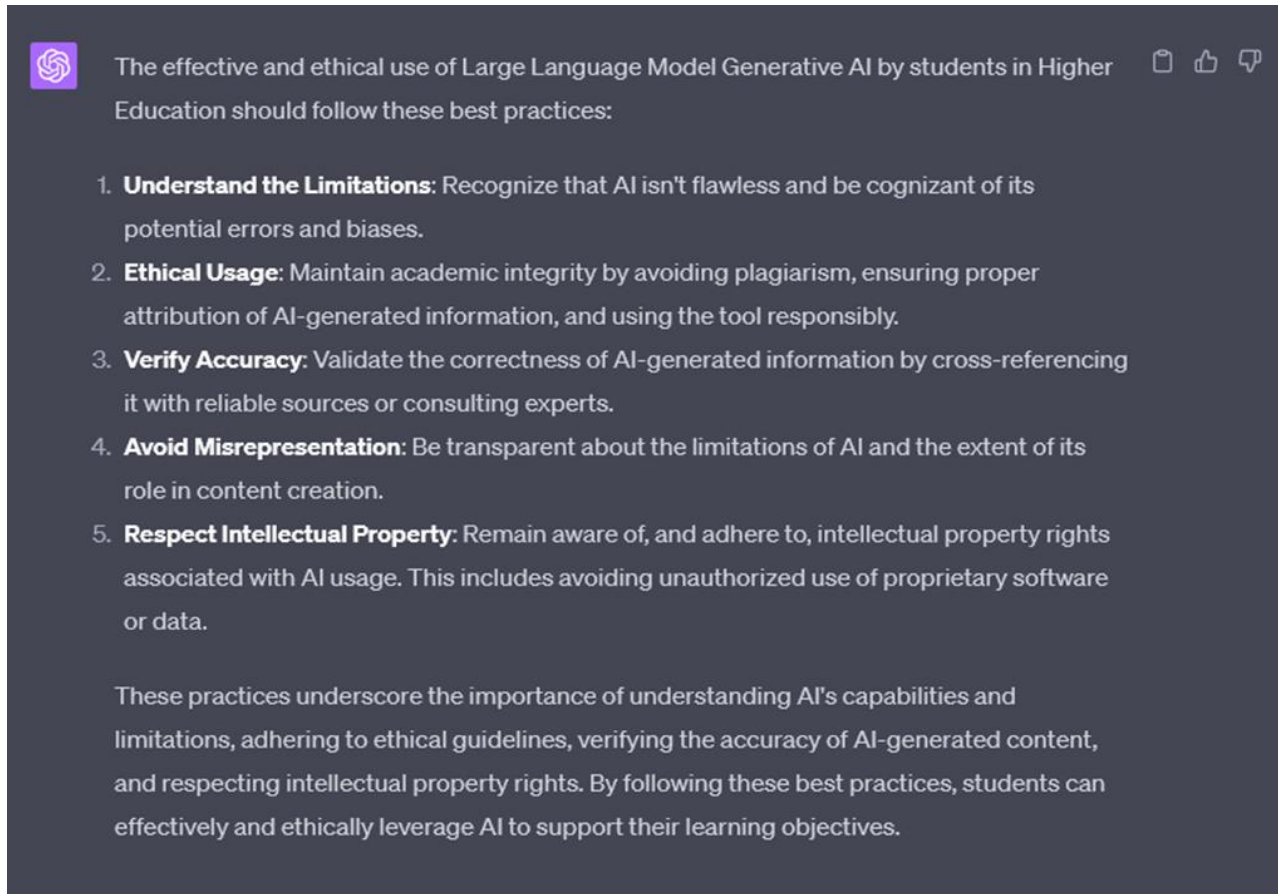
## Examples of prompt writing

### 1. Brainstorm Ideas

#### User Prompt:

*In 250 words, what are the best practices of guidelines for students in Higher Education on effective and ethical use of Large Language Model Generative AI.*

#### GPT-4 Output:



The screenshot shows a chat interface with a dark background. On the left is the OpenAI logo. The main text area contains the following content:

The effective and ethical use of Large Language Model Generative AI by students in Higher Education should follow these best practices:

1. **Understand the Limitations:** Recognize that AI isn't flawless and be cognizant of its potential errors and biases.
2. **Ethical Usage:** Maintain academic integrity by avoiding plagiarism, ensuring proper attribution of AI-generated information, and using the tool responsibly.
3. **Verify Accuracy:** Validate the correctness of AI-generated information by cross-referencing it with reliable sources or consulting experts.
4. **Avoid Misrepresentation:** Be transparent about the limitations of AI and the extent of its role in content creation.
5. **Respect Intellectual Property:** Remain aware of, and adhere to, intellectual property rights associated with AI usage. This includes avoiding unauthorized use of proprietary software or data.

These practices underscore the importance of understanding AI's capabilities and limitations, adhering to ethical guidelines, verifying the accuracy of AI-generated content, and respecting intellectual property rights. By following these best practices, students can effectively and ethically leverage AI to support their learning objectives.

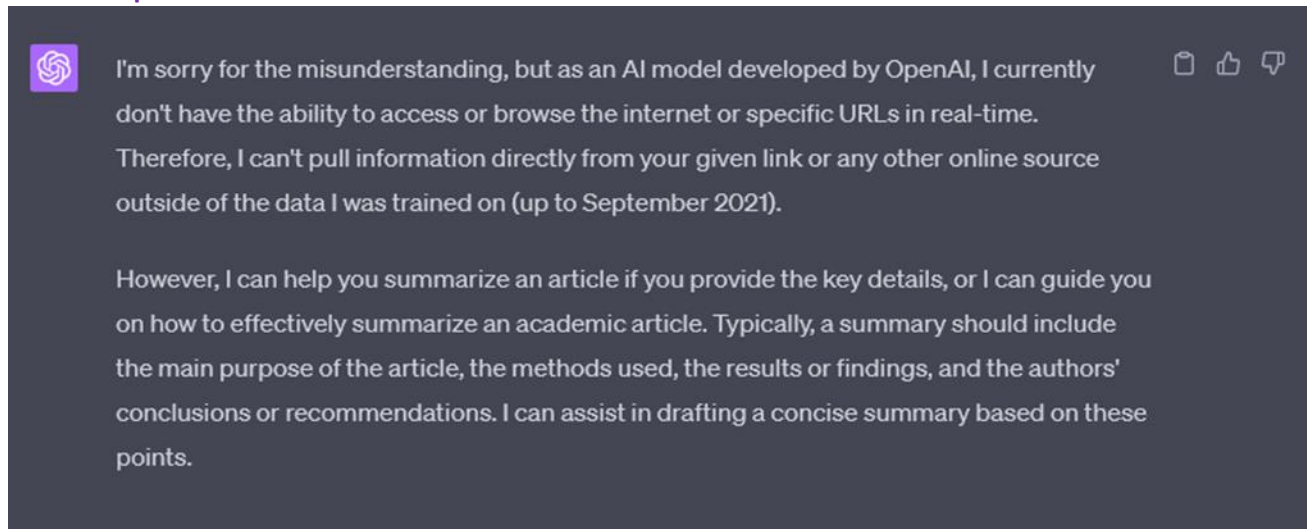
## 2. Summarising Text

### User Prompt:

*Extract the key findings and summarise in 200 words from the following article:*

<https://www.tandfonline.com/doi/full/10.1080/1360144X.2019.1631170>

### GPT-4 Output:

A screenshot of a ChatGPT interface. On the left is the OpenAI logo. The main text area contains a response from the AI model. In the top right corner, there are icons for copy, like, and reply.

I'm sorry for the misunderstanding, but as an AI model developed by OpenAI, I currently don't have the ability to access or browse the internet or specific URLs in real-time. Therefore, I can't pull information directly from your given link or any other online source outside of the data I was trained on (up to September 2021).

However, I can help you summarize an article if you provide the key details, or I can guide you on how to effectively summarize an academic article. Typically, a summary should include the main purpose of the article, the methods used, the results or findings, and the authors' conclusions or recommendations. I can assist in drafting a concise summary based on these points.

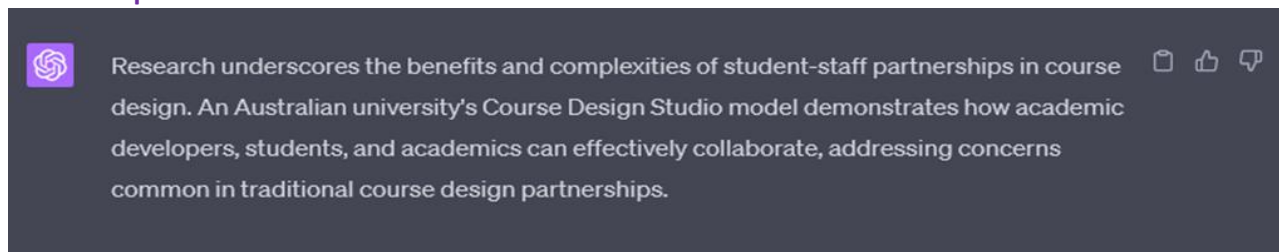
**Note:** It's not possible to extract a summary of YouTube videos within ChatGPT, but there are services that do including: <https://glasp.co/youtube-summary> and <https://www.summarize.tech/>

### User Prompt:

*Extract the key findings and summarise in 50 words from the following.*

*Sector-wide research has shown the benefits of student-staff partnerships in course design whilst highlighting the complexity of this work, and the difficulties in gaining traction to create sustained ways of working. Reflections by academic developers on the roles and partnerships in course design at one Australian university reveal the critical three-way partnership among academic developers, students, and academics. The benefits brought by a Course Design Studio model in providing a liminal space to sustain positive three-way collaborations are outlined. This paper offers a conceptual argument that addresses areas of concern often encountered in traditional course design student-staff partnership relationships.*

### GPT-4 Output:

A screenshot of a ChatGPT interface. On the left is the OpenAI logo. The main text area contains a response from the AI model. In the top right corner, there are icons for copy, like, and reply.

Research underscores the benefits and complexities of student-staff partnerships in course design. An Australian university's Course Design Studio model demonstrates how academic developers, students, and academics can effectively collaborate, addressing concerns common in traditional course design partnerships.

### 3. Sifting an Interview Transcript

#### User Prompt:

*Generate a mock interview session between a panel of 3 interviewers and interviewee concerning a senior academic role that specialises in Quantum Physics? The interviewer's name is Mark Hamill, Harrison Ford, and Carrie Fisher. The interviewee's name is John Appleseed.*

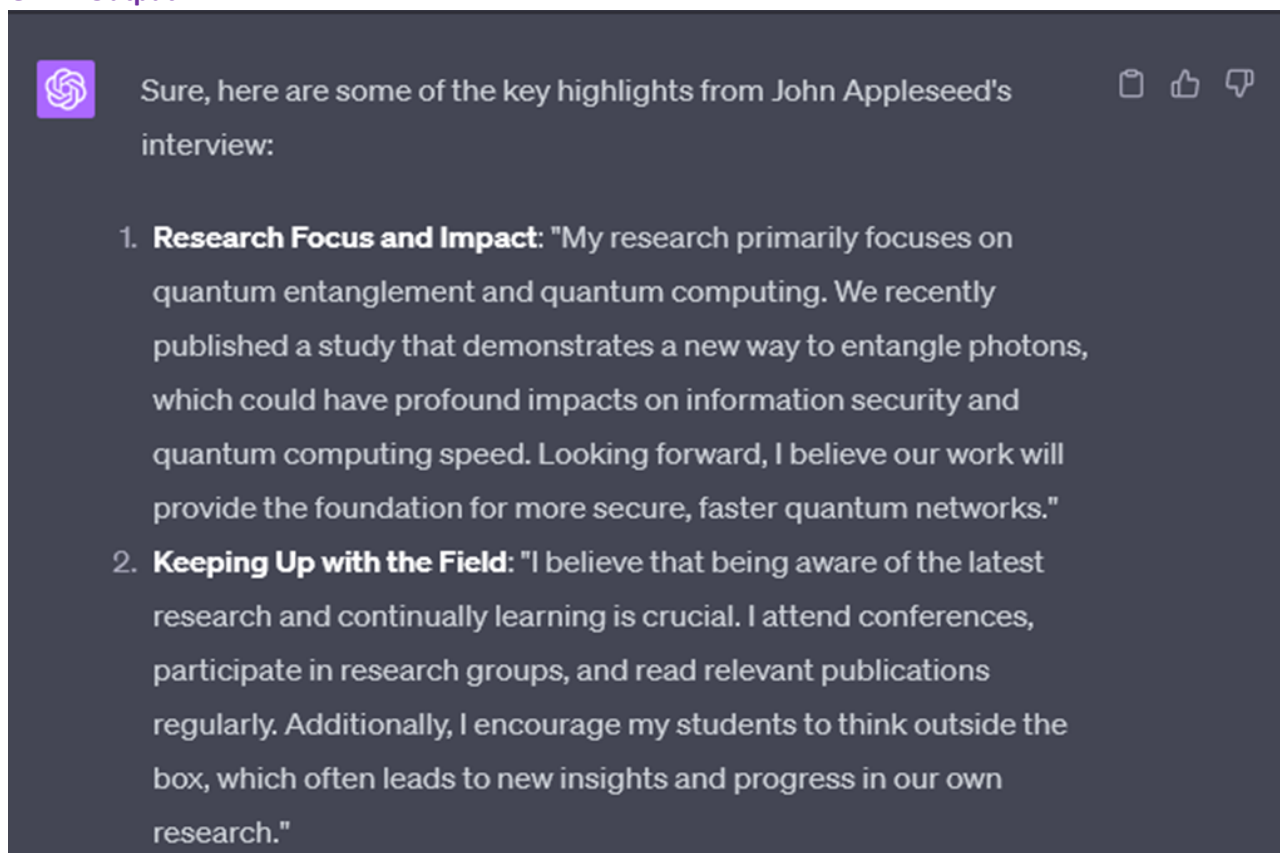
#### GPT-4 Output:

<https://chat.openai.com/share/6d24f9ff-7043-4b5e-82f4-26893048c17f>

#### User Prompt:

*Identify the key highlights from John Appleseed's interview using exemplifying quotes.*

#### GPT-4 Output:



The screenshot shows a chat interface with a dark background. On the left is the OpenAI logo. The text of the response is as follows:

Sure, here are some of the key highlights from John Appleseed's interview:

- Research Focus and Impact:** "My research primarily focuses on quantum entanglement and quantum computing. We recently published a study that demonstrates a new way to entangle photons, which could have profound impacts on information security and quantum computing speed. Looking forward, I believe our work will provide the foundation for more secure, faster quantum networks."
- Keeping Up with the Field:** "I believe that being aware of the latest research and continually learning is crucial. I attend conferences, participate in research groups, and read relevant publications regularly. Additionally, I encourage my students to think outside the box, which often leads to new insights and progress in our own research."

## 4. Summarising Data from Text Fields in a Spreadsheet

### User Prompt:

*Generate a table to compare the top 5 popular Linux distros and analyse the pros and cons in separate columns. Add a rating column based on the global usage.*

### GPT-4 Output:

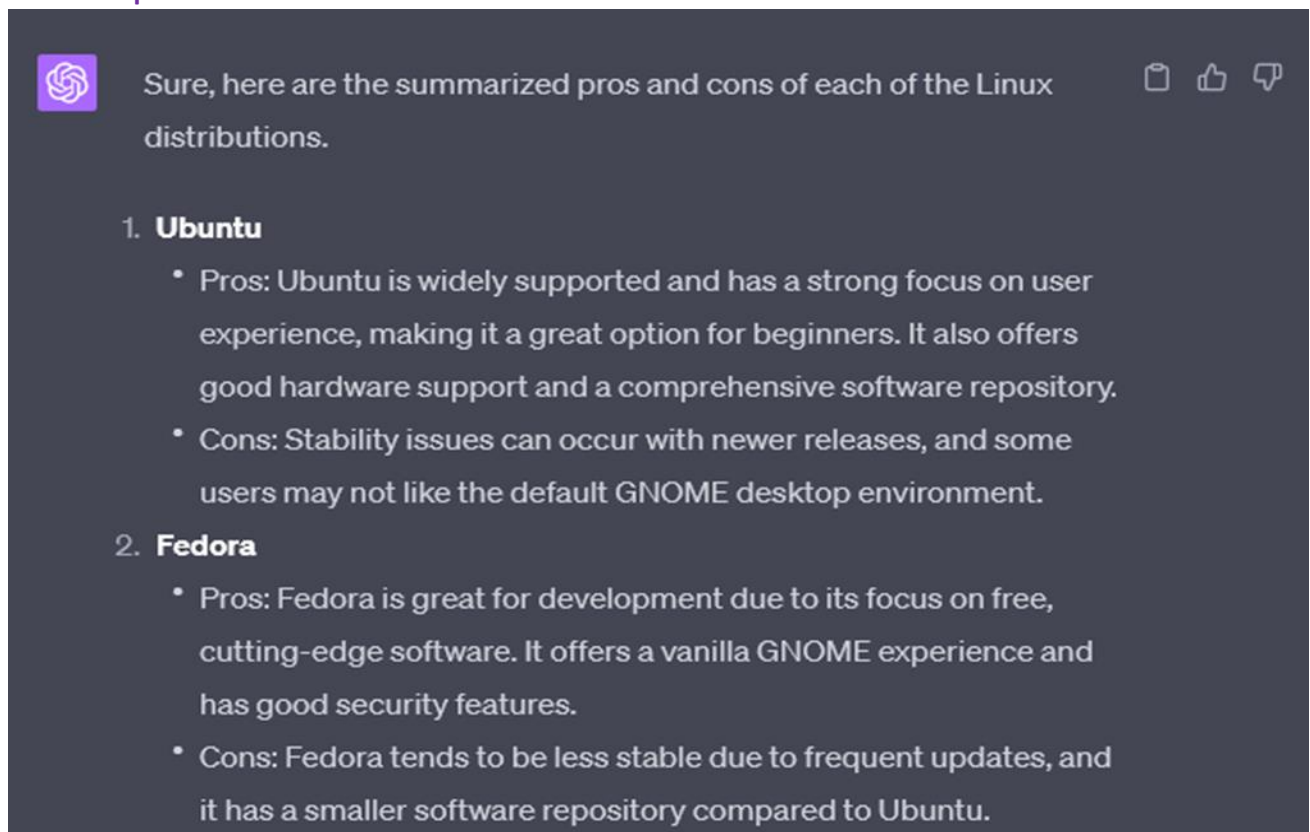
<https://chat.openai.com/share/31251017-1589-471a-a74d-0210632033e0>

**Note:** The generated data is for illustration purposes only. You can manually copy data from text fields from a spreadsheet directly into ChatGPT, where you can prompt ChatGPT to generate a summary. However, it is best to use anonymised data, as OpenAI will actively record your prompts and any data you feed it.

### User Prompt:

*Generate a summary from the pros and cons of each.*

### GPT-4 Output:



Sure, here are the summarized pros and cons of each of the Linux distributions.

- Ubuntu**
  - Pros: Ubuntu is widely supported and has a strong focus on user experience, making it a great option for beginners. It also offers good hardware support and a comprehensive software repository.
  - Cons: Stability issues can occur with newer releases, and some users may not like the default GNOME desktop environment.
- Fedora**
  - Pros: Fedora is great for development due to its focus on free, cutting-edge software. It offers a vanilla GNOME experience and has good security features.
  - Cons: Fedora tends to be less stable due to frequent updates, and it has a smaller software repository compared to Ubuntu.

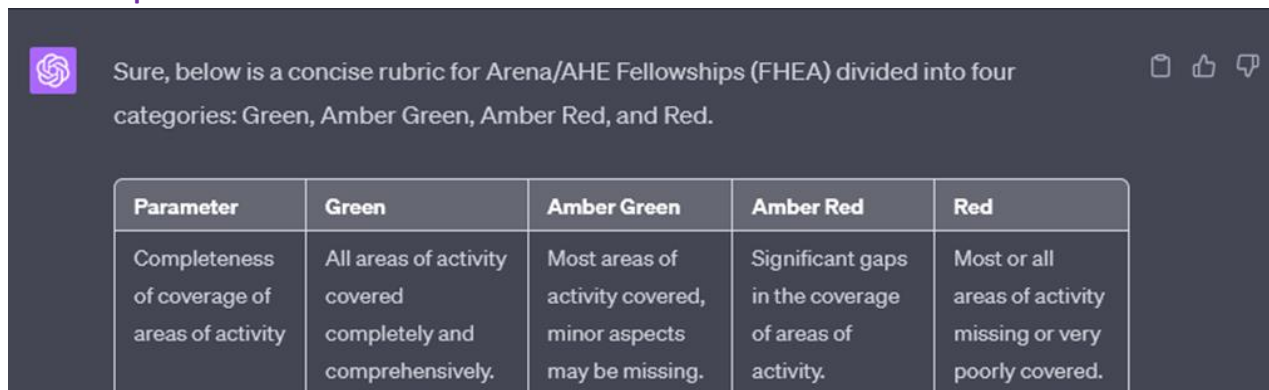


## 5. Create a Marking Rubric

### User Prompt:

*Generate a concise tabulated rubric for Arena/AHE Fellowships (FHEA) divided into four categories: Green, Amber Green, Amber Red, and Red. The rubric should define the following parameters: completeness of coverage of areas of activity, met all aspects of core knowledge, shows commitment across all values, successfully incorporating subject and pedagogic research, engagement in appropriate CPD, written reflectively*

### GPT-4 Output:



Sure, below is a concise rubric for Arena/AHE Fellowships (FHEA) divided into four categories: Green, Amber Green, Amber Red, and Red.

Parameter	Green	Amber Green	Amber Red	Red
Completeness of coverage of areas of activity	All areas of activity covered completely and comprehensively.	Most areas of activity covered, minor aspects may be missing.	Significant gaps in the coverage of areas of activity.	Most or all areas of activity missing or very poorly covered.

<https://chat.openai.com/share/ca4755ce-059b-491c-96e0-b07bcd29c06d>

**Note:** The generated data is very detailed, but it's possible to prompt ChatGPT for a shorter version using the same conversation.

Parameter	Green	Amber Green	Amber Red	Red
Activity	All areas covered	Most areas covered	Significant gaps in coverage	Poor coverage
Knowledge	Excellent understanding	Good understanding	Partial understanding	Poor understanding
Values	Full commitment	Most values committed to	Some commitment	Little to no commitment
Research	Fully incorporated	Mostly incorporated	Partially incorporated	Poorly incorporated
CPD	Regular engagement	Some engagement	Infrequent engagement	Rarely or never engaged
Reflection	Deep, critical	Mostly reflective	Partial reflection	Minimal or no reflection

## 6. Boilerplate Feedback for Quick Marking

### User Prompt:

*Write some boilerplate feedback for each of the four outcomes drawing on the language of the rubric.*

### GPT-4 Output:

#### **Green:**

Great job! Your application showed a comprehensive understanding of all activity areas, indicating an excellent grasp of core knowledge. Your commitment to all the values was robust, and your incorporation of subject and pedagogic research was outstanding. Your regular and meaningful engagement in Continuing Professional Development (CPD) is commendable. Your reflective writing showed depth and critical thinking. Keep up the excellent work!

#### **Amber Green:**

Good work overall. Your application demonstrated coverage of most activity areas, with a good understanding of the core knowledge. We appreciate your commitment to most of the values. While you incorporated much of the subject and pedagogic research, there are minor gaps that could be addressed. Your engagement in CPD is notable, and your reflection is mostly effective, with some room for deeper critical thinking.

#### **Amber Red:**

Your application showed some strengths, but also areas for improvement. There were significant gaps in the coverage of activity areas and in the understanding of core knowledge. You showed commitment to some values, and your incorporation of subject and pedagogic research was partial. We would encourage more frequent engagement in CPD. In your reflective writing, aim to delve deeper and demonstrate more critical thought.

#### **Red:**

Your application needs substantial improvement. It showed limited coverage of the activity areas and poor understanding of core knowledge. We could not discern a strong commitment to the values, and your incorporation of subject and pedagogic research was minimal. Your engagement in CPD was scarce and needs to be stepped up. In your reflection, strive to demonstrate more depth and critical thinking. Remember, improvement is a process and your continued efforts will surely yield better results.

<https://chat.openai.com/share/ca4755ce-059b-491c-96e0-b07bcd29c06d>

**Note:** The boilerplate feedback is generated from another prompt to ChatGPT using the same conversation.

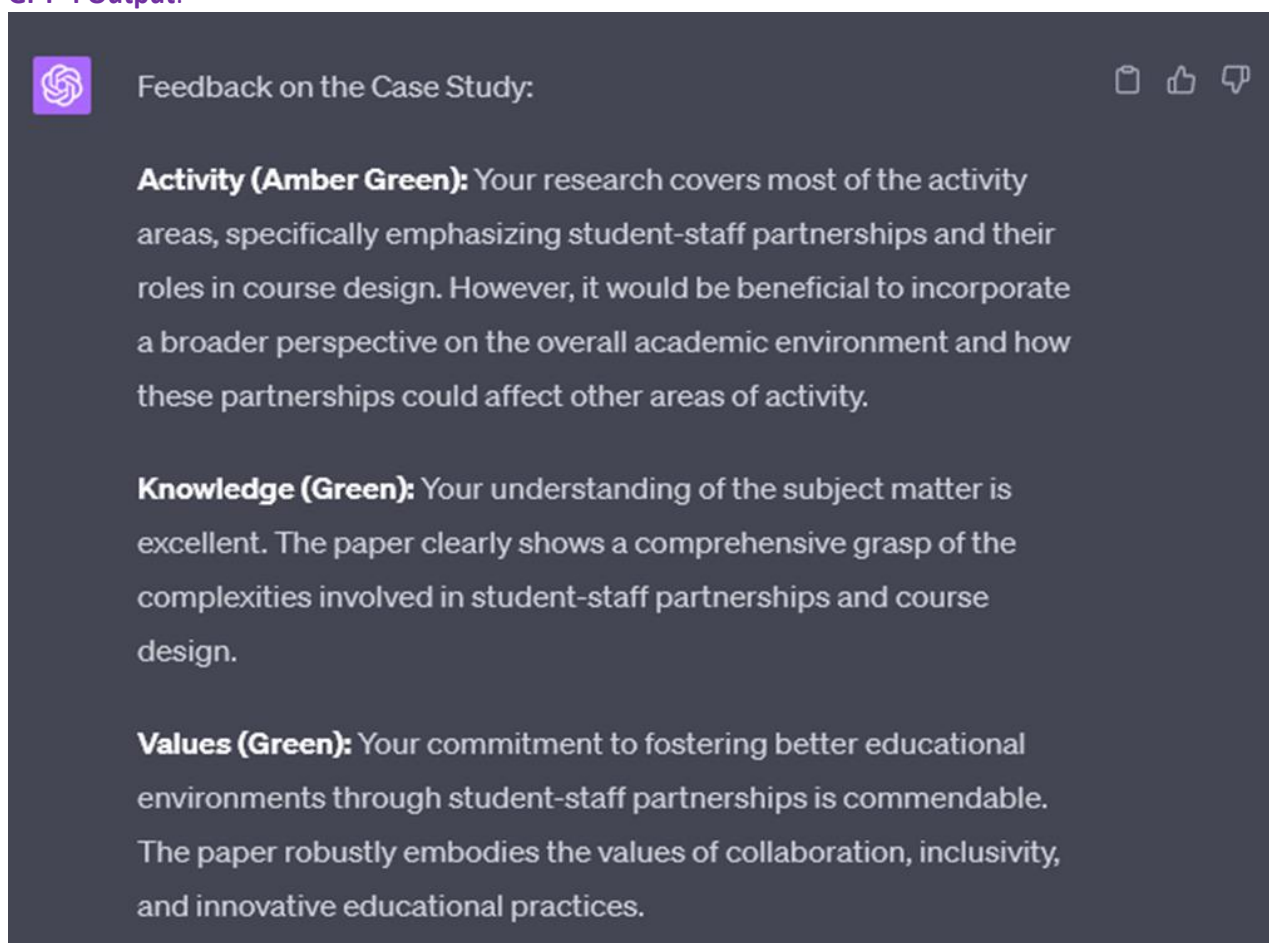
## 7. Marking using the Rubric Feedback

### User Prompt:

*Use the rubric to feedback on the following case study.*

*Sector-wide research has shown the benefits of student-staff partnerships in course design whilst highlighting the complexity of this work, and the difficulties in gaining traction to create sustained ways of working. Reflections by academic developers on the roles and partnerships in course design at one Australian university reveal the critical three-way partnership among academic developers, students, and academics. The benefits brought by a Course Design Studio model in providing a liminal space to sustain positive three-way collaborations are outlined. This paper offers a conceptual argument that addresses areas of concern often encountered in traditional course design student-staff partnership relationships.*

### GPT-4 Output:



**Feedback on the Case Study:**

**Activity (Amber Green):** Your research covers most of the activity areas, specifically emphasizing student-staff partnerships and their roles in course design. However, it would be beneficial to incorporate a broader perspective on the overall academic environment and how these partnerships could affect other areas of activity.

**Knowledge (Green):** Your understanding of the subject matter is excellent. The paper clearly shows a comprehensive grasp of the complexities involved in student-staff partnerships and course design.

**Values (Green):** Your commitment to fostering better educational environments through student-staff partnerships is commendable. The paper robustly embodies the values of collaboration, inclusivity, and innovative educational practices.

<https://chat.openai.com/share/ca4755ce-059b-491c-96e0-b07bcd29c06d>

**Note:** The previously generated rubric feedback is used when additional text is added as part of a new prompt to ChatGPT. This action can only be generated when using the same conversation.

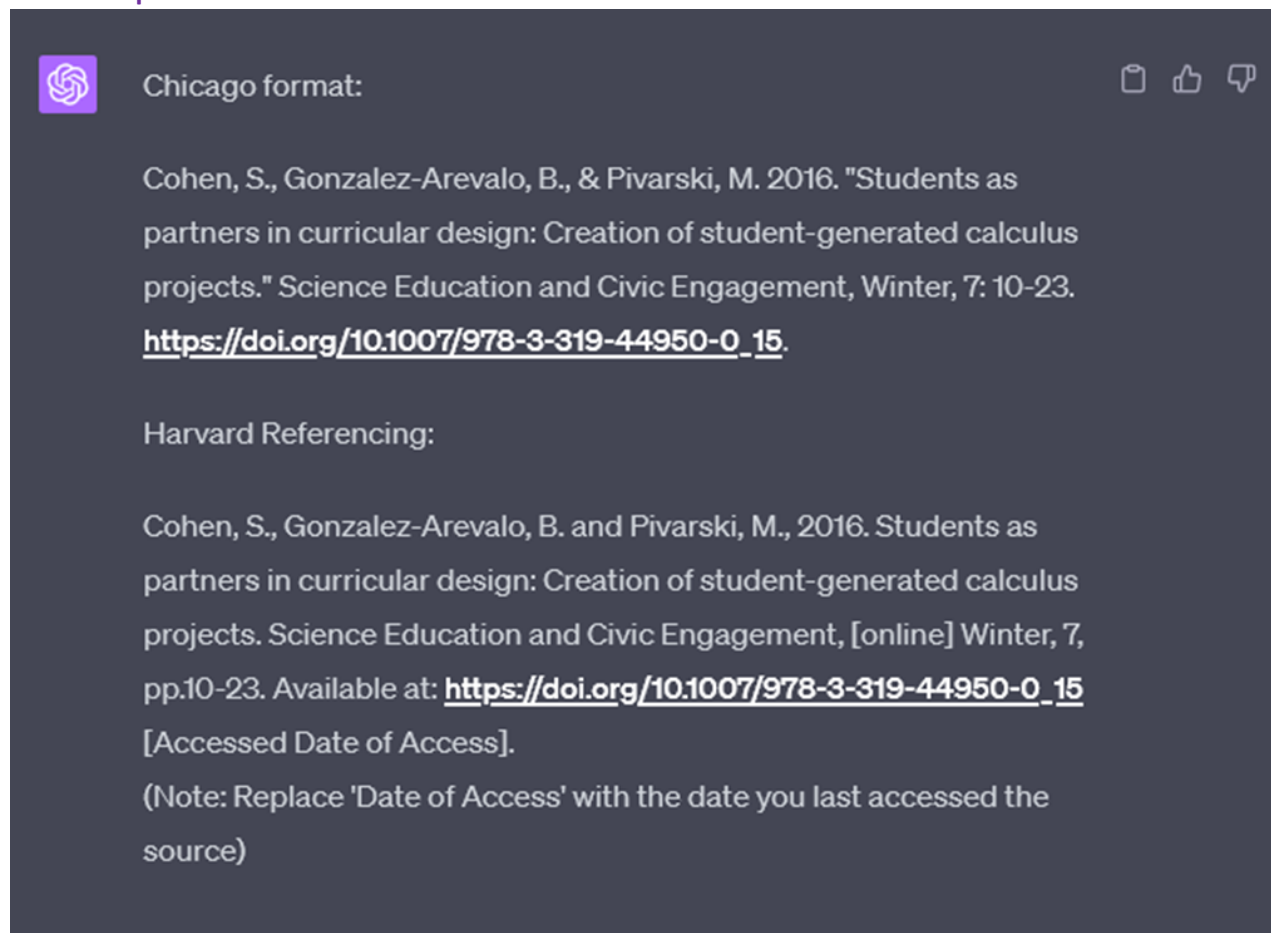
## 8. Reformatting Academic References

### User Prompt:

*Rewrite the reference using both the Chicago format and Harvard Referencing.*

*Cohen, S., Gonzalez-Arevalo, B., & Pivarski, M. (2016). Students as partners in curricular design: Creation of student-generated calculus projects. Science Education and Civic Engagement, Winter, 7, 10–23. Retrieved from [https://doi.org/10.1007/978-3-319-44950-0\\_15](https://doi.org/10.1007/978-3-319-44950-0_15). [Google Scholar]*

### GPT-4 Output:



The screenshot shows a dark-themed interface with a purple OpenAI logo in the top left. The text is as follows:

Chicago format:

Cohen, S., Gonzalez-Arevalo, B., & Pivarski, M. 2016. "Students as partners in curricular design: Creation of student-generated calculus projects." Science Education and Civic Engagement, Winter, 7: 10-23. [https://doi.org/10.1007/978-3-319-44950-0\\_15](https://doi.org/10.1007/978-3-319-44950-0_15).

Harvard Referencing:

Cohen, S., Gonzalez-Arevalo, B. and Pivarski, M., 2016. Students as partners in curricular design: Creation of student-generated calculus projects. Science Education and Civic Engagement, [online] Winter, 7, pp.10-23. Available at: [https://doi.org/10.1007/978-3-319-44950-0\\_15](https://doi.org/10.1007/978-3-319-44950-0_15) [Accessed Date of Access].

(Note: Replace 'Date of Access' with the date you last accessed the source)

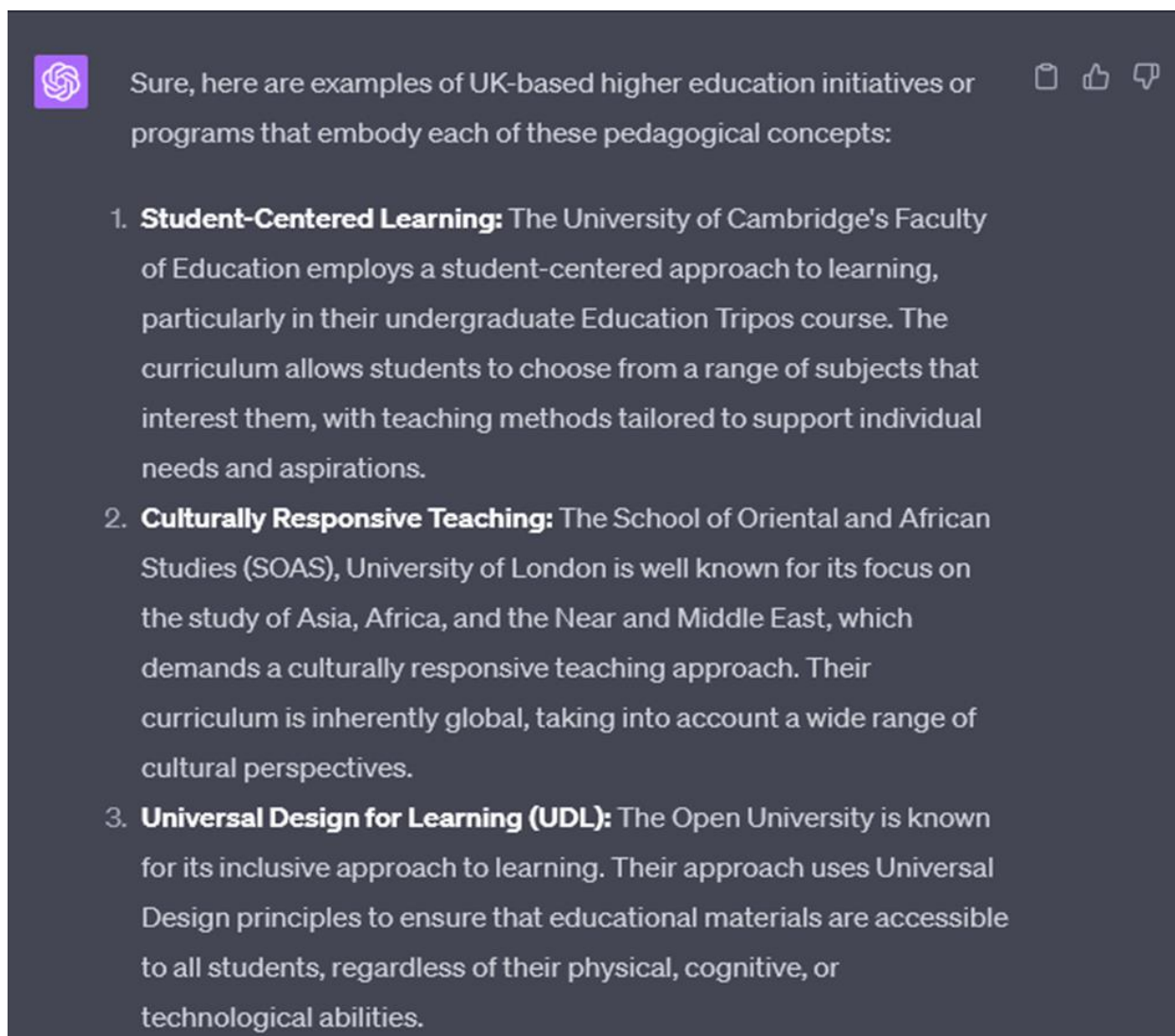
## 9. Expanding Points from Lists

### User Prompt:

*Suggest an example of UK-based Higher Education for each item on the list.*

1. *Student-Centred Learning*
2. *Culturally Responsive Teaching*
3. *Universal Design for Learning (UDL)*
4. *Trauma-Informed Teaching*
5. *Emotional Intelligence and Social Learning*
6. *Critical Pedagogy*
7. *Service Learning*
8. *Mindfulness and Self-Care*
9. *Flexible Assessment*

### GPT-4 Output:



Sure, here are examples of UK-based higher education initiatives or programs that embody each of these pedagogical concepts:

1. **Student-Centered Learning:** The University of Cambridge's Faculty of Education employs a student-centered approach to learning, particularly in their undergraduate Education Tripos course. The curriculum allows students to choose from a range of subjects that interest them, with teaching methods tailored to support individual needs and aspirations.
2. **Culturally Responsive Teaching:** The School of Oriental and African Studies (SOAS), University of London is well known for its focus on the study of Asia, Africa, and the Near and Middle East, which demands a culturally responsive teaching approach. Their curriculum is inherently global, taking into account a wide range of cultural perspectives.
3. **Universal Design for Learning (UDL):** The Open University is known for its inclusive approach to learning. Their approach uses Universal Design principles to ensure that educational materials are accessible to all students, regardless of their physical, cognitive, or technological abilities.

<https://chat.openai.com/share/3b68cbe3-7a57-4bb0-b292-38edbb8c1e4a>

## 10. Suggest an Essay Question

### User Prompt:

*Suggest some short answer questions for year one undergraduates on a Computer Science degree on the topic of software development.*

### GPT-4 Output:



1. What is an Integrated Development Environment (IDE)? Name two examples.
2. Explain the purpose of source code version control systems. Name one popular system.
3. What is the difference between high-level languages and low-level languages?
4. Define what is meant by "software development lifecycle".
5. What are the key phases of the Waterfall Model in software development?
6. What is Agile Software Development? Briefly describe its core principles.
7. Define the term "debugging" in the context of software development.
8. What is Test Driven Development (TDD)? How does it differ from traditional development practices?
9. Explain the function of a compiler in software development.
10. What does it mean for a programming language to be statically typed versus dynamically typed?

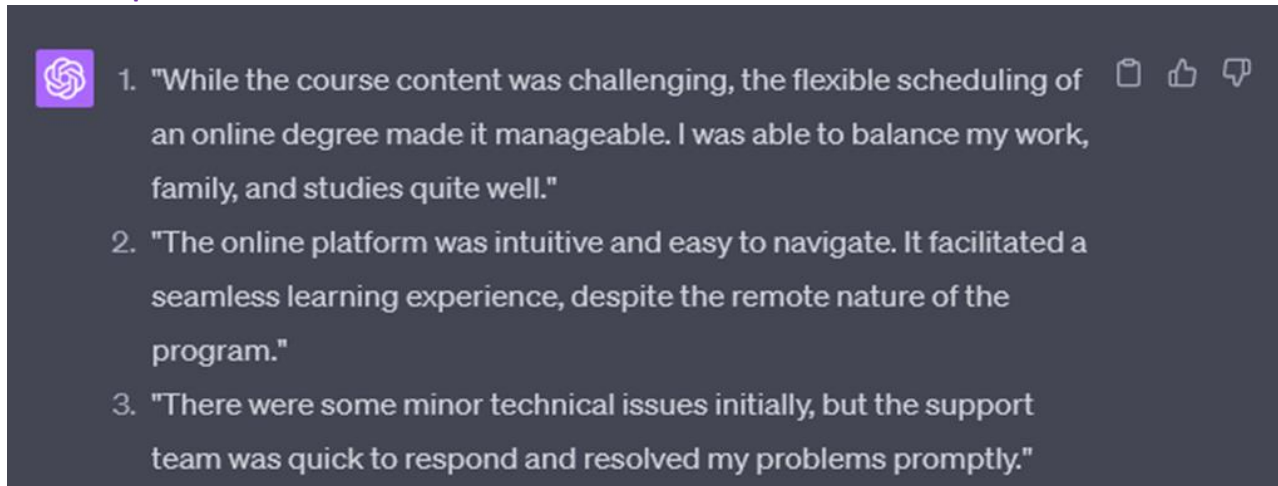


## 11. Synthesising Data from a Spreadsheet Column

### User Prompt:

*Generate a list of random student feedback who have completed an online degree course.*

### GPT-4 Output:



The screenshot shows a dark-themed chat interface with the OpenAI logo on the left. It contains three numbered feedback items:

1. "While the course content was challenging, the flexible scheduling of an online degree made it manageable. I was able to balance my work, family, and studies quite well."
2. "The online platform was intuitive and easy to navigate. It facilitated a seamless learning experience, despite the remote nature of the program."
3. "There were some minor technical issues initially, but the support team was quick to respond and resolved my problems promptly."

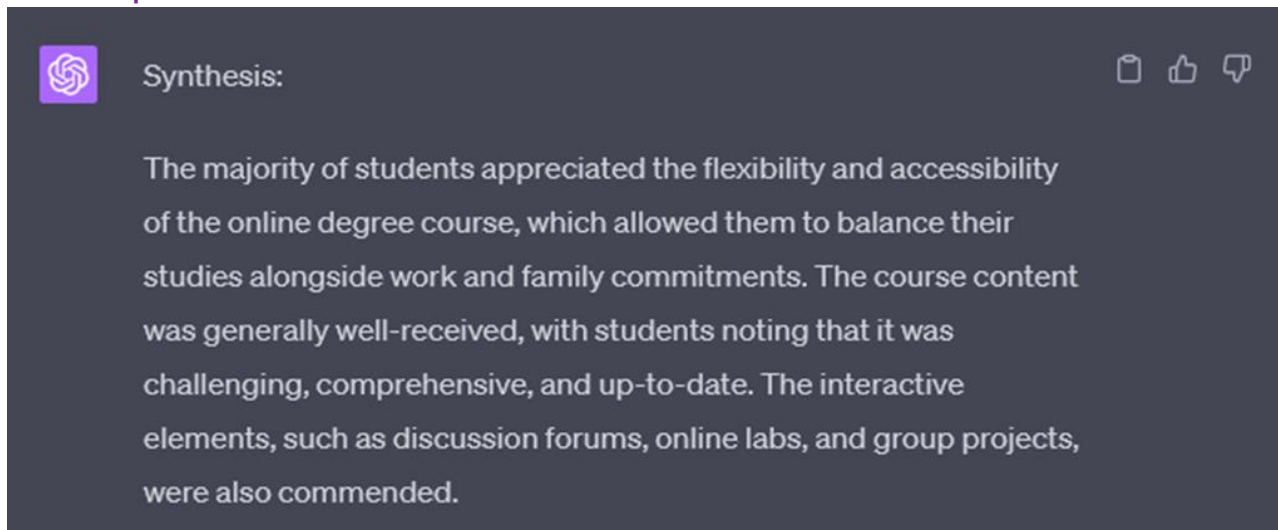
On the right side of the chat area, there are icons for copying, liking, and disliking the response.

<https://chat.openai.com/share/cfe6bcf-0c24-400f-8b8b-c7b3d65ed7e0>

### User Prompt:

*Generate a synthesis and summary from the responses.*

### GPT-4 Output:



The screenshot shows a dark-themed chat interface with the OpenAI logo on the left. The word "Synthesis:" is followed by a paragraph summarizing the feedback:

The majority of students appreciated the flexibility and accessibility of the online degree course, which allowed them to balance their studies alongside work and family commitments. The course content was generally well-received, with students noting that it was challenging, comprehensive, and up-to-date. The interactive elements, such as discussion forums, online labs, and group projects, were also commended.

On the right side of the chat area, there are icons for copying, liking, and disliking the response.

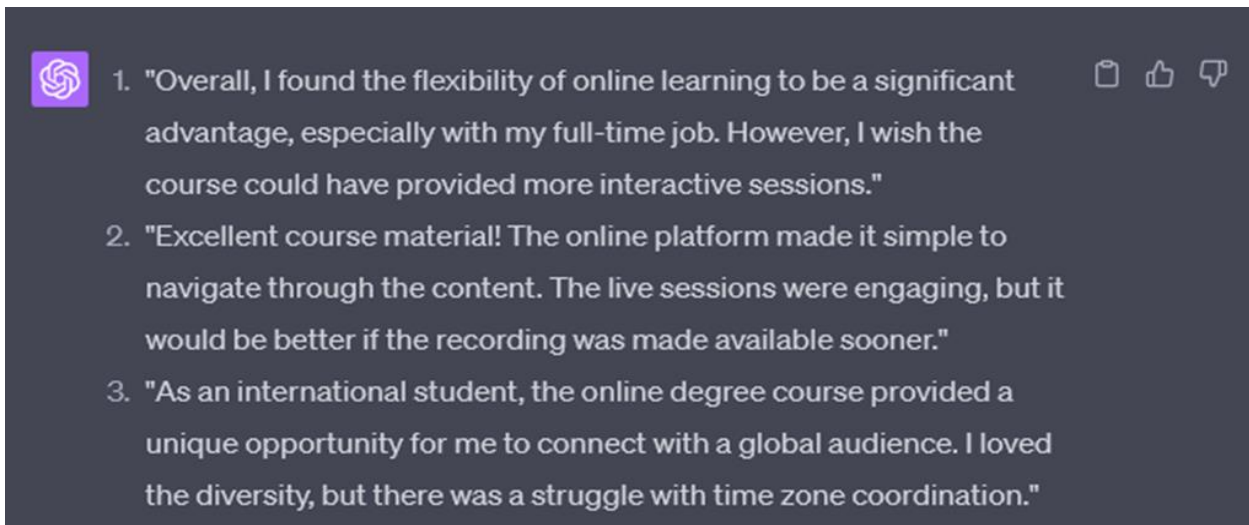
**Note:** Both a synthesis and summary are generated when using the same conversation. The same output is also achieved when you import data from a survey or a single column of text fields from a spreadsheet.

## 12. Counting Responses

### User Prompt:

*Generate a list of random student feedback who have completed an online degree course.*

### GPT-4 Output:



The screenshot shows a dark-themed chat interface with the OpenAI logo in the top left. To the right of the logo are icons for copy, thumbs up, and thumbs down. The main content is a list of three numbered feedback items:

1. "Overall, I found the flexibility of online learning to be a significant advantage, especially with my full-time job. However, I wish the course could have provided more interactive sessions."
2. "Excellent course material! The online platform made it simple to navigate through the content. The live sessions were engaging, but it would be better if the recording was made available sooner."
3. "As an international student, the online degree course provided a unique opportunity for me to connect with a global audience. I loved the diversity, but there was a struggle with time zone coordination."

### User Prompt:

*Generate a table to count the number of responses and analyse whether the feedback of positive or negative.*

### GPT-4 Output:

Feedback Number	Tone of Feedback
1	Mixed
2	Mixed
3	Mixed

Tone of Feedback	Number of Responses
Positive	2
Negative	0
Mixed	18

<https://chat.openai.com/share/e297d2f7-f54d-4f72-958a-e9e77ceeb782>

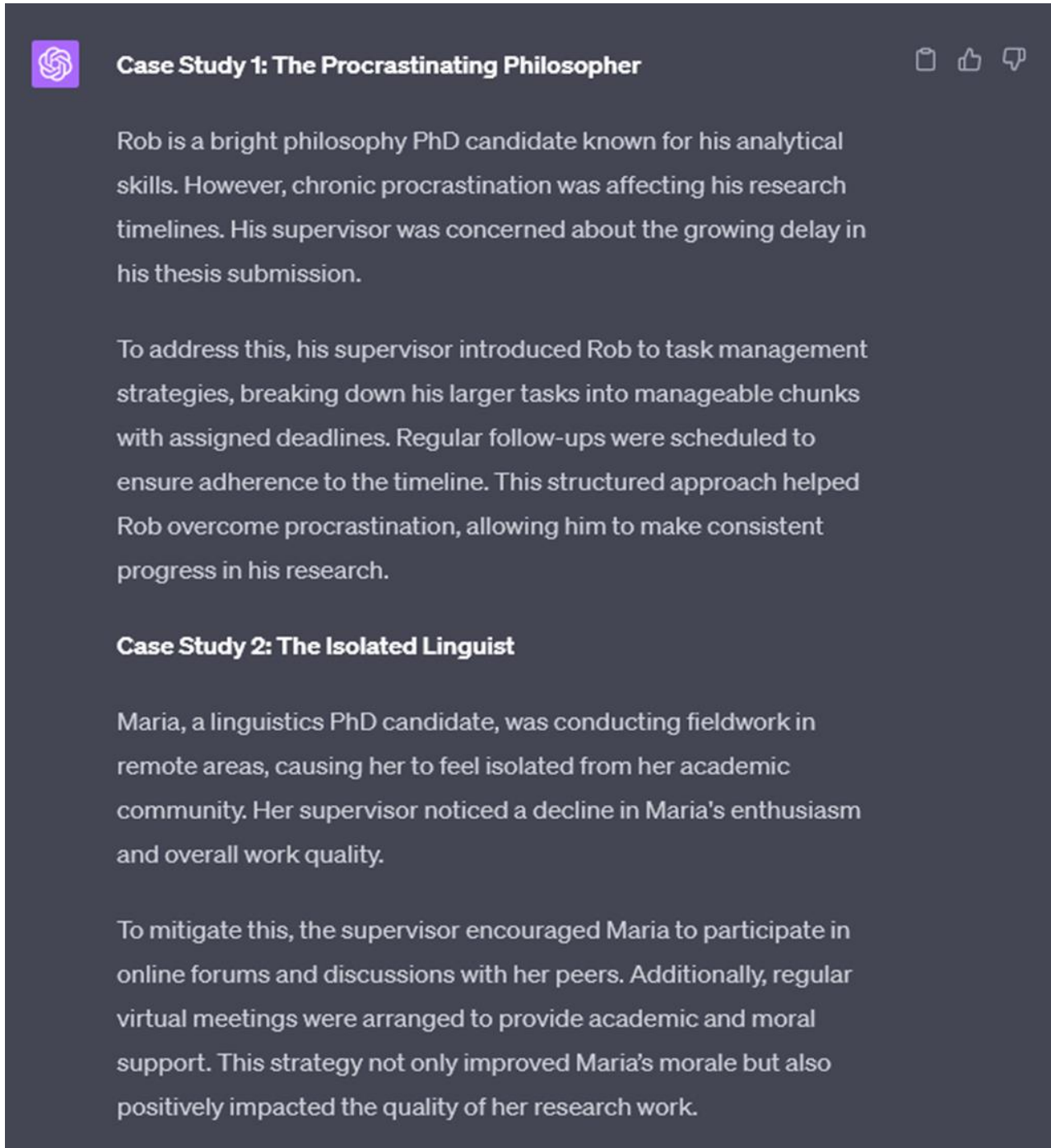


## 13. Generate Short Case Studies for Discussion

### User Prompt:

*Generate 3 short case studies between 200 words, related to PHD Supervision. Each case study should highlight a distinct but common issue in PhD supervision and come with a thumbnail sketch of the PhD candidate.*

### GPT-4 Output:



The screenshot displays the GPT-4 interface with a dark background. At the top left is the OpenAI logo. The main content area contains two case studies. The first is titled 'Case Study 1: The Procrastinating Philosopher' and describes a student named Rob who struggles with procrastination. The second is titled 'Case Study 2: The Isolated Linguist' and describes a student named Maria who feels isolated due to fieldwork. Both case studies describe the problem and the supervisor's intervention. In the top right corner of the screenshot, there are icons for a document, a thumbs up, and a thumbs down.

**Case Study 1: The Procrastinating Philosopher**

Rob is a bright philosophy PhD candidate known for his analytical skills. However, chronic procrastination was affecting his research timelines. His supervisor was concerned about the growing delay in his thesis submission.

To address this, his supervisor introduced Rob to task management strategies, breaking down his larger tasks into manageable chunks with assigned deadlines. Regular follow-ups were scheduled to ensure adherence to the timeline. This structured approach helped Rob overcome procrastination, allowing him to make consistent progress in his research.

**Case Study 2: The Isolated Linguist**

Maria, a linguistics PhD candidate, was conducting fieldwork in remote areas, causing her to feel isolated from her academic community. Her supervisor noticed a decline in Maria's enthusiasm and overall work quality.

To mitigate this, the supervisor encouraged Maria to participate in online forums and discussions with her peers. Additionally, regular virtual meetings were arranged to provide academic and moral support. This strategy not only improved Maria's morale but also positively impacted the quality of her research work.

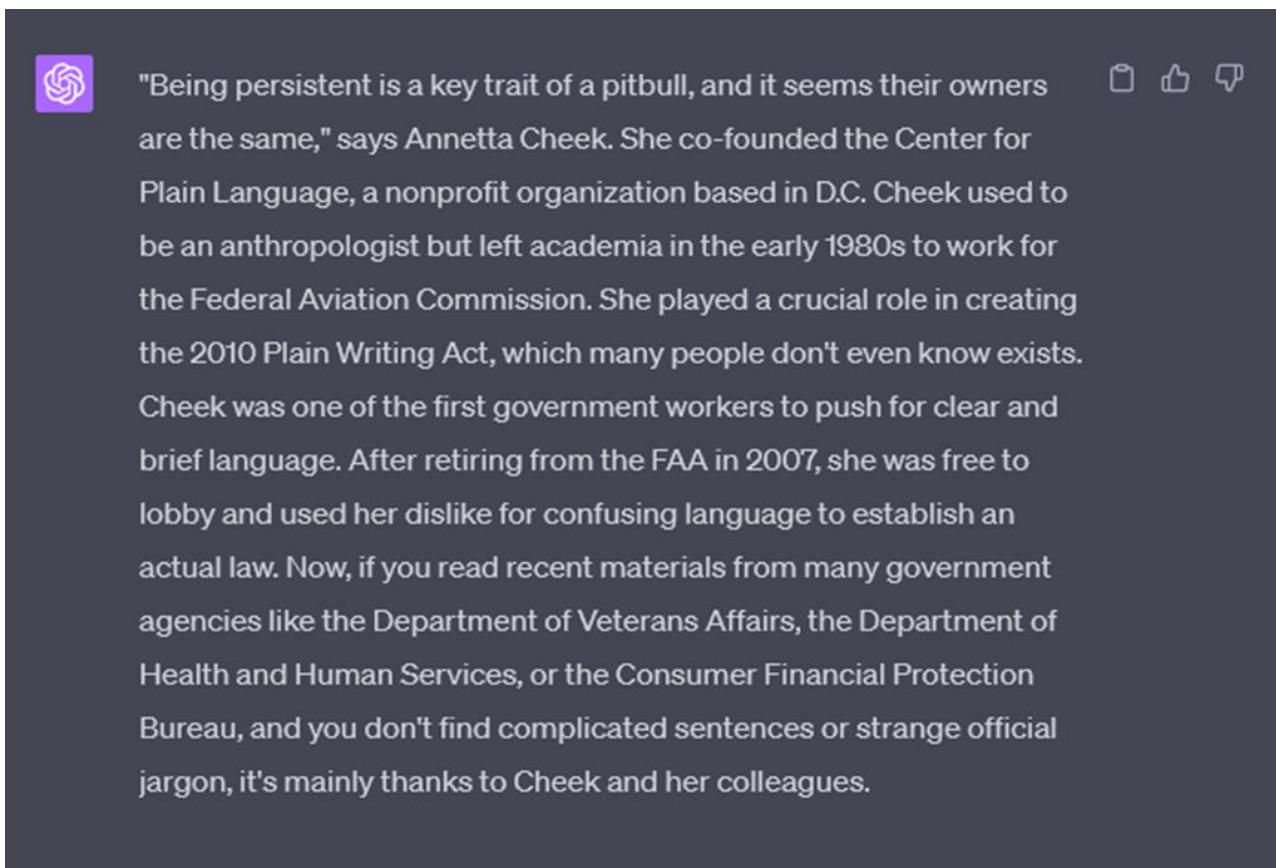
## 14. Simplify Text

### User Prompt:

*Rewrite in plain English.*

*"Persistence is one of the great characteristics of a pitbull, and I guess owners take after their dogs," says Annetta Cheek, the co-founder of the D.C.-based nonprofit Centre for Plain Language. Cheek, an anthropologist by training who left academia in the early 1980s to work for the Federal Aviation Commission, is responsible for something few people realize exists: the 2010 Plain Writing Act. In fact, Cheek was among the first government employees to champion the use of clear, concise language. Once she retired in 2007 from the FAA and gained the freedom to lobby, she leveraged her hatred for gobbledygook to create an actual law. Take a look at recent information put out by many government agencies such as the Department of Veterans Affairs, the Department of Health and Human Services, and the Consumer Financial Protection Bureau—if it lacks needlessly complex sentences or bizarre bureaucratic jargon, it's largely because of Cheek and her colleagues.*

### GPT-4 Output:



The screenshot shows a chat interface with a dark background. On the left is the OpenAI logo. The user's prompt is: "Being persistent is a key trait of a pitbull, and it seems their owners are the same," says Annetta Cheek. She co-founded the Center for Plain Language, a nonprofit organization based in D.C. Cheek used to be an anthropologist but left academia in the early 1980s to work for the Federal Aviation Commission. She played a crucial role in creating the 2010 Plain Writing Act, which many people don't even know exists. Cheek was one of the first government workers to push for clear and brief language. After retiring from the FAA in 2007, she was free to lobby and used her dislike for confusing language to establish an actual law. Now, if you read recent materials from many government agencies like the Department of Veterans Affairs, the Department of Health and Human Services, or the Consumer Financial Protection Bureau, and you don't find complicated sentences or strange official jargon, it's mainly thanks to Cheek and her colleagues. The GPT-4 response is: "Being persistent is a key trait of a pitbull, and it seems their owners are the same," says Annetta Cheek. She co-founded the Center for Plain Language, a nonprofit organization based in D.C. Cheek used to be an anthropologist but left academia in the early 1980s to work for the Federal Aviation Commission. She played a crucial role in creating the 2010 Plain Writing Act, which many people don't even know exists. Cheek was one of the first government workers to push for clear and brief language. After retiring from the FAA in 2007, she was free to lobby and used her dislike for confusing language to establish an actual law. Now, if you read recent materials from many government agencies like the Department of Veterans Affairs, the Department of Health and Human Services, or the Consumer Financial Protection Bureau, and you don't find complicated sentences or strange official jargon, it's mainly thanks to Cheek and her colleagues.

**Note:** Care should be taken when using ChatGPT to reword/rewrite text that includes a quote, as it will change the quote (even when prompted not to) – thus the context of the reworded text will be different.

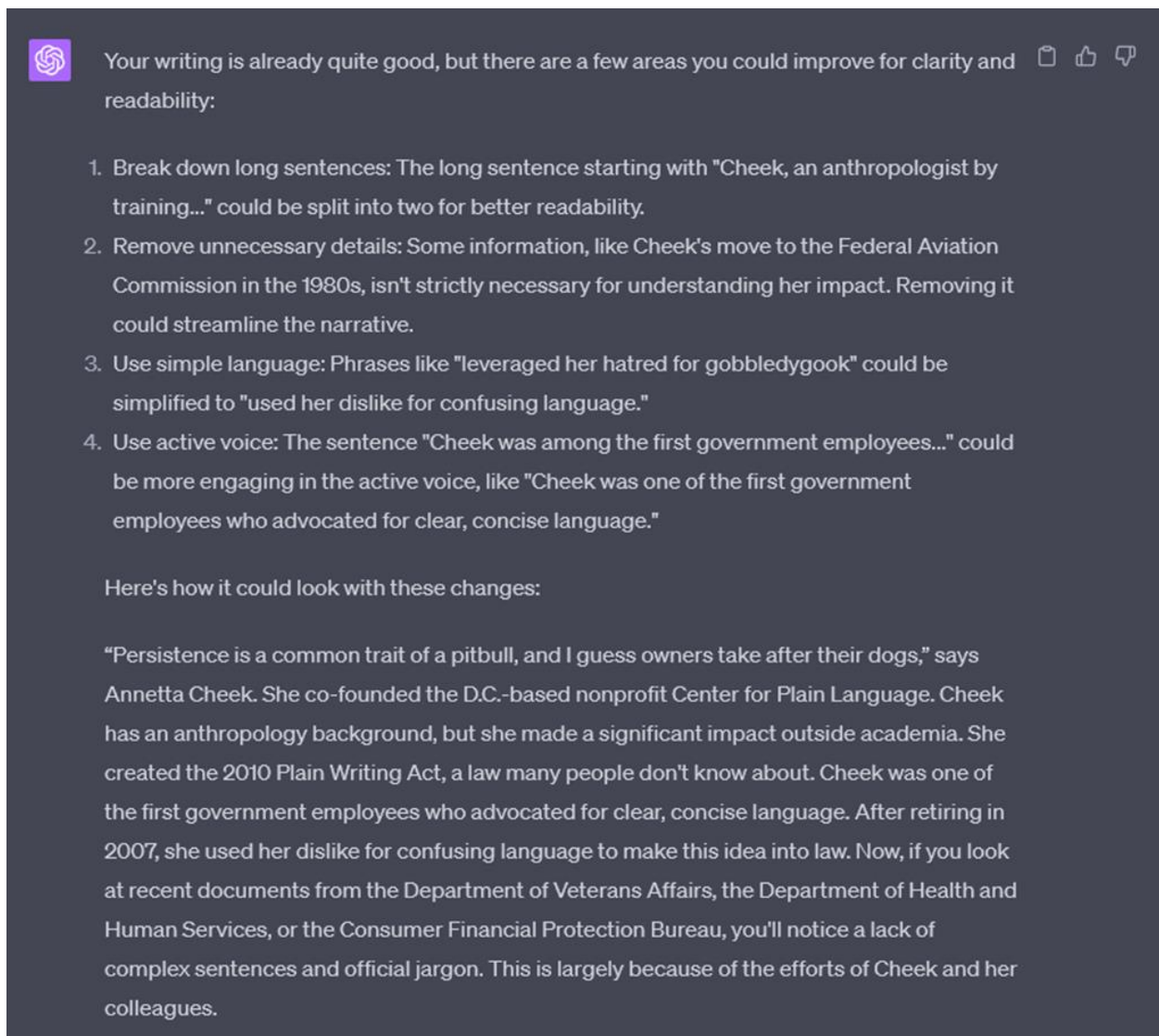
## 15. Ask for Feedback

### User Prompt:

*Give me feedback on how I could improve this.*

*"Persistence is one of the great characteristics of a pitbull, and I guess owners take after their dogs," says Annetta Cheek, the co-founder of the D.C.-based nonprofit centre for Plain Language. Cheek, an anthropologist by training who left academia in the early 1980s to work for the Federal Aviation Commission, is responsible for something few people realize exists: the 2010 Plain Writing Act. In fact, Cheek was among the first government employees to champion the use of clear, concise language. Once she retired in 2007 from the FAA and gained the freedom to lobby, she leveraged her hatred for gobbledygook to create an actual law. Take a look at recent information put out by many government agencies such as the Department of Veterans Affairs, the Department of Health and Human Services, and the Consumer Financial Protection Bureau—if it lacks needlessly complex sentences or bizarre bureaucratic jargon, it's largely because of Cheek and her colleagues.*

### GPT-4 Output:

A screenshot of a GPT-4 chat interface. The background is dark grey. At the top left is the OpenAI logo. To its right is the text: "Your writing is already quite good, but there are a few areas you could improve for clarity and readability:". To the right of this text are three icons: a document, a thumbs up, and a thumbs down. Below this is a numbered list of four suggestions. Below the list is the text: "Here's how it could look with these changes:". Below that is a paragraph of revised text.

Your writing is already quite good, but there are a few areas you could improve for clarity and readability:

1. Break down long sentences: The long sentence starting with "Cheek, an anthropologist by training..." could be split into two for better readability.
2. Remove unnecessary details: Some information, like Cheek's move to the Federal Aviation Commission in the 1980s, isn't strictly necessary for understanding her impact. Removing it could streamline the narrative.
3. Use simple language: Phrases like "leveraged her hatred for gobbledygook" could be simplified to "used her dislike for confusing language."
4. Use active voice: The sentence "Cheek was among the first government employees..." could be more engaging in the active voice, like "Cheek was one of the first government employees who advocated for clear, concise language."

Here's how it could look with these changes:

"Persistence is a common trait of a pitbull, and I guess owners take after their dogs," says Annetta Cheek. She co-founded the D.C.-based nonprofit Center for Plain Language. Cheek has an anthropology background, but she made a significant impact outside academia. She created the 2010 Plain Writing Act, a law many people don't know about. Cheek was one of the first government employees who advocated for clear, concise language. After retiring in 2007, she used her dislike for confusing language to make this idea into law. Now, if you look at recent documents from the Department of Veterans Affairs, the Department of Health and Human Services, or the Consumer Financial Protection Bureau, you'll notice a lack of complex sentences and official jargon. This is largely because of the efforts of Cheek and her colleagues.

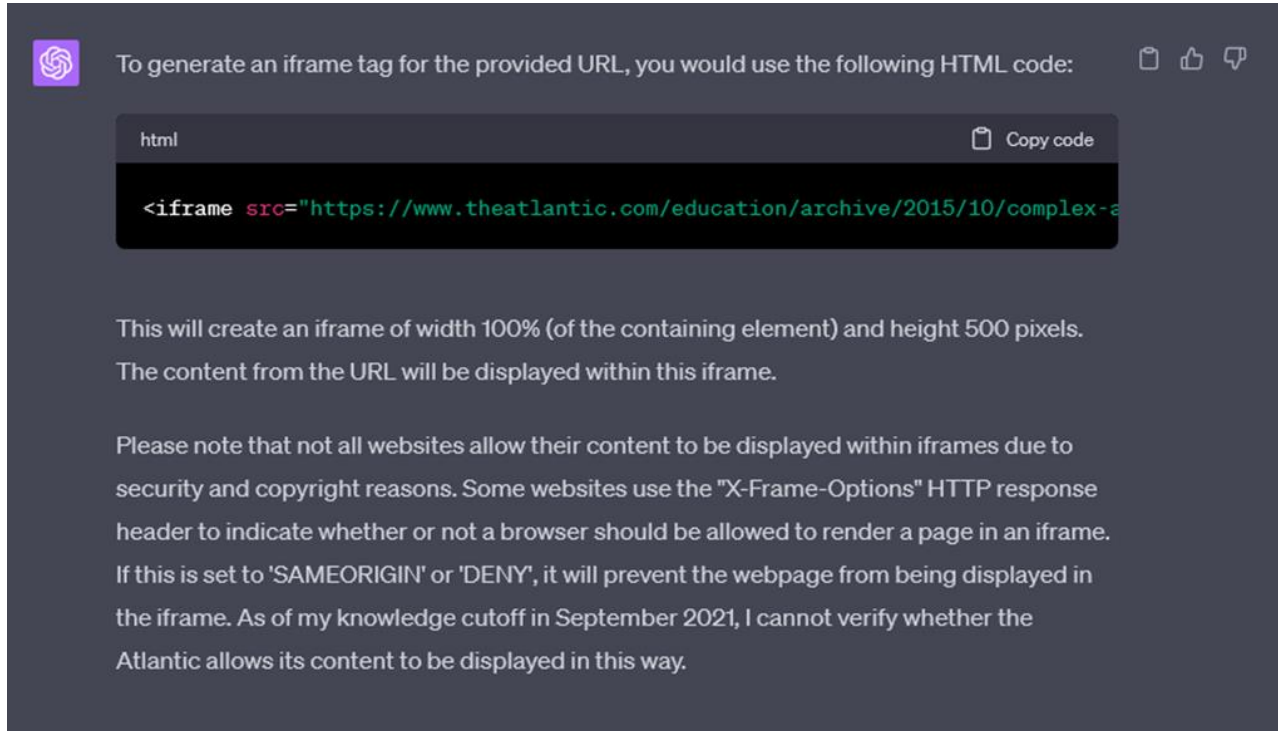
## 16. Generate an iframe HTML Tag for Embedding Links

### User Prompt:

*Generate an iframe tag for the following link.*

<https://www.theatlantic.com/education/archive/2015/10/complex-academic-writing/412255/>

### GPT-4 Output:



The screenshot shows a chat window with the OpenAI logo in the top left. The user's prompt is: "To generate an iframe tag for the provided URL, you would use the following HTML code:". The AI's response is a code block containing the following HTML: 

```
<iframe src="https://www.theatlantic.com/education/archive/2015/10/complex-academic-writing/412255/" width="100%" height="500"></iframe>
```

 Below the code block, the AI explains: "This will create an iframe of width 100% (of the containing element) and height 500 pixels. The content from the URL will be displayed within this iframe. Please note that not all websites allow their content to be displayed within iframes due to security and copyright reasons. Some websites use the 'X-Frame-Options' HTTP response header to indicate whether or not a browser should be allowed to render a page in an iframe. If this is set to 'SAMEORIGIN' or 'DENY', it will prevent the webpage from being displayed in the iframe. As of my knowledge cutoff in September 2021, I cannot verify whether the Atlantic allows its content to be displayed in this way."

**Note:** The generated HTML code snippet allows you to copy from ChatGPT and paste directly into other web services like WordPress, T4, SharePoint, etc.

```
<iframe src="https://www.theatlantic.com/education/archive/2015/10/complex-academic-writing/412255/" width="100%" height="500"></iframe>
```

## 17. Generate Descriptive Links

### User Prompt:

Generate descriptive links from the following based on the name of the site it links to.

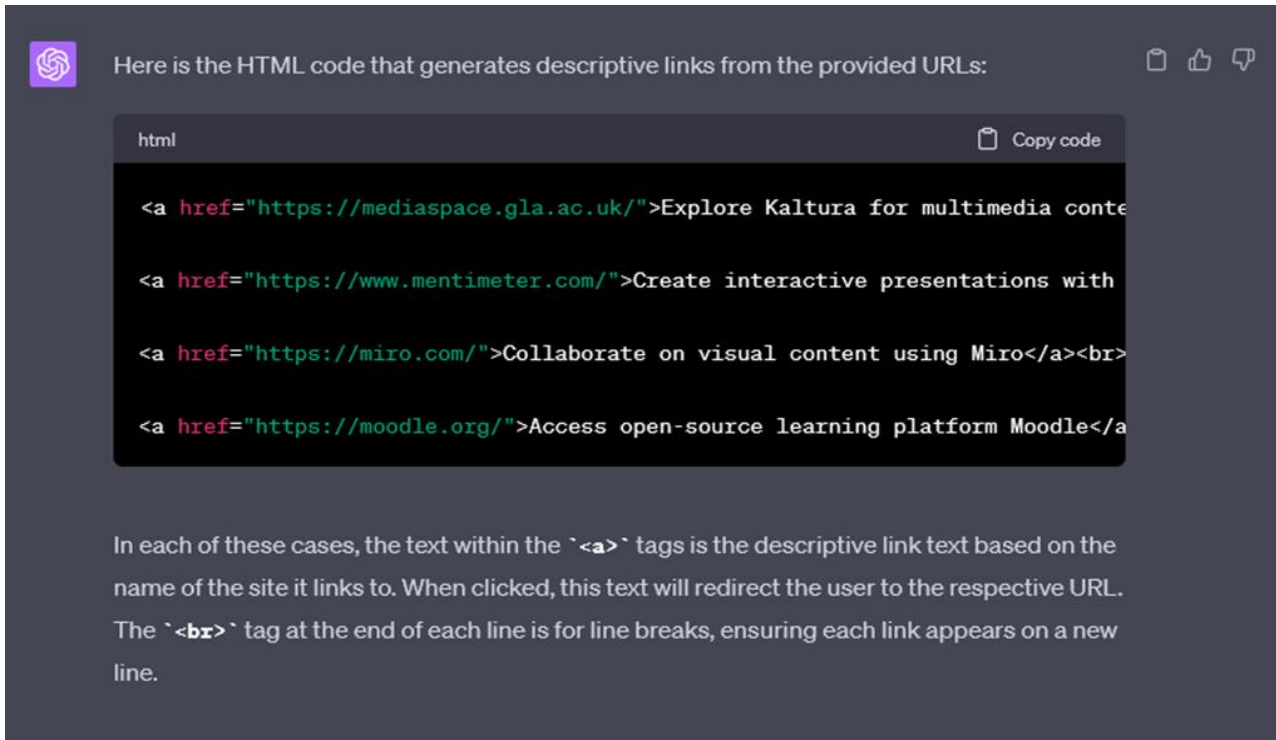
Kaltura <https://mediaspace.gla.ac.uk/>

Mentimeter <https://www.mentimeter.com/>

Miro <https://miro.com/>

Moodle <https://moodle.org/>

### GPT-4 Output:



The screenshot shows a chat window with the OpenAI logo in the top left. The text reads: "Here is the HTML code that generates descriptive links from the provided URLs:". To the right are icons for copy, like, and comment. Below this is a code editor with a dark background and light text. The code is as follows:

```
html
Copy code
<a href="https://mediaspace.gla.ac.uk/">Explore Kaltura for multimedia conte
<a href="https://www.mentimeter.com/">Create interactive presentations with
<a href="https://miro.com/">Collaborate on visual content using Miro</a><br>
<a href="https://moodle.org/">Access open-source learning platform Moodle</a
```

Below the code editor, there is explanatory text: "In each of these cases, the text within the `<a>` tags is the descriptive link text based on the name of the site it links to. When clicked, this text will redirect the user to the respective URL. The `<br>` tag at the end of each line is for line breaks, ensuring each link appears on a new line."

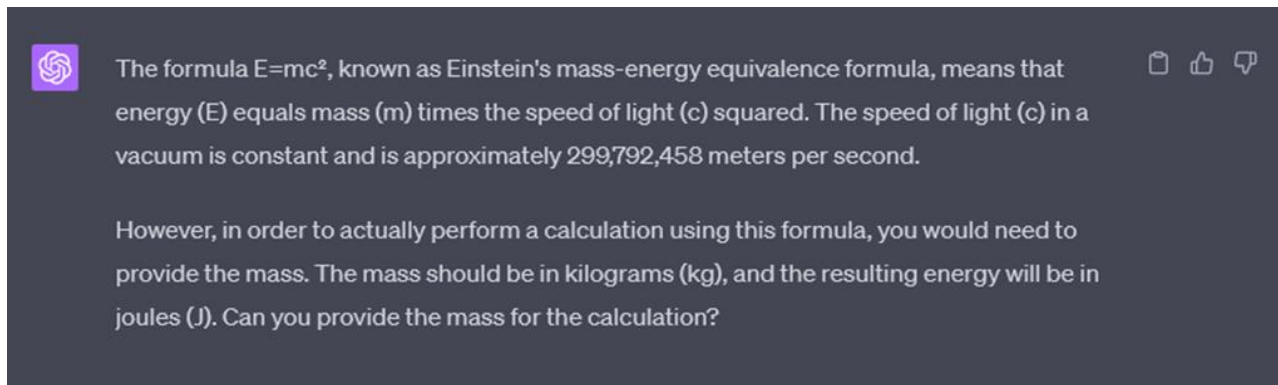
```
<a href="https://mediaspace.gla.ac.uk/">Explore Kaltura for multimedia
content</a> <a href="https://www.mentimeter.com/">Create interactive
presentations with Mentimeter</a> <a href="https://miro.com/">Collaborate on
visual content using Miro</a> <a href="https://moodle.org/">Access open-source
learning platform Moodle</a>
```

## 18. Calculate Mathematical Equations

### User Prompt:

*Calculate  $E=mc^2$*

### GPT-4 Output:



The formula  $E=mc^2$ , known as Einstein's mass-energy equivalence formula, means that energy (E) equals mass (m) times the speed of light (c) squared. The speed of light (c) in a vacuum is constant and is approximately 299,792,458 meters per second.

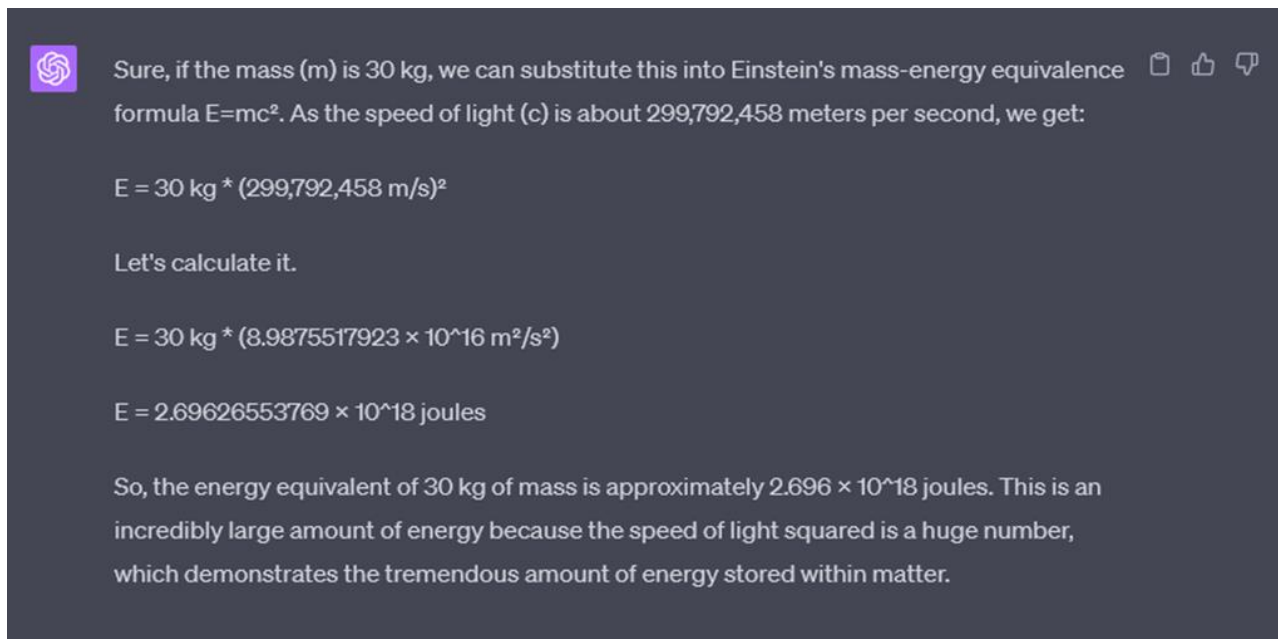
However, in order to actually perform a calculation using this formula, you would need to provide the mass. The mass should be in kilograms (kg), and the resulting energy will be in joules (J). Can you provide the mass for the calculation?

**Note:** ChatGPT is good to provide context of scientific and mathematical equations. This allows you to learn more and direct ChatGPT with extra data, where it will illustrate the workings and output an answer.

### User Prompt:

*Calculate  $E=mc^2$  where mass is 30kg*

### GPT-4 Output:



Sure, if the mass (m) is 30 kg, we can substitute this into Einstein's mass-energy equivalence formula  $E=mc^2$ . As the speed of light (c) is about 299,792,458 meters per second, we get:

$$E = 30 \text{ kg} * (299,792,458 \text{ m/s})^2$$

Let's calculate it.

$$E = 30 \text{ kg} * (8.9875517923 \times 10^{16} \text{ m}^2/\text{s}^2)$$
$$E = 2.69626553769 \times 10^{18} \text{ joules}$$

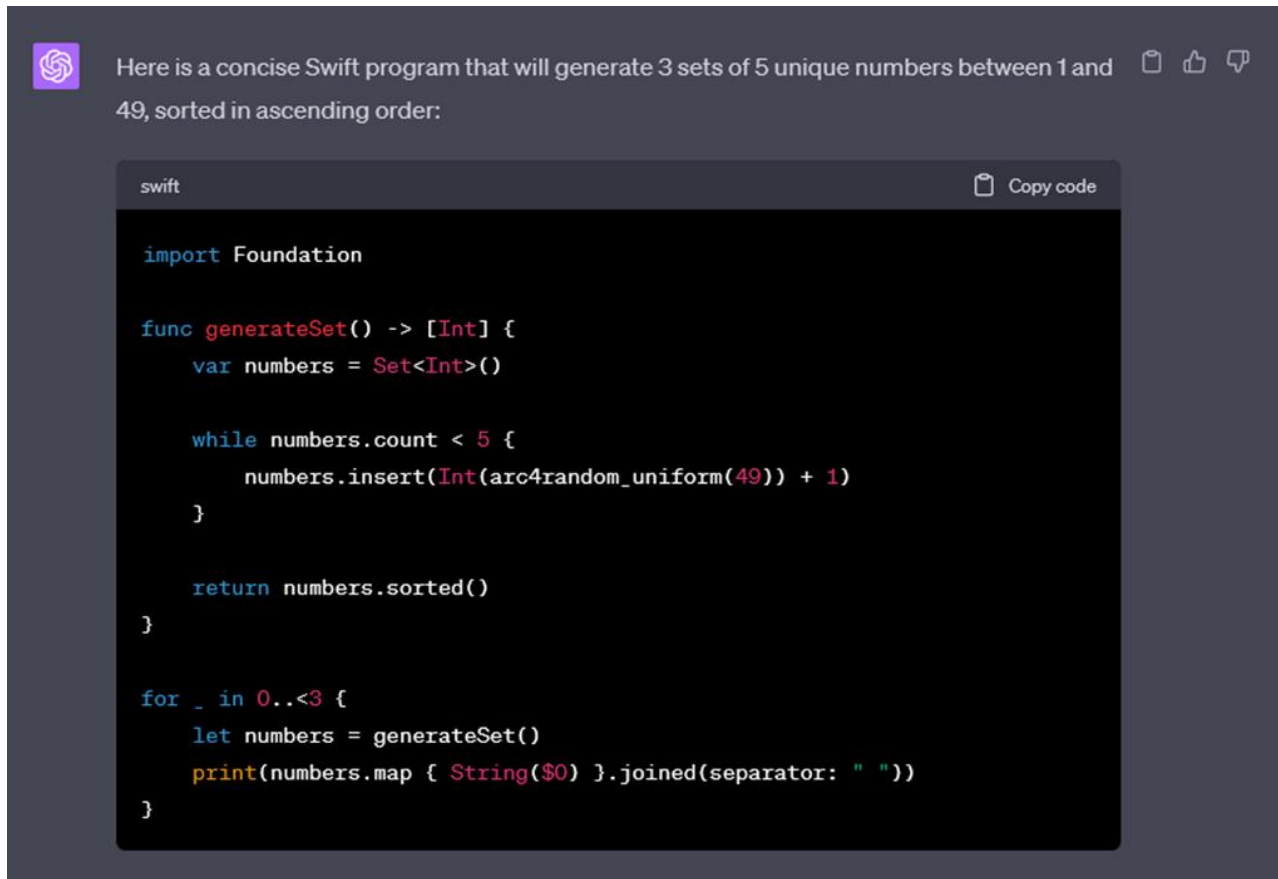
So, the energy equivalent of 30 kg of mass is approximately  $2.696 \times 10^{18}$  joules. This is an incredibly large amount of energy because the speed of light squared is a huge number, which demonstrates the tremendous amount of energy stored within matter.

## 19. Generate Programming Code

### User Prompt:

Write a concise program using Swift which generates 3 sets of 5 numbers between 1 and 49 with unique values. Sort each set by ascending order.

### GPT-4 Output:



Here is a concise Swift program that will generate 3 sets of 5 unique numbers between 1 and 49, sorted in ascending order:

```
swift Copy code

import Foundation

func generateSet() -> [Int] {
    var numbers = Set<Int>()

    while numbers.count < 5 {
        numbers.insert(Int(arc4random_uniform(49)) + 1)
    }

    return numbers.sorted()
}

for _ in 0..<3 {
    let numbers = generateSet()
    print(numbers.map { String($0) }.joined(separator: " "))
}
```

This Swift program does the following:

1. Define a function `generateSet` to generate a sorted set of 5 unique random numbers between 1 and 49.
2. Use `Set` to ensure the uniqueness of the numbers. `arc4random_uniform(49)` generates a random number from 0 to 48. Adding 1 ensures the range is between 1 and 49.
3. Call `generateSet` three times to generate three sets of numbers.
4. Print the sorted numbers in each set, separated by spaces.

## Additional readings

Building on categories from [UNESCO quick start for ChatGPT and Higher Education](#) this blog post suggests many examples derived from the UNESCO document that could be used as a starting point:

[Use Chat GPT to Enhance Learning Experiences and Revolutionize Your Classroom – THISISGRAEME](#)

Two papers on ways to use AI for teaching. All have prompts & details:

<https://twitter.com/emollick/status/1668996316016386050?s=20>

Virtual town as model for science students to reflect on science communication with public.

[Names, Games and Fictional Worlds .. Creative Use of Generative AI in HE Teaching – YouTube](#)

### Further introductions to prompt engineering

- Microsoft Introduction to prompt engineering [Azure OpenAI Service – Azure OpenAI | Microsoft Learn](#)
- Walkthrough of Prompting on Twitter <https://twitter.com/MushtaqBilalPhD/status/1637716427040870401?s=20>
- Good breakdown of using Prompt Engineering in an academic context [ChatGPT prompt engineering as academic skill | THE Campus Learn, Share, Connect \(timeshighereducation.com\)](#)

## References

Benjamin, R. (2019). Assessing risk, automating racism. *Science*, 366(6464), 421-422.

<https://doi.org/10.1126/science.aaz3873>

Benjamin, R. (2020). *Race after technology: Abolitionist tools for the new Jim code*. Polity Books.

Freire, P. (2000). *Pedagogy of freedom: Ethics, democracy, and civic courage*. Rowman & Littlefield Publishers.

Hooks, b. (2003). *Teaching Community: A Pedagogy of Hope*. Routledge.