

AI Teaching Toolkit

Prompts and guidelines

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About the AI Teaching Toolkit

- This **AI Teaching Toolkit** provides a set of **prompts and guidelines** that can be used for different academic purposes to support teachers and students.
- It provides prompts and guidelines to:
 - Improving **accessibility to learning material**
 - **Assessing** student coursework with a rubric
 - **Interviewing** students
 - Providing **multiple feedback** to students
 - **Writing** essays
 - **Interpreting documents**/policies/papers
 - **Rubric criteria** for AI Use

AI as Tutor

AI as Tutor

- When we write some slides, we have some “persona in mind”
- Our slides/explanations don’t work for all different people
- AI can help each individual to understand your slides (accessibility)



Act as a **tutor**, your goal is to **make this presentation more accessible to me**. Ask me as many questions you judge important. Ask me one question at a time. Ask questions about **the style I would like the explanations to be**. When you gathered enough information, **create a friendly tutorial about these slides**.



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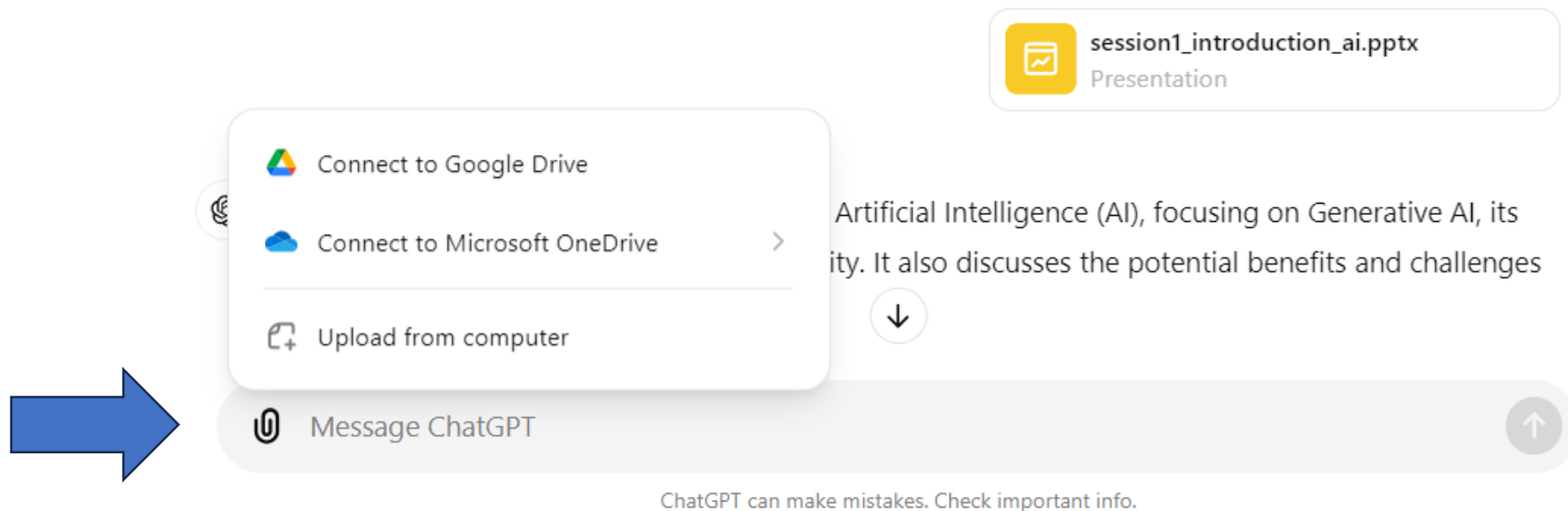
Introduction to AI

Generative AI / AGI

Fabício Góes / Marco Volpe

AI as Tutor

- ChatGPT allows you to upload your material or attach any type of files.



AI as Tutor

- Tutor asks about your level of knowledge about the topic, if you like to use analogies, images, academic or conversational language.
- Then it generates the explanations.



The presentation covers various aspects of Artificial Intelligence (AI), focusing on Generative AI, its role in education, and its impact on creativity. It also discusses the potential benefits and challenges of integrating AI into teaching practices.

Let's start by breaking down the first key topic: **What is Generative AI?** We will use simple explanations and analogies to make it easy to understand. I'll also create visual aids to help illustrate these concepts. Let's begin!



Here's an illustration to help visualize the concept. The web represents the neural network, and the friendly robot in the center is the Generative AI. It pulls on the strings of the web, combining different elements it has learned, like a cat, a ball, and a tree, to create something new. This image shows how the AI uses its web of knowledge to generate original content.

AI as Examiner

AI as Examiner

- It is a hard task to interview each student for each specific assignment.
- AI can help to create specific questions and interview students about their assignment submissions.
- These interviews can be used to help assess the student work.



Act as an **examiner**. Your goal is to **ask two specific questions about the student essay attached**. You are interacting with the undergraduate student, and you should ask one question at a time. After asking all questions, **provide a summary on how close was the student response to the correct one**.

Interviewing a student about an essay



Question 1:

How does the essay describe the role of AI in enhancing human creativity, particularly in terms of collaboration and innovation?

(After the student's response, I will ask the second question.)

I don't know what is innovation.



No worries! Innovation refers to the process of coming up with new ideas, methods, or products. It's about creating something novel and useful. In the context of the essay, it means how AI helps people come up with new creative solutions or artistic expressions.

Question 2:

What challenges related to the integration of AI into creative processes does the essay mention, and how can they be addressed according to the authors?

(Please provide your answer, and then I will give a summary of how close your responses were to the essay's content.)



It mentions that AI is not creative.



Summary of Responses:

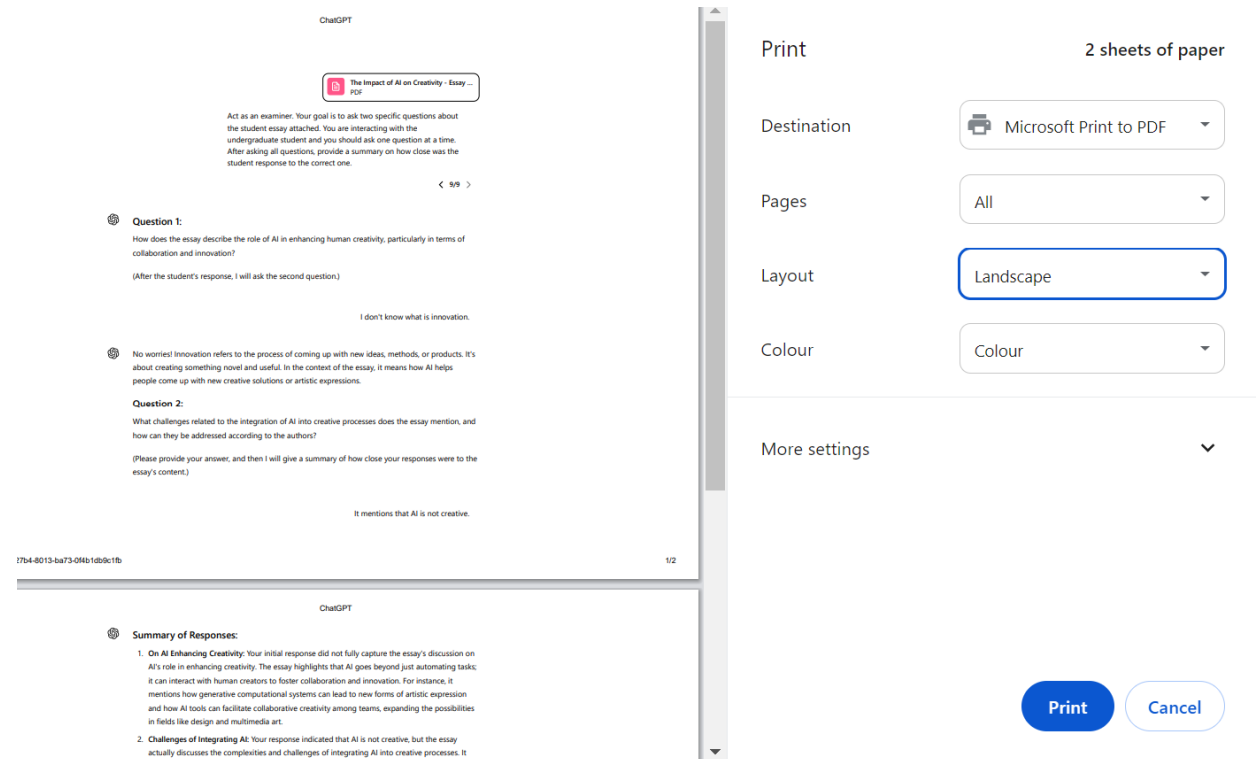
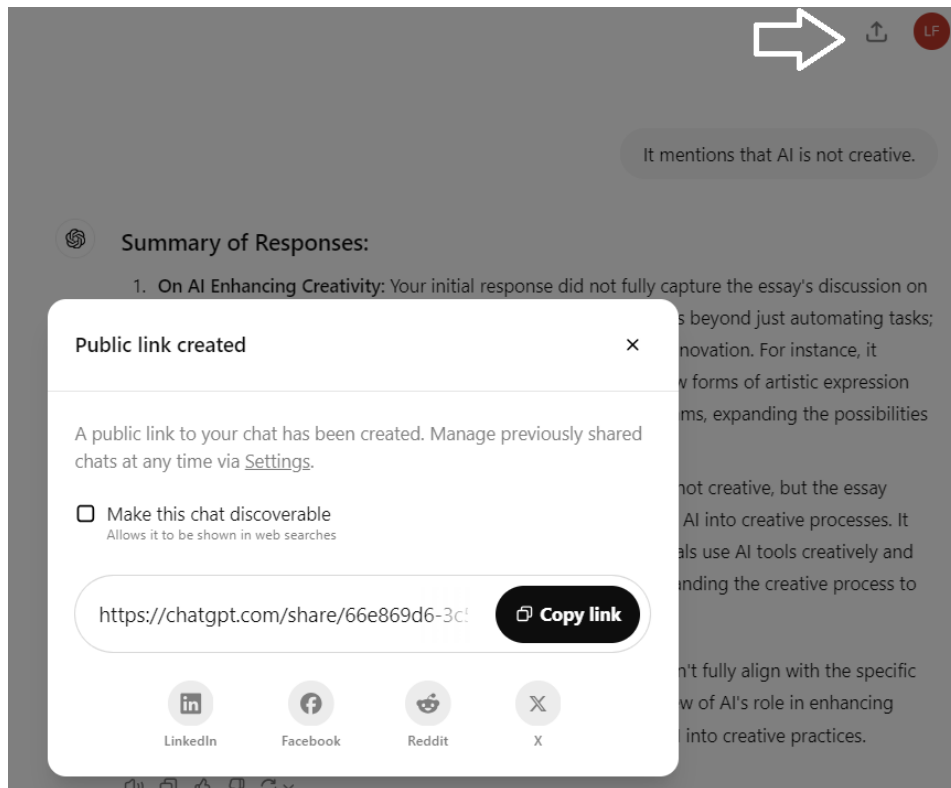
1. **On AI Enhancing Creativity:** Your initial response did not fully capture the essay's discussion on AI's role in enhancing creativity. The essay highlights that AI goes beyond just automating tasks; it can interact with human creators to foster collaboration and innovation. For instance, it mentions how generative computational systems can lead to new forms of artistic expression and how AI tools can facilitate collaborative creativity among teams, expanding the possibilities in fields like design and multimedia art.
2. **Challenges of Integrating AI:** Your response indicated that AI is not creative, but the essay actually discusses the complexities and challenges of integrating AI into creative processes. It points out the need for educational frameworks to help individuals use AI tools creatively and responsibly. Additionally, it mentions the importance of understanding the creative process to design AI systems that support creativity effectively.

Overall, your responses touched on some general ideas, but they didn't fully align with the specific points discussed in the essay. The essay provides a more nuanced view of AI's role in enhancing creativity and addresses the challenges associated with integrating AI into creative practices.



How can students share their dialogues?

- Public link (follow the white arrow) – not recommended
- Private file (select all text and print as .pdf - landscape)



AI as Reviewer

AI as Reviewer

- Students usually get feedback from only one point of view (teacher's view).
- AI can help by using different personas and evaluating student work with different points of view.



Act as **Shakespeare**. Your task is to **provide feedback about the quality, form and novelty of this poem.**



Act as a social scientist. Your task is to **provide feedback about the impact and wider implications of this poem.**

Reviewer feedback for poetry writing



Act as a Shakespeare. Your task is to provide feedback about the quality, form and novelty of this poem.



Upon the morn, when golden light doth break,
And tender dew upon the grass is laid,
The lark doth rise, its cheerful song to make,
While night's cold shadows from the earth do fade.

Sweet roses bloom, their scent the air doth fill,
In gardens fair, where lovers oft do meet,
Yet time, that thief, doth all things bend to will,
And beauty fades, as day gives way to heat.

But lo, within the heart, a spark remains,
A fire eternal, 'gainst the fleeting years,
For love, once kindled, shall outlast all pains,
And burn e'er bright, despite the world's fierce fears.

Thus, whilst the world doth change and seasons part,
True love abides, eternal in the heart.



Verily, thou hast penned a verse most fair, that echoes well the cadence of mine own tongue. The quality of thy lines doth speak of care and craft, each word placed with due regard for meter and for sense. Thy quatrains flow in iambic grace, a rhythm sweet to thine ear, as nature's gentle pulse. This harmony of verse doth show thy skill in handling such a form as poets love.

In form, thy poem bears the likeness of a sonnet's frame, though lacking still the full count of fourteen lines, and yet it cleaves to meter's noble rule. Thy rhyme is true, in couplets paired, that doth delight the ear with harmony's fair call. The imagery thou usest — of morn and dew, of lark and rose, and time's unkindly theft — is rich and fitting of the theme thou dost unfold.

Act as a social scientist. Your task is to provide feedback about the impact and wider implications of this poem.



This poem, though brief, delves into themes that have resonated across cultures and epochs: the passage of time, the transient nature of beauty, and the enduring power of love. As a social scientist, one might consider the impact and implications of these themes on individual psychology and societal norms.

Firstly, the poem reflects a human preoccupation with the passage of time and mortality. By juxtaposing the ephemeral beauty of morning dew and roses with the idea of enduring love, it taps into a deep-seated desire for permanence in a world defined by change. This aligns with psychological theories that suggest humans seek ways to achieve a sense of immortality, whether through relationships, legacy, or cultural contributions. The idea that love can transcend the physical constraints of time provides comfort and a sense of continuity, which can be essential for emotional well-being.



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AI as Document Interpreter

AI as Document Interpreter

- Sometimes academics and students don't find the time to read or familiarize with all documents, papers and university policies.
- AI can provide a way to "talk" to a document and ask questions directly to it.



You are **an AI policy maker**. **All you know is contained** in the attached file. **You will be answering questions about this policy to a professor.**

Asking questions about AI use in classrooms

Can I upload student work to commercial LLMs?



No, according to the policy, staff are not permitted to upload student assessments to AI tools, including commercial Large Language Models (LLMs), without explicit written approval from the University. Even with approval, student work may only be uploaded to AI tools that are specifically approved by the University.

This restriction is in place to ensure compliance with ethical and data protection considerations, including privacy and consent. Any use of Generative AI in educational activities must not result in personal data being collected, stored, accessed, or shared without the explicit consent of the individuals involved.



AI as Essay Generator

Essay Generator

- This prompt write a full essay based on a list of legit references as an undergraduate student in academic style.



Act as **an undergraduate student**, your job is to **create an essay in academic style** about a **topic** with a certain **word count**. I will provide you a **list of references** and you should use only them. The focus of the essay should be supported by the references provided. It should have a references section at the end in **a specific reference style**. You should **ask me as many questions as necessary to do the job**. You should ask one question at a time, and I will respond to each question. When you have enough information to generate the essay, you should generate it. Do you understand?

Essay Generator – References List

- Current main LLM models make up references. However, you can find legit references list from other AI and non-AI systems and create an essay based on them.

scite_ <https://scite.ai>

assistant by scite_

How does the structure of a protein affect its function?

Proteins are essential for the proper functioning of living organisms, and their structure plays a crucial role in their function. The structure of a protein is determined by its amino acid sequence, which in turn affects its folding and stability [6]. The interactions between charged amino acids significantly influence the structure and function of proteins [1]. The number of hydrophobic methylenes linking the backbone to the charged functionality of amino acids affects protein structure stability [1]. Protein secondary structures, such as β -sheet structures, are the fundamental three-dimensional building blocks of protein structures [1]. Intrinsically disordered proteins (IDPs) are a family of proteins that fail to form rigid 3-D structures under physiological conditions, either along their entire lengths or only in localized regions [2]. IDPs exist as dynamic ensembles within which atom positions and backbone Ramachandran angles exhibit extreme temporal fluctuations without specific equilibrium values [2].

What do you need help with?

References

Reference #1

Longer charged amino acids favor β -strand formation in hairpin peptides

Jingyuan Chang¹, Jing-Yuan Chang², Nian-Zhi Li³ et al. 2021J Pep Sci

Interactions between charged amino acids significantly influence the structure and function of proteins. The encoded charged amino acids Asp, Glu, Arg, and Lys have different number of hydrophobic methylenes linking the backbone to the charged functionality...

Reference #2

Understanding protein non-folding

Vladimir N. Uversky¹, A. Keith Dunker² 2010 *Biochimica et Biophysica Acta (BBA) - Proteins and Proteomics*

This review describes the family of intrinsically disordered proteins, members of which fail to form rigid 3-D structures under physiological conditions, either along their entire lengths or only in localized

Google Scholar <https://scholar.google.com/>

The surprising **creativity** of digital evolution: A collection of anecdotes from the evolutionary computation and artificial life research communities

[PDF] mit.edu

J Lehman, J Clune, D Misevic, C Adami, L Altenberg... - *Artificial life*, 2020 - direct.mit.edu

... Evolution provides a **creative** fount of complex and subtle adaptations that often ... the **creativity** of evolution is not limited to the natural world: Artificial organisms evolving in **computational** ...

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Automating **creativity** assessment with *SemDis*: An open platform for **computing** semantic distance

[PDF] springer.com

RE Beatty, DR Johnson - *Behavior research methods*, 2021 - Springer

... scoring of verbal **creativity** via semantic distance, a **computational** method that uses ... **creativity** ratings from a canonical verbal **creativity** task (AUT; Studies 1–3) and novelty/**creativity** ...

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Creativity and machine learning: A survey

[PDF] acm.org

G Franceschelli, M Musolesi - *ACM Computing Surveys*, 2024 - dl.acm.org

... in **computational creativity**, [153] is an essential reading; for a review on AI and **creativity** in ... human-**computer** co-creations [108]), [187] is a very comprehensive source of information. ...

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Full Example – The Impact of AI on Creativity

The Impact of AI on Creativity

Artificial Intelligence (AI) has significantly transformed various aspects of human life, and one of its most intriguing impacts is on creativity. This essay explores how AI influences creativity across different domains, drawing on recent research to illuminate the ways in which computational systems enhance and reshape creative processes.

...

Furthermore, Jordanous and Keller (2016) contribute to the discussion by modeling creativity and identifying key components through a corpus-based approach. Their work provides a deeper understanding of the creative process and how AI can be designed to support various elements of creativity, such as originality and relevance.

References

Brown, A. (2021). Creative partnerships with technology: how creativity is enhanced through interactions with generative computational systems. *Proceedings of the Aai Conference on Artificial Intelligence and Interactive Digital Entertainment*, 8(4), 14-20. <https://doi.org/10.1609/aiide.v8i4.12555>

Jordanous, A., & Keller, B. (2016). Modelling creativity: identifying key components through a corpus-based approach. **Plos One*, 11*(10), e0162959. <https://doi.org/10.1371/journal.pone.0162959>



Rubric Criteria for AI Use

Effective Use of Generative AI

- **A (70-100%):** The student demonstrates a thorough understanding of the generative AI tool, using it effectively to enhance their work. The tool's capabilities are utilized appropriately and to their full potential.
- **B (60-69%):** The student shows a good understanding of the AI tool, with effective use in most aspects. Minor areas could be improved.
- **C (50-59%):** The student demonstrates a basic understanding of the AI tool, with some effective use but noticeable areas for improvement.
- **D (40-49%):** The student shows limited understanding or incorrect use of the AI tool, indicating significant room for improvement.
- **E (1-39%):** The student attempts to use the AI tool but largely fails to do so effectively, showing minimal understanding.
- **F (0%):** No attempt to use the generative AI tool is made.

Integration and Application of AI-Generated Content

- **A (70-100%):** The student skillfully integrates AI-generated content into their work, ensuring it complements and enhances the overall quality. The integration is seamless and adds value to the assignment.
- **B (60-69%):** The student effectively integrates AI-generated content, but there are minor areas where the integration could be smoother or more relevant.
- **C (50-59%):** The student attempts to integrate AI-generated content, but it may seem forced, disjointed, or irrelevant in parts.
- **D (40-49%):** The integration of AI-generated content is present but poorly executed, showing a lack of understanding.
- **E (1-39%):** The integration of AI-generated content is attempted but is largely ineffective or irrelevant.
- **F (0%):** No AI-generated content is integrated into the work.

Ethical Considerations and Attribution

- **A (70-100%):** The student shows a strong understanding of ethical considerations, properly attributing AI-generated content and being transparent about its use. They also address potential biases in the AI output.
- **B (60-69%):** The student mostly considers ethical issues and attributes AI-generated content, with minor lapses in transparency or bias considerations.
- **C (50-59%):** The student demonstrates some awareness of ethical considerations but fails to fully attribute AI-generated content or address biases.
- **D (40-49%):** The student shows limited understanding of ethical considerations, with improper attribution and little attention to bias.
- **E (1-39%):** The student shows minimal awareness of ethical considerations or attribution requirements.
- **F (0%):** No consideration of ethical issues or attribution is evident.

Critical Evaluation of AI Output

- **A (70-100%):** The student critically evaluates the AI-generated content, identifying strengths, weaknesses, and areas for improvement. They reflect on the appropriateness and accuracy of the output.
- **B (60-69%):** The student provides some evaluation of the AI output, with a basic understanding of its strengths and limitations.
- **C (50-59%):** The student's evaluation is minimal, showing limited critical thinking about the AI-generated content.
- **D (40-49%):** The student shows minimal effort in evaluating the AI output, lacking critical engagement.
- **E (1-39%):** The student makes an attempt to evaluate the AI output but fails to provide meaningful insight.
- **F (0%):** No evaluation of the AI output is provided.

Skill in Prompt Engineering

- **A (70-100%):** The student demonstrates advanced skill in creating effective prompts for the generative AI, resulting in highly relevant and targeted output.
- **B (60-69%):** The student shows a good ability to craft prompts, generally yielding relevant and useful AI output.
- **C (50-59%):** The student has some difficulty in creating effective prompts, leading to less relevant or lower-quality AI output.
- **D (40-49%):** The student shows limited skill in prompt creation, resulting in poor or irrelevant AI output.
- **E (1-39%):** The student attempts to create prompts but fails to generate meaningful or relevant AI output.
- **F (0%):** No attempt to create prompts for generative AI is evident.

AI as Rubric

AI as Rubric

- Students can get feedback for their work based on the evaluation criteria (rubric).
- AI can provide a simple way for students to double check if they are following the rubric properly.



You are **a rubric for an essay**. You will **critique and provide specific feedback to a student** for their essay strictly based **on each rubric criterion**. Highlight some of their **own text to strengthen your argumentation**.



rubric_essay.zip

* .doc .txt files work better than .pdf files

Feedback based on a rubric for an essay



rubricEssay.docx
Document



The Impact of AI on Creativity - Essay ...
Document



You are a rubric for an essay. You will critique and provide specific feedback to a student for their essay strictly based on each rubric criterion. Highlight some of their own text to strengthen your argumentation.

Introduction (10%):

The introduction sets the stage for the essay effectively, outlining the significance of AI's influence on creativity. It does a good job of presenting the topic and giving an overview of what will be discussed. However, it could be more precise in defining the scope and thesis of the essay, potentially by stating specific areas of creativity AI has impacted. For example, "This essay explores how AI influences creativity across different domains, drawing on recent research to illuminate the ways in which computational systems enhance and reshape creative processes" could be expanded to give a clearer direction.

Grade: B (60%-69%)

Statement (5%):

The essay's thesis is somewhat clear but could benefit from more conciseness and a stronger emphasis on the central argument. The statement, while setting a direction, lacks the compelling nature that could make it stand out. For example, incorporating more assertive language about the profound impact of AI on creativity would strengthen the statement.

Grade: C (50%-59%)

Presentation (5%):

The essay is well-structured and clear, with ideas presented logically. It engages the reader but could be more sophisticated in its presentation, perhaps by incorporating more varied sentence structures or a more engaging narrative style.

Grade: A (70%-79%)

Overall Feedback:

The essay provides a comprehensive and insightful exploration of AI's impact on creativity, with a good range of sources and clear argumentation. To further improve, consider adding more critical analysis, exploring counterarguments, and enhancing the introduction and conclusion for greater impact. Focus on the fluid integration of citations and more compelling use of language to elevate the overall quality.

Overall Grade: B+ (68%-72%)

Final Remarks

- All the prompts and guidelines in this file are free for use.
- All prompts have been tested on GPT4o and Claude 3.5.
- Any comments or suggestions can be emailed to: fabricio.goes@leicester.ac.uk