Generative AI and critical thinking

1. Introduction

Generative AI tools may produce incomplete, inaccurate, outdated or false information (known as 'hallucinations'). They may also create biased or stereotypical information.

It is important that you carefully evaluate and double check the information generated by AI to make sure that it is accurate, reliable and appropriate.

The tips in this activity will help you to think critically about AI outputs.

Using this tutorial

Click on the tabs to look at each tip and then navigate to the quiz at the end using the "next" button.

Learning outcomes

By the end of this activity, you should:
- be able to critically evaluate any AI generated content;
- be able to critically evaluate generative AI tools and their capabilities;
- be able to check for bias and inaccuracies in AI generated outputs.

2. Tip 1

Think about your motives for using Generative AI in your studies.

- Will it enhance your learning and support the development of your knowledge?
- Are you using it to replace your own creative skills?
- Would you be better off using Library Search, Library Databases or Google Scholar?

If you do not think about these things before you use a Generative AI tool, you risk hindering your critical thinking skills and your development as a student.

If you are unsure whether you are permitted to use Generative AI tools in your studies, please speak to your tutor and consult The Open University Generative AI guidance for students.

3. Tip 2

Evaluate the tool you would like to use.

Do you know how the tool is trained?

Do you know how current the information the tool is trained on is?

How much information is made available about how the tool works?

What information is shared about the tool on its website about when the tool was released, when it was last updated, the aim or mission of the company who built the tool?

4. Tip 3

Ask questions about the output you've created with the tool

- Does the information confirm what you already know about a topic?
- Is it accurate?
- Does it tell the full story?
- What are the gaps, inconsistencies or irrelevant pieces of information? Be sceptical.

5. Tip 4

Fact check information produced by Generative AI.

- Look at other sources or your own knowledge on a topic.
- Check and verify the output using trusted sources, such as Library Search, Library Databases or trusted websites.
- Some Generative AI tools, such as Google Gemini have an in-built function to fact check on the internet.

6. Tip 5

Is there any bias in the output created by the tool?

Things to look for:
- Look for stereotypical outputs.
- Bias based on race/gender/sexuality/age.

Why is it important?

- **Fairness and Equity:** Generative AI algorithms are increasingly being used to make important decisions that can impact people's lives, like loan approvals or criminal justice predictions. If these algorithms are biased, they can unfairly disadvantage certain groups of people. For instance, an algorithm biased against a particular race might deny them loans more frequently.
- **Accuracy and Trust:** Biased algorithms can also lead to inaccurate results. If a generative AI system is trained on data that reflects historical biases, it will perpetuate those biases in its outputs. This can lead to unreliable results and a loss of trust in generative AI as a whole.

Here's an analogy: Imagine a judge who always gives harsher sentences to people wearing a certain colour shirt. This judge's decisions would be unfair and inaccurate. Generative AI algorithms can fall into this same trap if their biases aren't addressed.

By considering and mitigating bias in generative AI, we can ensure that these powerful tools are used fairly and effectively for everyone.

You might like to read this thought-provoking article about cultural bias and AI.

[AI and the American Smile. How AI misrepresents culture through a… | by jenka | Medium](#)

7. Quiz Time!

Question 1 of 3

What is a key aspect of critical thinking when evaluating AI-generated content?

1. Accepting all AI-generated results as accurate.
2. Questioning and analysing the credibility of AI-generated content.
3. Avoiding AI-generated content altogether.

4. Using AI-generated content without any scrutiny.

Question 1 Feedback for Option 1

Incorrect! You must always fact check and critically evaluate any AI-generated output.

Question 1 Feedback for Option 2

Correct! Always question and critically evaluate any AI-generated content.

Question 1 Feedback for Option 3

Incorrect! You are not obliged to use generative AI tools but they can enhance your learning. Just remember to critically evaluate anything you generate.

Question 1 Feedback for Option 4

Incorrect! Always scrutinise and evaluate any content created by a generative AI tool.

Question 2 of 3

Why is it important to consider biases in generative AI algorithms?

1. Biases in generative AI algorithms are always positive and helpful.
2. Biases can affect the fairness and accuracy of AI-generated results.
3. Biases in generative AI algorithms are irrelevant to critical thinking.
4. Biases in generative AI algorithms have no impact on generated content.

Question 2 Feedback for Option 1

Incorrect! Biases can create misinformation.

Question 2 Feedback for Option 2

Correct! You must always check your AI-generated results for bias and accuracy.

Question 2 Feedback for Option 3

Incorrect! Considering bias when critically evaluating generative AI tools is essential.

Question 2 Feedback for Option 4

Incorrect! If a Generative AI tool has been trained on biased data, this will have a negative impact on the content it creates.

Question 3 of 3

What skill is essential for critically assessing AI-generated content?

1. Memorizing all generative AI algorithms.
2. Identifying and questioning the limitations of the tool.
3. Mastering advanced programming languages.
4. Avoiding any analysis of AI-generated content.

Question 3 Feedback for Option 1

Incorrect! In depth knowledge of algorithms is unnecessary!

Question 3 Feedback for Option 2

Correct! The more you know about the tool, the more you can question and identify limitations.

Question 3 Feedback for Option 3

Incorrect! Advanced knowledge of programming languages is unnecessary.

Question 3 Feedback for Option 4

Incorrect! Always analyse and critically evaluate any AI-generated content.